PENN STATE MEDICINE

A History with Heart
CHILD LIFE STAFFER TURNS TO PATIENTS FOR CANCER INSPIRATION

For more than fourteen years, Janiece Crovella, child life specialist at Penn State Hershey Children’s Hospital, has helped hundreds of children fighting cancer. As a child life specialist for nearly three decades, she helps children deal with the every day adjustments and lifestyle changes that need to be made when faced with illness while showing them the ways to continue their lives and continue being kids. Who would’ve thought her life would be so closely affected by the disease her patients deal with everyday.

Following years of healthy mammograms, Janiece was not expecting the news she received following her annual mammogram in December 2007: she had cancer and needed both a mastectomy and chemotherapy. In February 2008, Janiece returned to work with the families at Children’s Hospital and finished her treatment in May.

Janiece’s empathy has now reached a new level of understanding. “It is not that I wasn’t aware of how debilitating treatment can be or how the whole family is affected by it, but it now has a much more significant meaning to me,” she said.

Janiece credits the children she works with everyday as her role models. Her new diagnosis added credibility to her role with the kids and young adults. “Cancer is a great leveler,” she said.

“Many parents saw it as a great injustice because of the work I do. It is a quiet reminder that cancer has no boundaries, no one is exempt.” – By Amy Buehler-Stranges
First note: Message from the dean and CEO

A rich history: Penn State Hershey Heart and Vascular Institute advances heart technology

Collaboration makes it work: Penn State Hershey Bone and Joint Institute

The changing face of cancer care: Integrating research into treatment options

Translational research: A bridge to relevant treatments

Penn State Hershey Cancer Institute earns recognition

Penn State Care Fairs reach underserved populations

Philanthropy in Action: Susan G. Komen for the Cure Foundation

Medical Center performs first living-donor liver transplant

Trauma units granted Level 1 accreditations

College of Medicine graduates its thirty-eighth class

Graduate student placement 2008

White Coat Ceremony welcomes next class of physicians

M.D./Ph.D. student earns national student research grant

Collaboration and connections spark neuroscience research

Tombran-Tink pursues dream work

Philanthropy in Action: The Foreman Foundation

Faculty and staff campaign passes half-million mark

Teaching an old drug a new trick

Painless shots for babies, thanks to sugar water

Lady Lions host breast cancer research fundraiser

Faculty and staff news

Anonymous gift boosts expansion of simulation training

Ed and Jeanne Arnold: A tradition of giving

Penn State Hershey Children’s Hospital one step closer

Class notes

Memorials

Parting shot: John Naeye, M.D.

For more information about the Penn State Milton S. Hershey Medical Center programs that are featured in this issue, please call the Care Line at 1-800-243-1455 or contact the program directly at the number below:

Heart and Vascular Institute: 877-GO-PSHVI
Cancer Institute: 717-531-6585
Bone and Joint: 717-531-5638
We are in a unique position to fulfill the promise of collaborative, translational research. Investigators and care providers at Penn State Milton S. Hershey Medical Center work hand-in-hand, thoughtfully examining the convergence of the standard of care today and opportunity for better treatment tomorrow.
From bench to community. This is today’s driving theme in biomedical research. For us to deliver the value our patients expect, scientists and physicians must work together to identify challenges and opportunities and to problem-solve together.

Nationally, the medical research community has heard the call—from the National Institutes of Health, from patients, and from caregivers—to move toward a more cohesive research environment, encouraging more expedient translation of life science advances to solutions that can improve the lives of patients. While it’s well-known that the path from discovery to health improvement is long and arduous, we’re committed to navigate with renewed vigor and teamwork.

Here in Hershey, we are in a unique position to fulfill the promise of collaborative, translational research. Investigators and care providers at Penn State Milton S. Hershey Medical Center work hand-in-hand, thoughtfully examining the convergence of the standard of care today and opportunity for better treatment tomorrow. Even more research is made possible thanks to our integration with other Penn State colleges and programs. Growing numbers of multi-disciplinary projects are underway that we’re confident will find their way to application in clinical care of our patients.

This issue of Penn State Medicine exemplifies many of these projects, beginning with our ground-breaking work in the field of artificial hearts and heart assist devices. From the first devices that were conceived, developed, and brought to clinical practice in the 1970s, to the cutting edge devices that are saving patients’ lives today, Penn State Hershey scientists, engineers, and physicians have had impact worldwide.

Translational research is also embodied in Penn State Hershey Cancer Institute, which is just months away from taking up residence in a new building. The 175,000-square-foot facility has been specifically designed to allow open collaboration among physicians and scientists.

As our newest heart devices, cancer treatments, and other research advances move toward the patients who stand to benefit, I am proud of the time, energy, and spirit of collaboration that has gone into this work. From the ideas conceived through pure discovery of the intricacies of the body, to studies of potential new options for treatment of disease, these headline-worthy innovations are what our patients have come to expect from Penn State.

Harold L. Paz, M.D., M.S.
Chief Executive Officer,
Senior Vice President for Health Affairs, and
Dean, Penn State College of Medicine
In 1992, Jack Bateman, then a 58-year-old truck driver from Union County, Pa., was suffering from end-stage congestive heart failure. The once-burly, 6-foot-tall man was down to 121 pounds. Every breath was a struggle.

“We were watching him die,” said his wife, Chris. “His heart wasn’t working. Fluid was constantly building up. He couldn’t sleep because he couldn’t lie down, he was always sitting up.”
His doctor delivered news that, at the time, seemed nearly as grim as death itself—Bateman’s only hope for survival was a heart transplant. The problem was, donor hearts weren’t easy to come by and Bateman was growing weaker by the day.

That September, as he waited for a donor heart, physicians at Penn State Milton S. Hershey Medical Center attached Bateman’s heart to an air-powered pump that was pioneered at Penn State. Known as the Pierce-Donachy left ventricular assist device, it helped Bateman’s failing heart pump blood through his body until a donor heart could be transplanted.

Almost immediately, Bateman was able to breathe easier. His energy returned. Within two months, he was healthy enough to undergo a transplant.

Today, Bateman is a 72-year-old grandfather and going strong. In the years after the transplant, he walked four miles a day and, even more significant, he walked his daughter down the aisle.

“I don’t know where I’d be without the Medical Center team,” he said. “There’s no question they saved my life.”
A Team Effort

The entire heart research team—including surgeons, physicians, engineers, scientists, machinists, fabrication specialists, veterinarians, and animal care specialists—who comprise an arm of Penn State Hershey Heart and Vascular Institute have saved thousands of lives around the world. They’ve also earned Penn State a reputation as an international leader in the research, development, and clinical use of heart pumps and artificial hearts.

That’s no small accomplishment considering that Penn State College of Medicine is still in its infancy compared to some of the nation’s most well-respected teaching hospitals, such as Mayo Clinic, Cleveland Clinic, Johns Hopkins, and Massachusetts General.

Penn State accepted its first medical students in 1967, the year of the first human heart transplant. On any given day, more than 3,000 people are awaiting hearts in this country and, over the course of a year, only 2,200 hearts become available for transplantation. Nearly 25 percent of those on the list will die waiting. Another 200,000 people will die from heart failure.

The National Institutes of Health began funding artificial heart research in the 1960s. Out of the nearly three dozen medical research teams that embarked on a journey to design an artificial heart, only a few remain.

Earliest Roots

Ask anyone on the Penn State heart team about the driving force behind the program and they’ll point to William S. Pierce, M.D.

Pierce, now retired but still a strong presence at the College of Medicine, was recruited to Penn State in 1970 to serve as assistant professor of surgery. The hospital was scheduled to open that fall and Pierce was chosen to lead the heart research team.

While enrolled in medical school at the University of Pennsylvania, Pierce dreamed of replacing ailing hearts with artificial ones. By the time he finished his residency, he and a colleague already had a federal grant for artificial heart development.

Pierce chose Penn State College of Medicine for several reasons. First, the heart program had a strong commitment from the college’s leadership, including John A. Waldhausen, M.D., a heart surgeon chairing the surgery department. Second, Penn State had an excellent engineering program and both Pierce and Waldhausen believed collaboration between surgeons and engineers was vital to the success of the program—uncommon thinking at that time.

And, unlike many of the teaching hospitals located in inner cities, the College of Medicine was located in the heart of farm country and could accommodate research on large animals, most notably calves. A calf’s heart is almost identical in size to an average man’s heart.
One of the things that led me into this field was the risk involved in cardiac surgery. When I first started in cardiac surgery (in the early 1960s), the risk was 50-50,” Pierce said. “By 1970, a lot of people were having open heart surgery, but 5-10 percent of them still couldn’t come off the heart-lung machine after the surgery. They died on the table.”

Penn State’s first significant heart team accomplishment addressed this very problem. For several years, Pierce worked with a team that included James H. Donachy, fabrications director in the Division of Artificial Organs at Penn State, to engineer a pneumatic-driven assist pump that could help a weak heart pump blood in the aftermath of surgery and, ultimately, help that heart heal.

“The heart has to work hard right after surgery and we believed this assist pump could support circulation while the heart recovered,” Pierce said.

One of the biggest challenges was creating a pulsatile heart pump, meaning that the flow of blood adjusted as the person sat, stood, walked, or exercised—just like a normal-functioning heart. Other pumps being developed at the time had a continuous flow that did not adjust.

Initially, the first few designs failed, but by 1973 the team developed the first extremely smooth, seam-free, pulsatile blood pump and began research studies. The first few patients who were connected to the pump did not survive, although it wasn’t because of the pump’s design. All were “very high-risk patients,” Pierce said.

Then in 1976, Pierce attached the pump—the same one later used in Jack Bateman’s surgery—to the heart of a young woman who could not come off the heart-lung machine following surgery. As soon as the device was connected, her heart began pumping blood.

Within days, her heart recovered, she was removed from the machine, and she went home.

Soon, Other Success Stories Followed

By 1980, hospitals around the country were asking for the Pierce-Donachy heart pump and Penn State turned to Thoratec Corporation in California to further develop and manufacture it.

The pump, about the size of a fist, rested on a patient’s abdomen and was connected to the patient’s own heart with plastic tubes that passed through the chest. Powered by a drive unit the size of a dishwasher, patients could not leave the hospital. And, because it was attached through openings in the skin, infection was a constant risk.

But while Pierce originally envisioned the pump as a means to wean heart surgery patients off the heart-lung machine, it became more valuable to cardiac surgeons nationwide as a ‘bridge to transplantation.’

“By 1980, heart transplants were a very accepted technology, but nearly 25 percent of patients died before a heart became available,” Pierce said. “So instead of using our heart pump for a week or two while a patient recovers from surgery, it was
now being used for six months or more while a transplant patient gained seniority on the waiting list.”

Today, the heart assist device is still manufactured by Thoratec and has been implanted in thousands of patients around the world with enhancements including a smaller power unit that allows more patient mobility—including the opportunity to go home while awaiting their heart transplant.

The pump has been recognized as an International Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers. It remains one of two air-driven pumps to win the Food and Drug Administration seal of approval for use as a bridge to transplantation.

Research Continues

As Penn State basked in the success of the Pierce-Donachy heart assist device, the heart research team was already working on a pneumatic artificial heart that could temporarily replace a human heart while a patient was awaiting a transplant.

By 1984, they set a world record when they implanted the first Penn State Heart into a calf that survived 354 days.

The following year, the artificial heart was implanted in Tony Mandia, a 44-year-old former Philadelphia recreation worker who lived with the device for eleven days before undergoing a heart transplant. Mandia died eighteen days after the transplant, but Penn State received international attention for the artificial heart that kept him alive until a donor heart could be located.

While the pneumatic Penn State Heart was never manufactured commercially like the Pierce-Donachy pump, it was used successfully in five patients at Penn State Hershey Medical Center as a bridge to transplant. Penn State and the Medical Center were highlighted in a 1987 *New York Times* article about using the pneumatic heart to sustain a 49-year-old Huntingdon County man for 397 days.

The Next Generation

Even as they were testing the pneumatic devices, the team recognized that for patients to enjoy quality of life—the ability to go home, return to work, and participate in daily activities—they needed to develop the next generation of artificial hearts and heart devices—implantable, electric, even wireless ones.

In 1988, the Medical Center received a $5.7 million grant from the National Institutes of Health to do just that. Gerson Rosenberg, Ph.D., professor of surgery and bioengineering, led the team, which combined the theories learned and tested from the pneumatic devices with the newest advancements in electronics and engineering. Changes had to be made to nearly every part of the system, from the pump and motor to the chambers and control systems. All in all, the development of the electric devices included more than 800 design steps.

The target patients for these devices also changed.

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**Over the Years**

**2003** | Gayle Snider of York, Pa., becomes the first U.S. patient with an Arrow LionHeart device to go home from the hospital.

**2003** | November The first results of the Arrow LionHeart-European research study led by Walter Pae, Jr., M.D. are unveiled at the American Heart Association’s 76th Scientific Sessions. The study suggests that fully-implantable mechanical heart support is possible and reliable. Only three device failures were recorded in 17.3 years of support time.
“By the mid-to-late 1980s, after the development of temporary heart assist devices, we realized there was an even larger market for people whose own hearts wouldn’t recover and needed a permanent device,” Rosenberg said.

During the next few years, the Medical Center experienced several groundbreaking accomplishments, the most important being the development of the LionHeart Ventricular Assist Pump and the Penn State Total Electric Artificial Heart. Both are destination therapies, meaning that they are designed as permanent treatments for end-stage heart failure patients who, because of health or age, cannot undergo a transplant. Both are totally implantable.

“These devices will greatly reduce the chance for infection, improve mobility for patients, and enhance their quality of life,” Rosenberg said.

The LionHeart debuted in 1999. Developed over the course of a seven-year collaboration between the Penn State team and Arrow International, Inc., of Reading, Pa., the LionHeart pump contains a plastic blood sack that fills with the patient’s blood after each “beat.” Then, the pump’s metal plate presses against the sack, forcing the blood out of it and into the body. An electric motor powers the LionHeart while an automatic control algorithm increases circulation during exercise and decreases it at rest.

While the patient carries an eight-pound battery pack that transmits currents through the skin to an internal transformer coil, the internal batteries have enough power that the patient can take off the external pack for 20 minutes—to swim or take a shower, for example—before the device begins beeping to let the patient know it is running out of power.

The first clinical research study took place in Europe beginning in 1999, with the United States clinical research studies starting in 2001. Walter E. Pae Jr., M.D., professor of surgery at the Medical Center and head of the U.S. clinical studies, reported that the European testing suggested that fully-implantable mechanical heart support is possible and reliable. Only three device failures were recorded in 17.3 years of support time.

In the United States, clinical research studies recently concluded. Penn State Hershey Medical Center hit a national milestone in 2003 when Gayle Snider of York, Pa., became the first person to leave the hospital with the LionHeart. While Snider originally was not a heart transplant candidate, he was able to undergo a transplant a year later thanks to the success of the LionHeart.

In 2000, Penn State began working with Abiomed, a Massachusetts-based company that manufactures cardiac assist devices, to design a total electric artificial heart for patients with end-stage congestive heart failure.

The heart—to be known as Abiocor II when it becomes commercially available—is scheduled to begin clinical research studies in late 2008. Researchers expect that the heart will last for five years and, because of its small size, will be suitable for both men and women.

Penn State Hershey Heart and Vascular Institute’s ventricular assist device program becomes one of only a handful of programs nationwide to earn the Joint Commission’s Gold Seal of Approval™ for implanting VADs as destination therapy for patients with advanced heart failure.

Tim Ritchie, a 34-year-old Jonestown, Pa., man who received a heart pump six months earlier, leaves the Penn State Hershey Medical Center with a recuperated heart and no pump. It is rare that a failing heart recovers on a pump; typically patients remain on the pump permanently or until a donor heart is found.
The device is implanted with a controller and energy transmission system in the space left by removal of the patient’s heart. It has no wires, tubes, or other connections protruding through the skin.

Heart Assistance for the Smallest Patients

While the Penn State heart research team continues to build upon its successes, the focus now is on developing pumps small enough to provide heart support for infants, children, and teens. The researchers currently have a $5 million grant from the National Heart, Lung, and Blood Institute of the National Institutes of Health.

Few heart assist pumps have been developed or adapted for use in children. Children in need of heart support typically suffer from congenital heart defects like hypoplastic left heart syndrome, in which the left part of the heart is underdeveloped, or left ventricle dysfunction due to an infection or inflammation of the heart. A heart assist device could provide support for at least six months until the heart recovers or until a donor heart can be found.

Challenges with this type of device include developing smooth materials and making seamless connections that ensure red blood cells and platelets don’t form into clots that can break loose, travel through the bloodstream, and cause a stroke. Heart assist pumps can also damage red blood cells by causing them to rupture.

Pediatric heart assist devices pose even more complex problems. Due to the smaller size of the blood pump, blood flow in the smaller version is completely different than in the larger adult heart devices.

“Making these pumps smaller is not just a matter of shrinking everything. We really have to be careful about how we design the pump. When you make blood pumps, or even grafts or tubes, the fluid dynamics change as the size changes,” said principle investigator William J. Weiss, Ph.D., professor of surgery and bioengineering. “In the smaller pumps, dead zones, or low-rate flow zones, can form inside the blood pumps. This slow-flowing blood can create clots. Our challenge is to be sure the blood is neither too active nor too slow.”

Persistence Pays Off

No one doubts that Penn State will be just as successful in its pediatric endeavors as it has been in its research and development of heart assist devices and artificial hearts for adult patients.

Tim Baldwin, a program director at NIH’s National Heart, Blood, and Lung Institute, credits the Penn State team’s persistence for its many successes and contributions to heart assist research worldwide.

“Many of the teams that started out (in heart research) ran into hurdles that became too great or, because of financial reasons or because they had tried and were unsuccessful, they ended up switching gears. But Penn State has had a great group of investigators for a long time and they have been persistent. There have been a lot of novel ideas that came out of that team that have greatly benefitted everyone working in heart research,” Baldwin said. 

Experts within Penn State Hershey Heart and Vascular Institute are saving lives by combining a new therapy with existing heart-lung bypass technology. Calling the procedure TECMO—therapeutic extra-corporeal membrane oxygenation—Penn State clinicians use an ordinary heart-lung bypass machine to circulate oxygen-rich blood throughout the body.

The technology itself is not new. It is traditionally used to support underdeveloped hearts and lungs in premature babies, or as a therapy of last resort in adults with organ failure.

However, the unique methods involved in TECMO are new in this country and may change the way American hospitals care for patients near death from catastrophic heart events.

TECMO was recently introduced to Penn State Hershey Medical Center by Aly El-Banayosy, M.D., new director of its Heart and Vascular Intensive Care Unit. “We are essentially giving failing hearts a chance to rest and recuperate,” explains Banayosy. “TECMO also rejuvenates other organs that have suffered from low blood flow, and leaves the patient in better condition to receive more aggressive treatment.” Subsequent therapies could be as complex as a total artificial heart (see “Newest device…,” on page 11) or as simple as medications and rest.

“By having so many amazing saves and we have only just begun to have an impact,” states Heart and Vascular Institute Director Lawrence Sinoway, M.D. Sinoway stresses that the Heart and Vascular Institute’s collaborative care model and its ability to recruit experts like Banayosy have positioned it as a national leader.
Penn State Hershey Heart and Vascular Institute in May became one of only a few elite programs in the nation to earn the Joint Commission’s Gold Seal of Approval™ for implanting ventricular assist devices (VADs) as destination therapy for patients with advanced heart failure.

More than 350 patients have received heart pumps at Penn State Hershey Medical Center. Some devices are implanted to support a failing heart until a donor heart is available for transplant, but for patients who are not transplant candidates, VADs are considered destination therapy—their only option for survival. For patients with end-stage heart failure, the two-year survival rate for those who receive VADs as destination therapy is 73 percent—the same as for those who receive heart transplants.

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Heart pump earns Joint Commission Certification

Jerry Goodrich, 57, of Dauphin County, Pa., was healthy and hard-working until he suffered a heart attack on July 6, 2008. Recognizing the symptoms, he asked his wife to drive him to nearby Penn State Hershey Medical Center.

Goodrich awoke two weeks later with his own heart gone and the CardioWest™ Temporary Total Artificial Heart in its place. “I’m just glad I’m alive,” Goodrich said.

During the heart attack, Goodrich didn’t respond to drug therapies or an intra-aortic balloon pump. He was then placed on a heart-lung bypass machine for five days (see “TECMO”, on previous page). Doctors decided that Goodrich’s only hope of survival was the CardioWest™ artificial heart, the modern version of the Jarvik 7 artificial heart. The CardioWest heart is the only FDA-approved temporary total artificial heart in the United States and is used as a bridge to transplant for patients who are close to death from end-stage heart failure or devastating cardiac events.

The Medical Center is one of only twelve hospitals in the country that is certified to implant the CardioWest heart and Goodrich is only the second patient to receive it here.

The Heart and Vascular Institute sought Joint Commission certification for its VAD program because the standards are regarded as the most rigorous in the health care industry. The program recently underwent an extensive on-site review by a select team of Joint Commission professionals that evaluated the program’s performance in areas that affect patient care.

“The Joint Commission certification acknowledges the hard work and innovation of our research program,” says Lawrence I. Sinoway, M.D., director, Heart and Vascular Institute. “The Gold Seal of Approval puts us in good company with the most respected heart-assist programs in the country. This achievement is a credit to the extraordinary staff and team work that exemplifies the Medical Center and Penn State Hershey Heart and Vascular Institute.”

The evaluation and resulting certification decision was based on compliance with consensus-based national standards, effective use of evidence-based clinical practice guidelines to manage and optimize care, and an organized approach to performance measurement and improvement activities.

The Joint Commission is an independent, not-for-profit organization established more than fifty years ago. It is the world leader in evaluating the quality and safety of care delivered in more than 15,000 health care organizations across the country.

Newest device allows patient to wait for a new heart

Thanks to the expertise of the Hershey heart team, Goodrich’s health is improving, his spirits are good, and he’s hoping for a heart transplant in the near future so he can return home to his family.

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The Penn State Hershey Bone and Joint’s new state-of-the-art HydroWorx® therapy pool allows rehabilitation patients to exercise on an underwater treadmill. This unique design increases flexibility while decreasing joint stiffness.
Collaboration makes it work

Cohesion is the theme that binds disciplines at the new Penn State Hershey Bone and Joint Institute. It’s a theme that responds, in part, to an expanding body of orthopaedic and musculoskeletal knowledge leading to increased sub-specialization. The Institute, driven by a commitment to patient care, is successfully meeting the challenges of today’s practice environment in a collaborative multi-disciplinary program that pairs specialization with shared intellect.
“While sub-specialization has enhanced treatment in many ways, it can cause caregivers to become isolated within specific areas of interest,” says Kevin Black, M.D., professor and C. McCollister Evarts Chair, Department of Orthopaedic Surgery and Rehabilitation, and director of the Bone and Joint Institute. “Our Institute embodies a conscious effort to avoid fragmentation and to maintain the kind of integration that best serves our patients.”

Opened in March of this year and housed in a two-story 165,000-square-foot building on Penn State Milton S. Hershey Medical Center’s East Health Campus, the Bone and Joint Institute includes all orthopaedic specialties as well as rheumatology, sports medicine, rehabilitation, and physical, occupational, and speech therapies. An underwater treadmill, a relatively new therapeutic advance available in only a few centers, allows patients to remain active in the water, which reduces stress and speeds recovery. Radiology services, including MRI and CT scanning, are also located in the building, as is the Penn State Hershey Spine Center—a collaboration between the Bone and Joint Institute and the Penn State Hershey Neuroscience Institute which enables consultation among physicians in the various specialties.

“This is a program that encompasses our patient care, teaching, research, and service missions,” Black says. “For the patient’s convenience, all musculoskeletal care is in one place.”

He adds that everything a patient needs is available in the same building. For people who may have mobility problems, this spells more than just convenience. Care is patient-centered. They can now easily go from a physician’s office to physical therapy or radiology instead of having to travel to another part of the campus. Physicians can consult with colleagues while a patient is at the Institute, often avoiding difficult follow-up for the patient.

“If I have a patient with knee pain in my office and I want her to see someone who specializes in knee replacement, I can just walk across the hall for that person,” Black says. “What this means for the patient, in most cases, is that there is no need for an additional appointment.”

These kinds of services are critically important in central Pennsylvania where the over-65 population is projected to increase by a possible 40 percent in the next twenty years. This demographic presents a major challenge for the musculoskeletal care of people who are living longer and want to remain active. As Black points out, “In order to maintain a high quality of life, you need hips, knees, and joints that work.”

Collaboration is enhanced by proximity in many ways. Orthopaedic physicians who specialize in hand surgery are neighbors of plastic surgeons who perform the same procedures. Their consultation on cases benefits both surgeon and patient. The impact is the same for orthopaedic physicians and rheumatologists who collaborate with each other under one roof. Black emphasizes that the extent of collaborative opportunities available at the Institute furthers research activities. He refers to projects with Tim Mosher, M.D., who heads the Division of Musculoskeletal Radiology.
“We collaborate regularly with Dr. Mosher, who is an outstanding clinician scientist involved in basic research,” Black says. “His work provides insights in magnetic resonance imaging for orthopaedic injuries and helps provide better understanding of certain orthopaedic diseases, such as arthritis.

Approximately thirty research projects are ongoing, some with Penn State researchers in State College. All research is augmented by collaboration within the Institute, such as studies on implants for shoulder replacement, bone graft substitutes for fractures that don’t heal, weight loss for arthritis patients, and a significant number of basic science initiatives in tissue engineering and in understanding how bone and cartilage cells communicate.

Treating the Youngest Patients

Black says there are far too few pediatric orthopaedists in the country, but this is an underserved discipline to which the Bone and Joint Institute directs special focus. Recently, Kristi Fortuna, M.D., assistant professor, Bone and Joint Institute, was the only pediatric specialist on the team, but she has since been joined by William Henrikus, M.D., and Douglas Armstrong, M.D., who began as division chief of pediatric orthopaedics in September.

Fortuna agrees about the need for more pediatric orthopaedists, pointing out that the Institute is the only center in central Pennsylvania equipped to handle complex medical issues within pediatric orthopaedics.

“I treat patients who have had tracheostomies and have feeding tubes, children who need special care beyond their orthopaedic problems,” she says. “These young patients require the resources of an academic center such as ours.”

Children seen by Fortuna may suffer from a congenital club foot, developmental dysphasia of the hip, stiff joints, bowed legs, elbows that don’t extend or bend, and numerous injuries that can impair the joys of childhood. “We have many more options today in treating children and adolescents,” she says.

Fortuna treats youngsters with metabolic bone disorders, including osteogenesis imperfecta, a brittle bone disease. Some of these patients are only two days old and have already suffered a fracture during the delivery process as the result of bones that are weak.

“Working with children with complex disabilities as I do, it’s enormously helpful to work closely with other pediatric specialists,” she says. “We don’t think of children as being small adults. They heal differently and have to be treated differently, and that’s what we do.”

New Attention for Osteoporosis Treatment

According to Black, orthopaedic medicine is beginning to address osteoporosis with newer, improved emphasis. “Traditionally, our profession hasn’t done well in providing appropriate follow-up for patients,” he says.

To confront that disparity, the Institute has an oncologist with an interest in metabolic bone disease. Edward Fox, M.D., associate professor, Department of Orthopaedic Surgery and Rehabilitation, is setting up a clinic for patients with low energy trauma-related fragility fractures, providing appropriate follow-up for these patients who are at risk for osteoporosis.”
The promise of the new Penn State Hershey Cancer Institute building has a little something for everyone—patients will receive interdisciplinary cancer care options in one location while physicians and scientists gain the ability to work together under the same roof in the name of research. The four-story, 175,000-square-foot facility is slated for completion in late spring 2009.

“The design of the building reinforces our concept of a community of individuals devoted to providing comprehensive cancer care and finding a cure for cancer,” says Thomas P. Loughran Jr., M.D., director of the Cancer Institute. The new building also has the ambitious distinction of being the centerpiece for the Cancer Institute’s application for National Cancer Institute (NCI) designation in May 2010. For the past few years, the Cancer Institute has been working with an external advisory board that holds “trial runs” to test the readiness of the institute in relation to applying for NCI designation.

According to Loughran, the advisory board has both leading scientists and cancer center directors from NCI-designated institutions. “In all of the areas they are examining, part of what they are looking for is an answer to how the programs will benefit everyone in terms of prevention, detection, and new and better treatments,” says Loughran.

“They’re looking to see that once it is formed, it takes maximum advantage of the parent university at University Park, as well as other members of the Cancer Institute: Lehigh Valley Hospital and Health System, Mount Nittany Medical Center, Lewistown Hospital, Wyoming Valley Health System, and Susquehanna Health System.” The board then offers advice on improvements so that when the time comes, the institute will be as prepared as possible.

Penn State’s commitment to achieving NCI designation continues to be validated by this external peer review. The benefits of having NCI designation are prolific. Not only will Penn State Hershey Cancer Institute see its prestige elevated locally and nationally, but it will likely lead to a greater number of patient referrals while becoming a magnet for recruiting new researchers. “Having the NCI designation is the cornerstone necessary for building our reputation,” says Joan Pitcher, chief operating officer of the Cancer Institute. “We want referring doctors to think first about Penn State Hershey Cancer Institute when determining where to send their newly diagnosed cancer patients.”
The Cancer Institute hopes to elevate cancer care by integrating research with clinical care. “With physicians and researchers working together and cohabiting the same space, novel discoveries can be used right away and targeted for specific patients. In turn, after physicians identify patient issues in the clinic, they can quickly connect with the appropriate researchers, who can hopefully identify solutions more quickly,” says Pitcher.

A Commitment to Patients and Research

In addition to the value a new building would bring to an NCI application, the Cancer Institute recognized two significant needs in justifying the building. The first was the steady, incremental increase in patients of 10 to 15 percent per year, according to Loughran. “About six months ago, we had twelve chairs available to chemotherapy patients for infusions,” he says. “The demand increased to twenty chairs, and the new building will have forty. We simply couldn’t wait any longer.”

The second need was to create an environment to foster the growth of the Cancer Institute’s cutting-edge scientific programs and its Radiation Oncology Unit.

In the Experimental Therapeutics Program, led by Gavin P. Robertson, Ph.D., scientists are focused on using molecular pathways to distinguish cancer cells from normal cells and using that information to create targeted therapies. The program is working to better translate basic science discoveries into clinical applications. They are focused on nanotechnology, an area of rising national importance for targeted drug delivery.

Cancer Prevention and Control, led by Philip Lazarus, Ph.D., aims to improve the quality of life for people already diagnosed with cancer and to study the combination of exposure to carcinogens with genetic risk factors. A current project has Cancer Institute investigators working on a hospital-based control study for lung cancer, in which the genetics of Hershey-area residents are studied, along with their history of smoking habits, diet, family background, cancer history, and occupation.

At the same time, this group also is conducting a population-based control study focusing on colorectal cancer in Pennsylvania. “This is a very exciting time for us,” says Lazarus. “The state only approves two grants each year, and we were able to secure both a $4 million grant and $1.2 million grant to use during the next four years for these groundbreaking studies.”
They also are working in the field of pharmacogenetics to study how chemotherapy and chemopreventive agents work with the body’s metabolism. As they collaborate with other doctors and researchers, the opportunity to work in the same space will make research studies much more efficient. The new Cancer Institute building will provide better access to patients, more space for both patients and researchers, and state-of-the-art research labs near patient clinics.

The research in the Chemical Carcinogenesis and Chemoprevention Program, under the leadership of Karam El-Bayoumy, Ph.D., has led to a $7.5 million promise award from the Susan G. Komen Breast Cancer Foundation. Using a combination of nutrition and chemoprevention, the Cancer Institute plans to use animal models and lab work to prevent breast cancer in high-risk patients. They are currently working on therapies for future translational studies, as well as the design of future clinical chemoprevention research studies.

New developments within radiation oncology, led by Henry Wagner Jr., M.D., also have led to a need for more space. “In the last five years, we’ve seen an increase in the number of patients from about thirty per day to about sixty,” says Wagner. “We have also hired a full complement of five full-time radiation oncologists, increased our R.N. staffing from one to four, and made major upgrades in our treatment technology.”

The department also is providing several new, state-of-the-art treatment options: image-guided intensity modulated radiation therapy, in which a CT scanner within the treatment machine verifies the patient and tumor position before each radiation treatment; high-dose-rate brachytherapy for prostate cancer, which reduces treatment time from six weeks to several days; and hypofractionated image-guided radiation therapy, by which small tumors may be treated with three-to-five treatments, rather than the usual six-to-eight weeks of treatment, and may replace surgery.

Wagner also looks forward to the new building allowing doctors to bring all of their treatment equipment together in a common location, provide improved comfort and efficiency for patients, and facilitate clinical research and education for the next generation of physicians.

Raising the Bar in Cancer Care

Having research and clinical care in one facility allows for daily interactions between the scientists investigating cancer and the physicians treating cancer patients. The new facility will support multidisciplinary teams of surgeons, medical oncologists, radiation oncologists, nurses, social workers, dieticians, and care providers in a truly integrated fashion. “The increased collaboration leads to more choices and better care for the patient, which in turn means raising the bar in cancer care,” says Pitcher. Three of the five floors will be clinical space for outpatients, increasing the number of patients the Cancer Institute is able to accommodate.

“Newly diagnosed patients can see all the doctors they need in one visit through this co-localization,” says Loughran. “A patient who previously would have had to go from doctor to doctor, trying to coordinate schedules for their plan of care, will be able to have all of their doctors working on their case in one building, discussing one treatment plan, all for the best possible patient outcome.”

The other two floors will bring scientists together and provide more space for recruitment, while fostering the relationship between physicians and scientists. Even the building’s architects had translational research in mind with the main entryway to and from the offices. “Essentially it will look like a beehive with a spiraling atrium through the building that all goes to the middle,” says Loughran.

“With integration of translational/basic research and interdisciplinary clinical care, patients will be able to derive added benefit from novel clinical research studies and new therapeutic paradigms,” says Chandra P. Belani, M.D., deputy director of the Cancer Institute. “The new building will provide a one-stop shop for cancer patients that was never available in the area before.”

New Building, Bright Future

The new direction for the Cancer Institute is going to bring about some great changes. In combination with innovative research, the addition of a state-of-the-art building is sure to change the face of cancer care in Pennsylvania. “Currently there are no other areas in Pennsylvania outside Philadelphia and Pittsburgh where these levels of research and changes in patient care are happening,” says Pitcher. “In fact, we are the only site for clinical translational research.”

Up to this point, the patient experience has been traditional as far as aesthetics—there are standard waiting rooms traditionally expected in a doctor’s office. The addition of a healing garden, private treatment rooms, and a day hospital that will provide intensive care in an outpatient setting are all part of what will make patient care at the Cancer Institute stand out from anything else in the area.

Ten years from now, it is anticipated that the Cancer Institute will not only have the distinction of being an NCI-designated center but also will have made the move to being a comprehensive, or level two, cancer care center. “That is the greatest possibility and one all cancer centers strive for,” says Pitcher. “We look forward to making that a reality for Penn State Hershey.”
Master educator brings hands-on experience to classroom

In 2001, Kelly Karpa, Ph.D., R.Ph., found herself fighting for her two-year-old son’s life. At the time, Karpa was busy professionally, teaching pharmacology part-time at Penn State College of Medicine, opening her own consulting firm, and working for medical writing companies. Her focus changed abruptly when Kyle Karpa was diagnosed with a gastrointestinal infection. The doctors prescribed antibiotics, but Kyle’s body failed to eliminate the infection during a span of nine months.

As a pharmacist and pharmacologist, Karpa began to research other options for her son, which led her to learn about healthy bacteria, or probiotics. She and Kyle’s doctors chose to experiment with probiotics. In just ten days, Kyle’s infection was gone.

“This was a wake-up call for me,” said Karpa. “This showed me just how powerful alternative medicine can be.”

This life-changing experience became the inspiration behind Karpa’s book, *Bacteria for Breakfast: Probiotics for Good Health* and her current research with herbal medicines. It also led to a full-time job following her passion and a promotion—educating medical students and physicians. “I have the best job in the world for me,” said a beaming Karpa. “I absolutely love what I do, and there’s nothing better than that.”

In July, Karpa took the position of director of medical pharmacology instruction in the Department of Pharmacology at the College of Medicine. The main goal of creating this “master educator” position was to bring in someone to focus exclusively on ensuring the best pharmacologic education for the next generation of doctors and nurses.

“There is no one better suited to be the master educator for this department,” said Kent Vrana, Ph.D., department chair. “She has the three Ps: the preparation in education, the passion for the subject matter, and the personality to do it all.”

As a pharmacist, Karpa understands patient needs and the effects of drugs, while her pharmacology background means she also understands the science of making and discovering medicines. The two skill sets together are a powerful tool.

“We are committed to maintaining innovative higher education in an ever-changing field,” Vrana said. “This is just one tangible example of that.”

Karpa oversees the medical curriculum to ensure students are exposed to pharmacology topics at the right time and place among other subjects.

In the 1990s, Penn State’s medical curriculum changed from a purely didactic, discipline-focused approach to an integrated, organ and body system-based model. This approach reduces overlaps and gaps in the curriculum, but it also cut down on pharmacology hours. To help students learn the necessary pharmacology information, Karpa initiated review sessions focused on problem-based learning scenarios and board exam preparation that helps expand student knowledge.

“There has already been tangible improvement in students’ basic science exams from her hard work. “The pharmacology education needed to be taken to the next level, and she did just that,” Vrana said.

And it’s not only the students who benefit. “Interacting with the students keeps me young,” said Karpa. “It is so exciting to see them have that moment where it all clicks.”

This academic year, with the introduction of a new course on herbal and natural products, Karpa hopes to expand the learning opportunities into clinics. Students will have patient interaction and hands-on experience of what was taught in the class.

Karpa uses patient stories from the pharmacy to provide real-life scenarios for her students. She believes they are more likely to remember the effects and purpose of a drug by relating to an actual example rather than by memorization.

Through her work in the pharmacy and patient consultations, Karpa thrives on “helping patients expand knowledge of their illness and drugs they are taking. Education helps patients become motivated and optimistic, and it’s neat to be involved and experience it with them,” Karpa said. — By Kristen Conroy

“This was a wake-up call for me,” said Karpa. “This showed me just how powerful alternative medicine can be.”
Translational research in health care is the science of taking basic research and turning it into new diagnostics and therapies—in other words, from bench to bedside. It requires a strong collaboration among basic scientists, clinical researchers, and treating clinicians.

It’s hardly a new concept. Turning observation and discovery into practical applications has been part of the science-technology marriage since the invention of the wheel. Scientists aren’t in the business of hiding their discoveries under a rock. There have always been those who are motivated to translate what we know into what we can do.

The National Institutes of Health (NIH) sought to bring new attention and new energy to translational science when it announced plans in 2006 to create a Clinical and Translational Science Awards (CTSA) Consortium. By 2012, it’s expected that sixty institutions will be linked through this consortium. Thirty-eight have been named already. This May, Harvard, Northwestern, Stanford, the University of North Carolina, and ten others joined the consortium.

Among those spearheading Penn State’s application to become part of the consortium are Urs A. Leuenberger, M.D., associate program director of the General Clinical Research Center, and Alan Snyder, Ph.D., interim vice dean for research and graduate Studies.

“If you look historically at academic medical centers like ours and university environments in general, we do a lot of very fundamental basic science work, what we would call discovery-oriented research,” says Snyder. “As people get immersed in their scientific disciplines, the work can become disconnected from the clinical applications and the health improvements that people look to us to produce. Translational research refers to bringing those two back together.”

Fundamental science will not be abandoned, says Snyder, since it still has enormous value. “We are unlikely to change what gets the best and the brightest out of bed each morning,” he explains. “A brilliant scientist is driven by a quest for knowledge. We won’t change that.”

The new emphasis, however, is on linking the science to the clinic and health of the community.
Leuenberger sees the initiative as connecting groups with very deep knowledge in specific areas to others who are examining related problems. “It will create bigger groups of connected networks, people who create new knowledge that will actually have an impact in the community,” he predicts.

The collaborations will be among both members of the consortium and internal collaborations among investigators and laboratories throughout the university. “They bring something to your table and you bring something to theirs, and together, you create progress,” says Leuenberger. “People who haven’t spoken to each other will come together either virtually or in person, and that’s when new things come up and new ideas get created and formed.”

“We’ve become so specialized,” adds Snyder. “By creating a more connected university, a researcher will now ask, ‘I just found out something kind of interesting. Who else might want to know that?’”

A microcosm of this type of collaborative effort is already taking place in the preparation of the CTSA application. Led by Leuenberger, it is made up of people from different colleges and departments within Penn State. “Even that step has bred familiarity among people and appreciation of the ideas that different people have that they might incorporate into their own fields,” points out Snyder.

Leuenberger also sees the program as strengthening the ties between Penn State Hershey and the University Park campus. “We think it’s really important to build more bridges between the two campuses and we’re in the process of doing that,” he says. “For example, there is a tremendous amount of expertise there in the behavioral sciences and environmental science. Wouldn’t it be great if we could have more collaboration between the behavioral scientists at University Park and the physicians in Hershey?”

The highly competitive application process comes with its challenges. “We’re trying to measure connections and contributions on a big scale, not just within an individual laboratory,” says Leuenberger. “That doesn’t exist in our institution at this point. It doesn’t really exist at a national level very well, either.”

“All universities tend to be collections of individuals,” says Snyder. “Individuals are measured by their productivity. What the NIH is really fundamentally calling on us to do is to look at ourselves as an organization, look at ourselves from the point of view of the public, saying, what are you delivering as an enterprise? What is your end product?”

“It’s important for people to know it’s a university-wide effort,” he adds, “because the talents are so vast at Penn State. It’s remarkable the number of fields and talents and abilities that are applicable.”

The potential is valuable to patients as Snyder explains one common scenario. “An immediate problem we might deal with is a patient’s blood pressure creeping up. There might be interventions. There might be prescriptions to be written,” he says. “Ultimately, the goal is for this person to go happily about his life, see his doctor less often, and his grandkids more often. Let’s say part of this patient’s management is frequent blood tests. But that means driving to the clinic, getting blood drawn, the cost, the inconvenience, the discomfort.

“To some degree, your saliva reflects what’s in your blood,” Snyder says. “What if you could suck on a stick, look at the color change, and know how many pills to take? That’s a difficult and challenging problem, but we have talented chemists and bio-chemists. We have talented material scientists. We have all these talents. So if we could make that need known to people who do that sort of thing, we could make a connection, we could really deliver something that’s important.”

Penn State expects to learn if it will be included in the consortium in spring 2009. ■
Penn State Hershey Cancer Institute named Blue Distinction Center for Complex and Rare Cancers

Highmark Blue Shield has named Penn State Hershey Cancer Institute—at both Penn State Milton S. Hershey Medical Center and Lehigh Valley Hospital—as a Blue Distinction Center for Complex and Rare Cancers℠.

Complex and rare cancers comprise approximately 15 percent of new cancer cases each year, making it difficult for patients to research or locate facilities with oncologists or surgical teams that are experienced in treating these specific malignancies.

Blue Distinction Centers for Complex and Rare Cancers are facilities within participating Blue Cross and Blue Shield network service areas that offer comprehensive inpatient cancer care programs for adults, delivered by multidisciplinary teams with subspecialty training and distinguished clinical expertise in treating the following complex and rare subtypes of cancer:

- acute leukemia (inpatient/nonsurgical)
- bladder cancer
- bone cancer
- brain cancer—primary
- esophageal cancer
- gastric cancer
- head and neck cancers
- liver cancer
- ocular melanoma
- pancreatic cancer
- rectal cancer
- soft tissue sarcomas
- thyroid cancer—medullary or anaplastic

The Blue Distinction Centers for Complex and Rare Cancers designation is focused primarily on multidisciplinary treatment planning and complex, major surgical treatments.

Among other selection criteria, the Cancer Institute met the following thresholds necessary to be named as a Blue Distinction Center for Complex and Rare Cancers:

- has multidisciplinary team input, including subspecialty trained teams for complex and rare cancers and demonstrated depth of expertise across cancer disciplines in medicine, surgery, radiation oncology, pathology, and radiology
- demonstrates ongoing quality management and improvement programs for cancer care
- demonstrates an ongoing commitment to using clinical data registries and providing access to appropriate clinical research for complex and rare cancers
- demonstrates sufficient volume of experience in treating rare and complex cancers

Blue Distinction Centers for Complex and Rare Cancers were developed in strategic collaboration with the National Comprehensive Cancer Network and input from a panel of leading clinicians and professional organizations.

Blue Distinction℠ is a designation awarded by Blue Cross and Blue Shield companies to medical facilities that have demonstrated expertise in delivering quality health care. The designation is based on rigorous, evidence-based selection criteria established in collaboration with leading clinicians, medical societies, and professional organizations.
Penn State Care Fairs reach underserved populations

The Penn State General Clinical Research Center held its sixth annual health fair in May. The free Penn State Care Fairs—held at the Broad Street Market in Harrisburg and Iglesia el Faro church in Lebanon—provide a Penn State Hershey presence in communities with underserved health needs. The fairs also personalize the institution’s departments and the research studies frequently advertised to the public.

In only six hours, volunteer staff from the Medical Center made a difference in the health of many people, including:

• diagnosing four cases of asthma and two cases of undiagnosed restrictive airway disease;
• counseling nine people regarding elevated blood pressure;
• counseling nine people regarding nutrition and diet;
• giving away twenty-one Diabetes Playbooks;
• providing nine families with identification materials for CHIP;
• counseling thirty-six people for cancer concerns;
• screening twenty-seven people for skin cancer risk with four individuals receiving counseling due to increased risk, detected via Dermascan; and
• screening twelve people for research study participation.

At the Care Fair in Harrisburg, Paige Miller, a graduate student in nutrition at University Park, spoke to a woman about adding sources of calcium to her diet. The woman was spotted afterward in the market buying high-calcium vegetables for her family, providing immediate feedback for event staff that their efforts make a difference in the community, according to Chanty Webb, R.N., B.S.N., minority recruiter at Penn State General Clinical Research Center at Penn State Milton S. Hershey Medical Center, and health fair organizer. “The priority has changed from how many participants we can recruit from this event to how we can establish a good name for ourselves and prove we can be trusted in the minority community,” Webb said. “Only by giving personal attention to every person we come into contact with can we build a record of trust. Then we receive the best PR there is—word of mouth.”

In their first partnership with the Susan G. Komen for the Cure Foundation, Penn State College of Medicine researchers will spend the next five years investigating a new approach to preventing breast cancer. The $7.5 million grant will support both basic studies in rodents and a clinical trial in women that combines low doses of antiestrogens with omega-3 fatty acids supplementation.

The study also creates a partnership between researchers at Penn State, Fox Chase Cancer Center in Philadelphia, and Colorado State University who will conduct the basic science studies. The clinical portion, which will be performed solely at Penn State Hershey Medical Center, will include 372 women who receive treatment for two years with a two year follow-up.

“The goal is to develop improved, safe methods to prevent breast cancer,” says Andrea Manni, M.D., lead investigator on the project and chief of the Division of Endocrinology, Diabetes, and Metabolism, at the Medical Center. “We also hope to improve the ability to prevent breast cancer by preventing hormone independent tumors.” Unlike hormone-dependent tumors, hormone-independent tumors are more aggressive and cannot currently be prevented.

The Susan G. Komen for the Cure Foundation is dedicated to research, education, and outreach about breast cancer. It is the largest breast cancer charity in the country and has raised more than $1 billion since it was founded in 1982.
Joining an elite group, surgeons at Penn State Hershey Medical Center performed central Pennsylvania’s first adult living-donor liver transplant. The Medical Center is one of three hospitals in the state that offer this procedure and is the only one in central Pennsylvania.

Jestine Reider donated the right side of her liver to her brother, John Kreider, both of Elizabethtown, on July 29. Kreider had been on the liver transplant waiting list for fourteen months.

“John Kreider was suffering from complications of his liver disease known as primary sclerosing cholangitis,” said Zakiyah Kadry, M.D., chief of the Division of Transplant Surgery and surgical director of liver transplantation and the Live-donor Liver Transplant Program at the Medical Center. “His blood group is O where the waiting time is very long as compared to other blood group patients on the waiting list. He was becoming progressively more jaundiced in spite of the biliary stents being placed by our gastroenterologists, and the risk with his liver disease was either the development of biliary cancer or a severe—possibly fatal—infection of his liver known as acute cholangitis.”

“I never questioned my decision about becoming a living donor to John,” said Jestine Reider. “To even be compatible was just amazing and to be able to save my brother’s life—what more could I do?”

In a living donor liver transplant, a portion of the liver is obtained from a healthy donor—in most cases a spouse, family member, or close friend—and transplanted into the recipient. The donor operation usually lasts approximately six hours while the operation for the liver recipient can last between eight and twelve hours. The liver is the only organ in the body that can regenerate to normal function and size within approximately one to two months.

In the United States, the demand for donor organs continues to exceed that of supply. Currently, there are more than 16,000 patients registered on the United Network for Organ Sharing (UNOS) waiting list for a liver organ and only 6,000 to 6,500 liver transplants are being performed annually. In Pennsylvania, nearly 1,300 candidates are on the liver transplant waiting list. According to the UNOS database, between 1,500 and 2,000 candidates on the liver transplant waiting list die each year while waiting for a liver organ. While living liver donor numbers are limited as donor safety is the primary concern, the procedure provides at least 200 to 300 additional liver transplants annually.

Penn State Hershey Medical Center is UNOS certified for live-donor liver transplantation. Kadry has extensive experience as both a liver transplant and hepatobiliary surgeon and has performed and published on the topic of live donor liver transplantation. She leads an interdisciplinary team of transplant surgeons, anesthesiologists, hepatologists, pre- and post-transplant coordinators, nurses, social workers, transplant pharmacists, and nutritionists who all are actively involved in transplant patients’ care. ■
Penn State Hershey Shock Trauma Center was newly accredited as a Level I Pediatric Trauma Center and received renewal of its accreditation as a Level I Adult Trauma Center by the Pennsylvania Trauma Systems Foundation (PTSF). Located at Penn State Hershey Medical Center and Penn State Hershey Children’s Hospital, Penn State Hershey Shock Trauma Center is the only medical facility in Pennsylvania to be accredited as both an adult and a pediatric Level I trauma center.

“Nearly 2,700 adults and children are evaluated by Penn State Hershey Shock Trauma Center staff each year,” said Robert Cherry, M.D., medical director, Penn State Hershey Shock Trauma Center. “Our team of specially-trained physicians and nurses rapidly treat severe and life-threatening injuries caused by motor vehicle accidents, falls, and other types of traumatic injury to reduce the risk of long-term disability and death.”

Trauma centers in Pennsylvania participate in a statewide system of trauma care. The PTSF oversees the accreditation of these centers. Level I trauma centers, like Penn State Hershey Medical Center, maintain twenty-four-hours-a-day, seven-days-per-week readiness to care for all types of injured patients.

“Maintaining this high level of care to both adult and pediatric trauma patients is truly a team effort,” noted Cherry.

Many teams of specialists contribute to the multidisciplinary care provided by Level I trauma centers, including trauma surgeons, physicians, nurses, radiologists, social workers, rehabilitation specialists, and other skilled healthcare professionals. Besides having around-the-clock services of a dedicated trauma team, Level I trauma centers must also have an operating room, a blood bank, and various other hospital services to support critical emergencies. Specialty continuing medical education is also required of Level I trauma staff.

At pediatric Level I trauma centers, children are cared for by pediatric surgeons who are specifically trained in the care of injured infants, children, and adolescents. Additional pediatric resources include pediatric neurosurgeons, pediatric orthopaedic surgeons, pediatric emergency medicine physicians, pediatric critical care medicine physicians, and pediatric anesthesiologists.

The pediatric trauma center at Penn State Hershey Children’s Hospital has been accredited by the PTSF since 1992, and has grown continually since that time. The team cares for nearly 700 injured children each year. The new accreditation as a Level I pediatric trauma center recognizes the resources available to care for the youngest and sickest injured children.

“The specialized pediatric resources, including the region’s only pediatric intensive care unit, allow our team to provide expert care for injured children and their families that is unmatched in southcentral Pennsylvania,” said Robert Cilley, M.D., pediatric trauma program medical director. “Our highly skilled team of health care professionals—from pre-hospital first responders to trauma center staff—is frequently mobilized at a moment’s notice to provide for the unique needs of the pediatric trauma population and to ensure the highest quality of care and treatment of acute and life-threatening injuries. This designation recognizes the institutional commitment for the care of injured children.”

Injury prevention is a companion to trauma care at Children’s Hospital. Staff is committed to actively educating children, teens, and their parents about safety and injury prevention by serving as the lead agency for the Dauphin County SAFE KIDS Coalition, and as a resource for many community based injury prevention programs. The mission of the Dauphin County SAFE KIDS Coalition is to promote the prevention of childhood injuries through education, networking, and advocacy. The program is sponsored by Children’s Miracle Network, General Motors, and SAFE KIDS Worldwide.

The Medical Center was one of the first nine hospitals in Pennsylvania designated as a trauma center in 1986, and received additional qualifications as a pediatric trauma center in 1992 prior to earning Level I pediatric trauma center accreditation when reviewed this year.
Penn State College of Medicine held its thirty-eighth annual commencement ceremony on Sunday, May 18, where 125 medical and forty graduate students received M.D., M.S., M.H.S., or Ph.D. degrees, including the first three graduates of the College’s master’s of homeland security program. To date, the College has granted 4,483 degrees, including 3,623 medical degrees and 860 graduate degrees.

David L. Nahrwold, M.D., a former College of Medicine professor of surgery and administrator, gave the keynote address. He reminded new graduates of the challenges of their medical and research professions, including the high cost of health care, the erosion of the doctor/patient relationship, and the for-profit mentality of many in science and medicine today.

“Whenever the going gets tough, go back to the roots of your professionalism,” he said. “You will do the right thing and you will be respected by your peers, by your students, and by your patients. And, you will help heal your profession.”

Monica Bhagat and Kevin O’Regan spoke on behalf of the medical student and graduate student classes, respectively.

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Graduate Student Placement 2008

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<td>Department of Medicine, Harrisburg Hospital, Pinnacle Health System</td>
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<td>Nathaniel R. Geyer</td>
<td>MAJOR:</td>
<td>Health Evaluation Sciences</td>
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<td>MAJOR’S PROJECT:</td>
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<td>Correlates of Obesity in the Central Pennsylvania Women’s Health Survey (CePAWHS)</td>
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<td>Jennifer Dawn Osetek</td>
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<td>MAJOR’S PROJECT:</td>
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<td>Meprin Metalloproteases Modulate Intestinal Host Response</td>
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<td>Shawn Michael Rosensteel</td>
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<td>Laboratory Animal Medicine</td>
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<td>THESIS:</td>
<td>Characterization of the Early Interactions on the Folding Pathway of the Ileal Lipid-Binding Protein by 19F-NMR</td>
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<td>Matthew C. Blome</td>
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<td>Biochemistry and Molecular Biology</td>
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<td>The Effects of Double-Stranded Oligodeoxynucleotide on Collagen Production in a Wound-Healing Model</td>
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<td>Bioengineering</td>
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<td>Detection of Microemboli in Blood: Signal Analysis and Detector Performance</td>
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<td>Sanjita Banerjee</td>
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College of Medicine graduates its thirty-eighth class
Shubho Chakrabarti
MAJOR: Neuroscience
THESIS: Parallel Processing Streams in the Rodent Barrel Cortex and Their Role in Sensorimotor Integration
POSTDOCTORATE: Laboratory of Cognitive Neuroscience, Deutsches Primaten Zentrum, Max-Planck Society, Gottingen, Germany

Mikyoung Chang
MAJOR: Genetics
THESIS: Signaling Functions of the NFkB1 Gene Products in Macrophages and T Cells
POSTDOCTORATE: MD Anderson Cancer Center, University of Texas

Kaushik Chatterjee
MAJOR: Bioengineering
THESIS: Surface-Mediated Molecular Events in Material-Induced Blood-Plasma Coagulation
POSTDOCTORATE: National Research Council (Joint NIH-NIST)

Hong- Shen Chen
MAJOR: Integrative Bioscience/Option in Molecular Medicine
THESIS: Genetic Analysis of Papillomavirus Virion Morphogenesis
POSTDOCTORATE: Harvard Medical Center

Sans W. Emmert
MAJOR: Molecular Medicine
THESIS: Roles of Nuclear Factor-Erythroid 2-Related Factor 2 in Glutamate Cysteine Ligase Induction by Organoselenium Compounds

Kristy Lee Houck
MAJOR: Pharmacology
THESIS: Sphingolipid and Phospholipid Metabolites Regulate the Phenotype of Vascular Smooth Muscle Cells

Wei Jin
MAJOR: Genetics
THESIS: Signaling Functions of the Deubiquitinating Enzyme CYLD in Lymphocyte Activation and Osteoclastogenesis
POSTDOCTORATE: MD Anderson Cancer Center, University of Texas

Nicole R. Keasey
MAJOR: Biochemistry and Molecular Biology
THESIS: Amino Acid Permease Involvement in the Volatile Anesthetic Response of Saccharomyces Cerevisiae
POSTDOCTORATE: Researcher, Department of Hematology/Oncology, Penn State Hershey Cancer Institute

Wesley M. Konsavage
MAJOR: Microbiology and Immunology
THESIS: Identification of Residues within the 35-Amino-Acid Spacing Region of Rous Sarcoma Virus Integrase that are Important for Interactions with its Viral and Nonviral DNA Substrates
POSTDOCTORATE: Department of Pediatrics, Penn State Hershey Children’s Hospital

Kevin Joseph O’Regan
MAJOR: Microbiology and Immunology
THESIS: Insights into Herpes Simplex Virus 1 Assembly: Protein Interactions and Virion Incorporation Determinants of the Tegument Protein VP22
POSTDOCTORATE: Fox Chase Cancer Center, Philadelphia

Kimberly Anna Petro
MAJOR: Biochemistry and Molecular Biology
THESIS: Roles of Lipid Rafts in Botulinum Neurotoxin Serotype A Activity and Differentiation of Neuroblastoma Cells
POSTDOCTORATE: Department of Biochemistry and Molecular Biology, Penn State College of Medicine

Ryan Christopher Riddle
MAJOR: Cell and Molecular Biology
THESIS: Biophysical Regulation of Mesenchymal Stem Cell Proliferation
POSTDOCTORATE: Department of Pathology, University of Alabama at Birmingham

Anne M. Rowzee
MAJOR: Cell and Molecular Biology
THESIS: Expression and Function of Insulin-like Growth Factor Signaling Receptors in Mammary Epithelial Cell Growth
POSTDOCTORATE: Cancer Center, University of Medicine and Dentistry of New Jersey; National Institutes of Health, NIDCR

Robert C. Twining
MAJOR: Neuroscience
THESIS: The Development of a Novel Rodent Model of Drug-Induced Devaluation of Natural Rewards and Its Relevance to Features of Drug Addiction
POSTDOCTORATE: University of Wisconsin, Madison

Willam Tyler
MAJOR: Cell and Molecular Biology
THESIS: Activation of the Mammalian Target of Rapamycin (mTOR) is Essential for Oligodendrocyte Differentiation

Onur Unal
MAJOR: Pharmacology
THESIS: Role of Altered Caveolin-1 Expression in Models of Cancer and Diabetes
EMPLOYMENT: Director of Marketing, Life Sensors, Inc., Malvern, PA

Heather Dawn VanGuilder
MAJOR: Neuroscience
THESIS: Depletion of Retinal Synaptic Proteins in Experimental Diabetes: Implications for Vision Loss in Diabetic Retinopathy
POSTDOCTORATE: Department of Pharmacology, Penn State College of Medicine

Diana L. Velott
MAJOR: Health Evaluation Sciences
CAPSTONE EXPERIENCE: Fruit and Vegetable Consumption among Women with Reproductive Capacity in the Central Pennsylvania Women’s Health Study (CePAWHS)

Jennifer Linn Wentzel
MAJOR: Anatomy
THESIS: A Study of Topical Imiquimod Treatment and Opioid Growth Factor Receptor in Nude Mice

Xuefeng Wu
MAJOR: Integrative Biosciences/Option in Immunobiology
THESIS: Physiological and Pathological Activation of IKK and IKK-related Kinases
POSTDOCTORATE: MD Anderson Cancer Center, University of Texas

Yan Yan
MAJOR: Genetics
THESIS: The Function of Sphingolipid Acyltransferase (ALCAT1) in Controlling Mice Energy Homeostasis
CONTINUING ACADEMICS: Ph.D. program in Cell and Developmental Biology, Penn State University

Doctor of Medicine/ Doctor of Philosophy
Mark Joseph Koonthanam Chandy
MAJOR: Biochemistry and Molecular Biology
TITLE: Histone Modifications Influence Chromatin Modifying and Chromatin Remodeling Complexes
MEDICAL RESIDENCY: Medicine/Oncology, University of British Columbia, Canada

An Ngoc Dang Do
MAJOR: Integrative Biosciences/Option in Molecular Medicine
TITLE: The elf-2alpha-kinases GCN2 and PERK Regulate Phosphorylation of TOR Target Proteins and Differential Translation of mRNAs
MEDICAL RESIDENCY: Medicine/Pediatrics, Indiana University School of Medicine

Jeffrey M. Sundstrom
MAJOR: Cell and Molecular Biology
TITLE: Identification and Functional Analysis of Oclucin Phosphorylation
MEDICAL RESIDENCY: Medicine/Ophthalmology, Penn State College of Medicine
Penn State College of Medicine initiated its first-year medical students pursuing M.D. or M.D./Ph.D. degrees with the annual White Coat Ceremony in August. The event was held in the Hershey Theatre where incoming students received their first white medical coat, a symbol of their entrance into the medical profession as student physicians, in the presence of family, friends, and peers.

A White Coat Ceremony or similar rite of passage takes place at more than 90 percent of schools of medicine and osteopathy in the United States.

Following the distribution of white coats, 145 members of the entering class joined together to recite the Hippocratic oath—the universally recognized creed for physicians. “Each year, this ceremony sets the groundwork for the highest standards of medical care and compassion for patients,” said Richard J. Simons, M.D., vice dean for educational affairs. “These are ideals that students will carry with them for the next four years and beyond as doctors.”

Generally, one in six prospective medical students apply to the College of Medicine. The incoming class is evenly divided among gender and includes students from thirty states and fifteen countries with thirty-eight students from the local region.

The College of Medicine initiated its annual White Coat Ceremony in 1996 with funding support from the Arnold P. Gold Foundation, a public foundation fostering humanism in medicine. Each year, the foundation donates lapel pins for the honorary white coats that are emblazoned with a stethoscope in the shape of a heart, surrounded by the words “Humanism in Medicine.”

“These are ideals that students will carry with them for the next four years and beyond as doctors.”
Vance Albaugh, an M.D./Ph.D. student in physiology, received a grant award through the American Medical Association’s 2008 Seed Grant Research Program last spring. This program was established to encourage more medical students, residents, and fellows to enter the field of research. The AMA Foundation selected forty-seven recipients from a national applicant pool to receive a $2,500 grant for conducting basic science and applied or clinical research.

“Given that most of the awardees are either residents or subspecialty fellows, I’m very excited about being one of the few students to receive a seed grant award,” Albaugh said. “Having this opportunity has added a lot to my medical and graduate education.”

Albaugh has been working with Christopher Lynch, Ph.D., professor of cellular and molecular physiology, researching the drug olanzapine, an antipsychotic that has demonstrated induced obesity and diabetes in patients. The Center for Translational Research helped Albaugh design a study to address these concerns.

“The study focuses on understanding the unexpected side effects of drugs. In some cases, atypical antipsychotics like olanzapine may cause weight gain, diabetes, or both as unwanted side effects. Albaugh and Lynch want to understand the timing of the short-term drug effects compared with the occurrence of the negative side effects. Their hope is to determine the mechanism that causes the negative metabolic effects.

During his research in rats, Albaugh found metabolic and hormonal changes that could trigger obesity and diabetes. The changes were different in male and female mice, though each had changes that could lead to obesity and diabetes. Albaugh was then faced with questions: Which mechanism is relevant to humans and do humans show this difference by gender?

Once Albaugh and Lynch determine how the drug causes obesity and whether male or female mice provide the best model, they can quickly determine the exact molecular mechanism. Albaugh then hopes to reverse the drug’s effect into a weight loss. The long-term goal is to be able to screen people using a rapid blood or glucose tolerance test to provide better care by minimizing adverse drug effects.

“We started talking about doing a study like this about two years ago,” Albaugh said. “Dr. Lynch has always been enthusiastic about my work in the laboratory and was instrumental in showing me how to take an idea from ‘bench side to bedside.’”

“Vance has been a joy to work with,” Lynch said. “This is a fortuitous opportunity for him to get two kinds of training related to the same overall project. Having both basic science and clinical research experience will make him a terrific asset.”

— By Kristen Conroy
Neurons are, by design, collaborative cells. Nature equipped most of them with dendrites—for receiving information from other neurons—and an axon—for sending information to other neurons or other cells, like muscle or gland cells.

A neuron without these components would be very lonely indeed, and any potential for action it might hold would be of little use to the body.

Most neurons have only one axon, a tight bundle of fibers that transfers messages to other neurons' dendrites. Dendrites allow a neuron to receive many signals from multiple other neurons at the same time. Some signals are inhibitory, some are excitatory. A lot of processing goes on before the right signal is sent along.
Collaboration and connections spark neuroscience research

Neurodegenerative disease research today focuses on the complex cellular and molecular processes preceding neuron death or dysfunction and looks for ways to use this knowledge to better diagnose and treat—and eventually to prevent—the resulting myriad health problems. The task seems impossible. There are about 100 billion neurons in a healthy human body and each one interacts with somewhere between 1,000 and 10,000 others. Every neurological disease or disorder results from a unique series of events among these cells.

Yet there are similarities in the pathways to neuron dysfunction. These similarities are easy to miss if you’re not looking for them.

Neuroscience researchers at Penn State Milton S. Hershey Medical Center and Penn State College of Medicine have broken out of the traditional “silo” approach many academic medical institutions still use. In silos, basic science researchers interested in why motor neurons die, for instance, work with tissue cultures or animals in the lab, while clinical researchers enroll people with different motor disorders in research studies.

Discussions about common findings and difficulties or potential collaborations are not a regular part of the process. The connections are missing.

Here, researchers have followed the example of the neurons they study, and the connections are strong. One example is the work of Zachary Simmons, M.D., Kevin Scott, M.D., and James Connor, Ph.D.

Simmons and Scott see patients at the Penn State Hershey ALS Clinic, the state’s second largest program. Connor’s laboratory team studies, among other things, the role iron deficiency may play in neurodegenerative diseases, including ALS. The three meet regularly to discuss what’s happening with the patients and in the lab and to tweak the projects they share. The largest is an ALS-biomarker study funded by a private foundation, the Judith and Jean Pape Adams Charitable Foundation.

Because the prognosis for ALS is grim—the only approved treatment extends life by two to three months—patients often want to participate in clinical research opportunities. Samples of cerebrospinal fluid and blood given by ALS patients at different disease stages can be used in the lab to find biomarkers, which are substances that appear in the body in different amounts at different stages of health and disease. Identifying biomarkers that correlate to a specific stage of disease allows researchers and clinicians to more precisely diagnose and treat the disease.

“We hope to eventually take what we’ve learned back to the clinic and use it to try to improve our ability to diagnose and treat this disease,” Connor said. “It’s a symbiotic relationship.”

The ALS team has taken this symbiosis a step further, all the way to China. In 2009, an ALS clinic modeled after the Hershey clinic will open in Tianjin, China, a city with roughly the same population as Pennsylvania. Connor and Simmons, along with Qing Yang, Ph.D., of radiology, spent two weeks there this past spring leading a symposium with neurologists and helping administrative leaders plan China’s first ALS clinic.

ALS patients in China are typically diagnosed and sent home to receive palliative care from their families. The clinic will improve quality of life for these people. It also will allow them to enroll in clinical research, including the biomarker study, which translates to more samples and a greater potential for making discoveries in the lab that can go back to the clinic and help patients, both here in Hershey and around the world.

New Treatment Possibilities

Connor’s basic science research on iron and its role in the brain also has led to important findings and collaborations related to restless legs syndrome, Alzheimer’s disease, and Parkinson’s disease, which is another magnet for neuroscience collaboration at Hershey.

People with Parkinson’s have dramatically reduced levels of dopamine in their brains. Dopamine is a hormone that is produced in the brain and has many important functions, including a role in body movement. But dopamine replacement isn’t a viable treatment, since dopamine can’t cross the blood-brain barrier, a neuroprotective layer between the blood and neural tissue. L-dopa, which is converted to dopamine in the brain, can cross the barrier but comes with many adverse effects.

Partnering with clinicians to recruit patients for research studies on promising new treatments was the logical next phase in the growth of the Parkinson’s research program.

From the research lab of Thyagarajan Subramanian, M.D., came the discovery that the pigment cells of the retina make L-dopa. Retinal pigment cells can cross the blood-brain barrier. Subramanian and collaborators pioneered the experimental technique of transplanting these cells in animals, which showed promise in increasing levels of dopamine in the brain. A pilot clinical study in Parkinson’s patients showed promising results, as well, and a large, national clinical study recently was completed.

Retinal pigment cells also produce immunosuppressants in the brain. With basic science collaborators in microbiology, neural
and behavioral sciences, and pharmacology, Subramanian is studying whether retinal pigment cells could reduce or eliminate the need for immunotherapy following cell transplantation in the brain for Parkinson’s disease and other degenerative disorders.

Subramanian’s team has strong ties to other disciplines, including psychiatry and radiology at the Medical Center and electrical engineering and neural engineering at University Park. These NIH-funded collaborations include the use of electrophysiological and specialized MRI techniques to compare the electrical patterns of neurons and alterations in nerve fibers in the brains of healthy people, people with Parkinson’s, and people with Parkinson’s who have had cell transplantation treatment.

**Homegrown Results**

Subramanian and a new colleague, Xuemei Huang, M.D., also direct a number of clinical research studies on promising new treatments and diagnostic tests for Parkinson’s and related movement disorders. This provides an easy transition for laboratory developments to progress to clinical testing and creates the next logical phase in the growth of the research program for Parkinson’s disease, Subramanian said.

“Our research program represents the true spirit of translational research from the bench to bedside and back, and we have expertise in every aspect of experimental therapeutics related to Parkinson’s disease” he said. “This platform gives us the opportunity to be a lead player in coming out with new treatments for Parkinson’s disease in the near future.”

The neurosciences at Penn State Hershey are fast becoming a national model for translating cutting-edge research into better patient outcomes with regard to neurodegenerative disorders. Likewise, institute investigators are tapping into the expertise of nutrition experts at University Park and surgeons at the Medical Center to tackle questions about obesity and food preference. Promising technologies designed for one application—Connor’s work with nanovesicles for targeting drugs to brain tumors and Joyce Tombran-Tink’s patented method for protecting neurons and reducing bleeding in the eye and brain—are also providing new avenues of study for researchers in other areas and new reason for hope among patients.

Neuroscience researchers here know they are less likely to find the answers they seek while focusing on a single question about a specific disease. Clinicians have seen the benefits to their patients when research opportunities are homegrown and the latest advances are down the hall instead of half a world away.

Just as it does with neurons, success boils down to collaboration; to making connections, to sending and receiving information to create the desired effect. – By Megan Walde Manlove

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**Tombran-Tink pursues dream work**

If you met Joyce Tombran-Tink, Ph.D., on the street, “scientist” probably wouldn’t be the first thing that came to mind. She is all the stereotypical image is not: fashionable, attractive, and showing no affinity for her white lab coat when outside the lab.

But visit her office and, instead of a name plate, you’ll find a gold bookmark noting her first patent award (Nov. 20, 2001, U.S. patent No. 6,319,687 B1), And for her, science is a 24-7 job: She even claims that would earn her the first patent but that was after she made the discovery that would earn her the first patent but before patents numbers two, three, and four were issued.

The native of Guyana, South America, and a long-time resident of Canada was a research technician with dreams of medical school when she discovered pigment epithelial derived factor (PEDF)—a protein that can protect nerve cells from dying and prevent blood vessel leakage in the eye and brain where it is secreted. The work propelled her into graduate school at the University of Southern California instead, a move she has never regretted.

In twenty years, she has continued working with PEDF, identifying the “active zone” peptides and confirming its presence in every type of nerve cell in the body. The former means researchers can more quickly derive pure samples of the protein portion responsible for protecting nerve cells than would be possible if growing the entire protein in a bacterium were required. The latter means work on the protein stands to benefit people with any kind of neurodegenerative disease or injury. It’s already in clinical studies for macular degeneration.

Researchers at Penn State and around the world are looking at the role of PEDF in various diseases, including Parkinson’s, ALS, glaucoma, and diabetic retinopathy.

Most recently, Tombran-Tink has been perfecting how to deliver her PEDF peptides via nanoparticles to give them more time to protect or repair damaged nerve cells insitu.

“It’s been exciting, taking this thing that’s made naturally in the body from the very beginning, pursuing it and taking it where we have it now, then being able to give it back to patients in a different form that can really help them,” she says.
The Foreman Foundation, founded in honor of the late John Bruno Jr., punter for Penn State’s 1986 National Championship football team, has been supporting melanoma research at Penn State Hershey Medical Center since 1996. Through a series of fundraising events, the foundation has contributed close to $1 million to fund melanoma research while increasing awareness of the causes and symptoms of this disease. In 2000, the foundation established the Foreman Foundation Melanoma Research Laboratory.

Bruno was diagnosed and treated for melanoma in 1985. At the time, there was no indication that the cancer had spread. But after a period of exhaustion and flu-like symptoms, his doctors discovered that the cancer had spread to many of his internal organs. Bruno died a few months later in 1992.

The Foreman Foundation hosted their 2008 golf outing and banquet at the Scotch Valley Country Club in Hollidaysburg, Pa., which included a raffle for a new 2008 C-300 Mercedes Benz sport sedan. Other events hosted by the foundation include wine tasting, galas, and auctions.

“Today, after thirteen years, I’m proud to say that The Foreman Foundation has donated nearly one million dollars to The Foreman Foundation Melanoma Research Laboratory in memory of John Bruno Jr.,” says Phillip Foreman, chairman of The Foreman Foundation. “Also, the laboratory has grown to seven researchers under the leadership of Dr. Gavin Robertson and has made great strides in finding a cure for melanoma. I’m very proud to be part of something so important.”

Faculty and staff campaign passes half-million mark

With participation from more than 1,700 staff members, the Faculty and Staff Campaign at Penn State Milton S. Hershey Medical Center raised $506,773. Focused on the slogan “What is given in Hershey, stays in Hershey,” participants were encouraged to designate their gift to any area of the Medical Center they wanted. Whether it was to support their department funds, scholarships, Children’s Miracle Network, or The Four Diamonds Fund, employees were asked to contribute to the area of their choice.

“How could we, as members of the Penn State Hershey family, ask others to donate to this vital academic medical center and research university without first showing our own commitment?” asks Kathleen Dunne Eggli, M.D., chair of the campaign and Kenneth L. Miller Chair of Radiology. “I asked only that our employees give back to Hershey in the ways they best felt would benefit our patients and our mission—whether it was to the Children’s Hospital building fund, to the Cancer Institute, or to a specific clinical or research program in need.”

“I have been so impressed by the enthusiasm shown by so many of our groups,” Eggli says. “The first group to reach full 100 percent participation was our Patient Transport employees and the first entire clinical department was Dermatology, including all the attending physicians, residents, nurses, and secretaries.”

“I am proud that we raised more than $506,000 for Penn State Hershey, but I am even prouder that so many of our employees re-dedicated themselves to our core missions in this way.”

More than forty-five units reached the 75 percent participation mark, including Ophthalmology UPC1 and residents, the Human Subjects Protection Office, the Penn State Cancer Institute I/P Unit, and the Surgical UCI and Surgical Specialties UPC2.
Sometimes a research breakthrough doesn’t come in the form of a new drug, but in finding a new use for an old one.

Gastroenterologist Jill P. Smith, M.D., leads the Penn State Hershey team studying the effects of naltrexone for Crohn’s disease, a chronic inflammatory disorder of the intestine that affects an estimated 500,000 Americans. Naltrexone is approved by the Food and Drug Administration to treat symptoms of alcohol and drug withdrawal but in a 2004 pilot study Smith conducted at Penn State Milton S. Hershey Medical Center, naltrexone’s ability to bring relief to some Crohn’s patients showed promise.

In the study, patients with diagnosed Crohn’s disease were treated with a low dose of naltrexone and monitored for improvement of symptoms. Quality of life surveys were given every four weeks for sixteen weeks. The results showed 89 percent of participants saw an improvement with therapy, while 67 percent achieved remission of symptoms.

The only side effect to treatment was sleep disturbance in some patients.

The results were good enough to earn Smith’s team a $500,000 grant from the National Institutes of Health to further study naltrexone for Crohn’s. Phase II studies for adults and children with Crohn’s are underway at the Medical Center.

Typical treatment for Crohn’s involves using steroids or corticosteroids, which suppress the immune system and can have other toxic side effects. Treatment is often time-intensive and expensive.

Claudia Raymer joined the adult phase II study November 2007. Diagnosed with Crohn’s in 1994, the disease put her in the hospital over Memorial Day weekend 2007 while treatment with immunosuppressants left her weak and unable to work or care for her young son, Alexander. Chatting with other Crohn’s patients online, she found information about Smith’s study and decided the five-hour drive from her home in Moundsville, West Virginia, might be worth it.

She was right. Since starting the treatment, her Crohn’s-induced arthritis and iritis (arthritis of the eye) are gone. She’s no longer losing weight or in desperate need of regular naps. She’s working part time and taking graduate courses while enjoying life again with Alexander.

“Last week, I walked in a 1.3-mile rally in Washington, D.C., and I was very tired, but I did it,” Raymer said. “A year ago, I never would have been able to do that.”

“This is a novel approach to treating a common disease, and it’s simple, it’s safe, and it costs far less than current standards of treatment,” Smith said. “We don’t yet know the exact mechanisms involved in how it works, but we’re working on that, as well.”

In a related study, Smith and Ian S. Zagon, Ph.D., professor of neuroscience and anatomy, are studying the chemical and molecular mechanisms involved in suppression of inflammatory responses in the intestine when animals are treated with naltrexone. — By Megan Walde Manlove

89 percent of participants saw an improvement with therapy.
You may no longer have to worry about your child feeling the pain of immunizations. A study led by Penn State Hershey Children’s Hospital found that giving infants oral sucrose (sugar water) just before injections helped reduce their pain. This is good news considering how many shots children need. According to the recommended immunization schedule, children need up to twenty-four injections by age 2. In one office visit, a child may receive up to five injections.

Recent data suggest that being exposed to repeated or severe pain in early life can affect the development of a child’s central nervous system. It also may have a long-lasting effect on neurologic function and behavior.

**What the Study Showed**

The Children’s Hospital study looked at 100 infants ages 2 to 4 months who were having routine immunizations. They received either sugar water or a placebo. The infants were then monitored for symptoms of pain by looking at the amount of crying and their facial expression. Their pain response was measured between three different injections.

The babies who received sugar water had lower pain scores than those in the control group and their pain intensity was lower than babies who received the placebo. Babies who got the sugar water also recovered from pain more quickly than those in the control group. During the course of nine minutes, the pain scores for the sugar water group were about 78 percent lower than those of the control group. The researchers found that using sugar water is a quick, easy, low-cost way to reduce pain for infants having minor procedures.

**Children Need Immunizations**

Not having your child immunized to keep him or her from feeling pain can be dangerous—children need shots to prevent diseases.

“If parents don’t want to have their children immunized for fear of the pain that shots may cause, there are implications for the resurgence of vaccine-preventable diseases, and that’s a challenge for us as clinicians,” says Linda Hatfield, Ph.D., C.N.N.P., lead author of the study. “Our results provide practitioners with evidence of one method for meeting this challenge.”

It’s easy for medical staff to give sugar water to infants since they don’t need additional training and the treatment is safe for children. But because sugar water didn’t completely eliminate pain during immunizations, Hatfield and her team suggest trying other techniques, too. These include giving the child acetaminophen or distracting, holding, or feeding him or her, in addition to using the sugar water. — By Megan Walde Manlove

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**Painless shots for babies, thanks to sugar water**

By Megan Walde Manlove

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**Lady Lions host breast cancer research fundraiser**

On February 15, 2009, Lady Lion basketball will host the 2009 WBCA Pink Zone™ at Penn State, proudly supported by Mimi Barash Coppersmith, former member of the Penn State Board of Trustees and breast cancer survivor. This event is part of a global, unified effort for the Women’s Basketball Coaches Association’s (WBCA) nation of coaches to assist in raising breast cancer awareness on the court, across campuses, in communities, and beyond. It also is the third annual pink event hosted by the Lady Lions, this time with a goal of $100,000 that will go toward breast cancer research.

The Lady Lions will play the University of Iowa beginning at 3:00 p.m. and will host a number of other activities that will raise money for Penn State Hershey Cancer Institute, the Kay Yow Foundation, and the Pennsylvania Breast Cancer Coalition.
Daniel Shapiro, Ph.D., was recently named as chair of the Department of Humanities. Shapiro was most previously an associate professor of clinical psychiatry and director of the Medical Humanities Program at the University of Arizona College of Medicine.

Shapiro has received numerous awards and honors, including awards for excellence in clinical teaching and a National Institutes of Health predoctoral research fellowship. He is also the recipient of a medical humanism professorship from the Arnold P. Gold Foundation, which was awarded in recognition of his pioneering teaching technique that encourages medical students to make short films about patient’s lives.

In addition to his academic achievements, he authored the script for What the Doctor Ordered: About Cancer Patients and Fertility, which debuted at the 2003 Aspen Film Festival. During the past year, Shapiro also served as a consultant to the television show Grey’s Anatomy.

Shapiro earned his bachelor’s degree in psychology from Vassar College, Poughkeepsie, N.Y., and a doctoral degree in clinical health psychology from the University of Florida. He completed an internship at Harvard Medical School’s McLean Hospital, Belmont, Mass., and served as the Pollin Fellow in Medical Crises Intervention, an endowed fellowship, at several institutions in Boston affiliated with Harvard Medical School.

Ngoc Godshall, M.S., B.S.N., R.N., has been named outpatient director, University Physician Group and is responsible for eleven outpatient practice sites. Godshall joins Penn State Hershey following eighteen years of service at Pinnacle Health System where she was a staff nurse, nurse educator, and nurse manager. Godshall received her bachelor’s degree in nursing from York College and her master’s degree from University of St. Francis in Jolliet, Ill. In addition, she is a board-certified nurse executive and a fellow of the Healthcare Advisory Board Company.

Christopher DeFlitch, M.D., has been appointed the Medical Center’s first chief medical information officer (CMIO). He is also the vice chair of clinical services and director of the Department of Emergency Medicine.

As CMIO, DeFlitch will guide clinical information technology enhancement across the Medical Center, including advancing Connected™, the Medical Center’s enterprise-wide electronic medical record system; expanding partnerships with health-care information technology suppliers; and overseeing critical organizational initiatives related to quality and performance improvement. He will work closely with the Connected team and the growing clinical informatics programs throughout Penn State, focusing on enhancing clinical processes using information technology, optimizing clinician use of Connected, and advancing future health care delivery systems.

DeFlitch has held several leadership positions within the Medical Center and Penn State College of Medicine and has received numerous awards and honors, including being selected as one of America’s Top Emergency Medicine Physicians (2007), Who’s Who in Medical Sciences Education (2004), and Teacher of the Year for the York-Hershey Emergency Medicine Residency Program (1999). He serves on many institutional and departmental committees and contributes his time to community service and outreach activities.

DeFlitch earned his medical degree in 1994 from Penn State College of Medicine. He served as a resident and chief resident in the Department of Emergency Medicine at the University of Massachusetts Medical Center, in Worcester, Mass. He returned to Penn State Hershey Medical Center in 1998 where he has since been a full-time member of the faculty.
Anonymous gift boosts expansion of simulation training

An anonymous $1 million gift to Penn State College of Medicine means plans for an all-encompassing simulation learning complex are closer to becoming reality.

The College’s Simulation Development and Cognitive Science Center—called Sim Center for short—gives physicians, students, hospital staff, and community providers an unparalleled hands-on learning experience using high-fidelity full-human simulators, and trained human actors and task trainers, creating a safe environment for both patients and students.

This donation gives the College of Medicine a dramatic boost toward the $8 million, state-of-the-art learning complex, which will house even more full-scale patient simulators, examination rooms for standardized patient scenarios, multi-purpose rooms, and new video technology. It will also provide more part task trainers, which allow for repeated practice of tasks from inserting an IV to performing a colonoscopy or pelvic exam.

The location of the learning complex on the second floor of the library places it at the heart of the medical campus, consistent with the original vision of founding Dean George T. Harrell to place the library, a center of learning, symbolically between the college and hospital.

“We know a learning environment outside the clinical setting is proven to improve quality and safety, decrease procedure time, and enhance response to crisis situations,” said Harold L. Paz, M.D., Chief Executive Officer, Senior Vice President for Health Affairs, and Dean, Penn State College of Medicine. “So we are grateful for this generous contribution, one which moves us a step closer to a unique resource that will enable this institution to remain a leader in providing the safest and best medical care to our patients and our community.”

Created in 1992, the Sim Center is one of the most experienced in the country and is a nationally recognized leader in transforming clinical education using this new technology. “We are very fortunate to have the medical leadership of Drs. Elizabeth Sinz (medical director) and W. Bosseau Murray (associate director), both of whom have international reputations in the integration of simulation into healthcare instruction,” said John H. Moyer, administrative director of the Sim Center. “Under their direction, the lab has an extended simulation enhanced education to most of the clinical departments, including multidisciplinary team training, procedural skills practice, and ‘train the trainer’ classes to expand the roster of simulation course instructors.”

Richard J. Simons, M.D., vice dean for educational affairs added, “We are renowned nationally for leadership in the science of simulation as it relates to medical education, so we should be thinking of the Sim Center as a central, institutional resource rather than one solely of a single department or even of our own campus. “The new learning complex will let us take that next step, which is expanded access for even more learners.”

Last summer, the College completed the architectural planning phase for this keystone education project. Approval was granted to begin construction and the learning complex could be ready for occupation and use by fall of 2009. 

The Sim Lab is a nationally recognized leader in transforming clinical education.

Human simulators allow medical staff a chance to practice on lifelike models before working with patients.
Ed and Jeanne Arnold

“With financial resources come responsibilities.”

Edward H. Arnold never forgot his father’s words. The more money he earned, the more he tried to help others.

Jeanne Donlevy Arnold almost started life without a father at all. Two days before her birth, her father’s ship, the USS Ticonderoga, was the victim of a World War II kamikaze attack. For six weeks, her mother thought he was dead. He survived to become an electrician and raise his family in Rhode Island.

In 2007, Ed and Jeanne honored these words with a $1 million gift so Penn State Hershey Children’s Hospital could start the Hummingbird Program.

Jeanne always knew she would become a nurse, eventually becoming director of nursing at St. Joseph’s Hospital of Lancaster and Ephrata Community Hospital before joining Good Samaritan Hospital of Lebanon as vice president of patient care services. There, she met the Chairman of the Board of Directors Ed Arnold. Ed, born and raised in Lebanon, was by now a very successful businessman, having a significantly expanded a trucking company he inherited from his father when he was 30.

Jeanne took an immediate dislike to him. “He was annoying,” she says now. As two people with strong beliefs often do, they clashed over the direction of the hospital. “For eight or nine years, he was not on my good list,” she adds.

Things moved from conflict to romance when Ed invited Jeanne to golf. The second date was a trip to see Ed’s alma mater, Notre Dame, play football. In less than six months, they were engaged. They married on September 24, 1998.

Ed sold two of his three companies in 2001 and his third in 2007, allowing him to devote more time to his charity work. “My whole thing is, I want to make a difference,” he says.

His interests also include investing in both an alternative energy corporation and software company that helps non-profit organizations communicate better with their donors.

Ed’s philanthropic spirit is matched by Jeanne. Where Ed focuses on helping those who help themselves, Jeanne’s passion is helping the helpless. The list of charities they support is long and impressive, including Notre Dame University, Lebanon Valley College, the public library in Lebanon that bears Ed’s name, and the Boy Scouts of America. Lebanon Valley College has honored them with honorary doctorates.

It was Jeanne who named the Hummingbird Program. “The hummingbird is a fighter,” she says. “It hovers over things… its heart beats faster.” The program, which provides support to families of seriously ill children both while they are in the hospital and after they leave, fits both Ed and Jeanne’s interests. Moved by having met parents of these children, they saw a need and did something about it. Both now speak with pride about the program they helped create; believing it can be a model for similar programs across the country. — By Roger Sands
Penn State Hershey Children’s Hospital one step closer

Plans are underway to begin construction on the new, freestanding Penn State Hershey Children’s Hospital in the near future pending approval from the Board of Trustees. The 253,000-square-foot structure will provide more beds and clinic space than what is offered in the Children’s Hospital current location on the seventh floor of Penn State Milton S. Hershey Medical Center.

The five-story building will include a ground floor with support services such as a pharmacy and pediatric radiology unit. The project is designed by Payette Associates Incorporated of Boston, an award-winning architectural firm that has recently worked on building projects for Johns Hopkins University School of Medicine, New York Medical College, and the Harvard School of Public Health. They were also the architects behind Penn State’s new Life Sciences Building at University Park and the Penn State Hershey Cancer Institute, currently under construction.

Fundraising for the Children’s Hospital has already brought in more than $57.5 million as of July. The total project is estimated at $200 million.

“The new building will offer larger patient rooms, allowing parents to spend the night beside their child,” says A. Craig Hillemeier, M.D., medical director of the Children’s Hospital. “It will greatly increase our ability to offer family-centered care to our patients.”

The Children’s Hospital will be located on the south side of the new main entrance, which is currently being constructed as part of the Cancer Institute building project.

Though still a work-in-progress, these conceptual renderings demonstrate what the future Penn State Children’s Hospital may look like pending approval by the Penn State Board of Trustees.

Penn State Hershey Children’s Hospital ranked among the best by U.S. News & World Report

Penn State Hershey Children’s Hospital has been ranked among the best children’s hospitals in the nation in U.S. News & World Report’s 2008 edition of America’s Best Children’s Hospitals. The complete rankings, which include seven different specialties, can be found online at http://www.usnews.com/pediatrics and in the magazine’s June 9 issue. Penn State Hershey Children’s Hospital made the list for care of respiratory disorders.
Class Notes

'77 | Floyd P. Eisenberg, M.D.,
is a physician consultant with Siemens Medical Solutions Health Services in Malvern, Pa.

'80 | J. Frederick Pritchard, Ph.D.,
is vice president of drug development programs for MDS Pharma Services. His wife, M. Lynn Pritchard, Ph.D. ’81, is senior director, regulatory affairs, at King Pharmaceuticals. The Pritchards live in Raleigh, N.C.

'82 | Thomas J. Koch, M.D.,
is an otolaryngologist with Allen Ear, Nose, and Throat Associates in Allentown, Pa.

'87 | Cathleen Ann Woomert, M.D.,
has been inducted as a Fellow in the American College of Radiology. She is vice chair of radiology at Geisinger Medical Center in Danville, Pa.

'90 | Gerald P.H. Ballough, Ph.D.,
was recently named the 2008 Milton Hershey School Alumnus of the Year. He is a professor of biology at LaSalle University where he has been teaching since 1994. He is also a research scientist and consultant with the neurotoxicology branch of the U.S. Army Medical Research Institute of Chemical Defense in Maryland. Ballough, his wife Daryl, and two teenage sons live in Drexel Hill, Pa.

'93R | Peter N. Waybill, M.D.,
has been named associate director of operations and technology at the Penn State Hershey Heart and Vascular Institute. In his new role, he will direct the institute’s financial, development, and capital equipment plans.

'95 | Richard A. Fay, Ph.D.,
is scientific director of Embryon, a market development agency for the pharmaceutical and device industries in Somerville, N.J.

'95 | Ramon A. Franco Jr., M.D.,
is director of the Division of Laryngology at the Massachusetts Eye and Ear Infirmary in Boston.

'96 | Kurt A. Kennel, M.D.,
is a consultant in the Division of Endocrinology at the Mayo Clinic in Rochester, Minn.

'98 | Padmanee Sharma, M.D., Ph.D.,
is featured in M.D. Anderson Cancer Center’s Annual Report. Since the fall of 2005, Sharma has been involved in the center’s physician-scientist program which provides faculty protected time to combine medicine and research. She is an assistant professor in the Departments of Genitourinary Medical Oncology and Immunology at M.D. Anderson in Houston, Texas.

'99 | Jonathan L. Bingham, M.D.,
recently moved to Denver, Colo., where he began a MOHS micrographic surgery fellowship at the University of Colorado Medical Center.

'99 | Augustus B. Colangelo, M.D.,
is an assistant professor of emergency medicine at Tufts University School of Medicine in Boston.

'00R | Linda Camp, M.D.,
recently traveled to Honduras with Central American Medical Outreach, Inc. (CAMO). This is her second trip with CAMO’s plastic surgery team.

'00 | David J. Feith, Ph.D.,
recently received a grant from the Pennsylvania Breast and Cervical Cancer Research fund to aid in his breast cancer research with the Penn State Hershey Cancer Institute.

'04 | Heidi T. Kistler, M.D.,
a family practitioner, recently joined Twin Rose Primary Healthcare, which has offices in Wrightsville and Columbia, Pa.

'04R | Katarzyna Pomianowski, M.D.,
joined Hebron Family Practice in Hebron, Conn., on May 1. She was also named to the Windham Community Memorial Hospital’s medical staff. Previously, she was an attending physician at the Duncannon Family Health Center in Duncannon, Pa.

'05 | Michael T. Debes, Ph.D.,
is a research scientist for Centocor/Johnson and Johnson in Radnor, Pa.
Memorials

Mary K. Howett, Ph.D., an internationally renowned virologist and former Penn State College of Medicine faculty member, died in August from leukemia-related complications. She had spent thirty years in the Department of Microbiology and Immunology before retiring as professor emeritus. In 2003, she accepted the position of professor and head of the Department of Bioscience and Biotechnology at Drexel University.

Howett received her undergraduate degree from the Philadelphia College of Pharmacy and Science (now the University of the Sciences in Philadelphia) in 1969, from which she received the Distinguished Alumni Award in 2002. She received her Ph.D. in 1976 from The Wistar Institute of Anatomy and Biology of the University of Pennsylvania.

Howett had a distinguished career in viral oncology and directed a research program primarily focused on human papillomaviruses (HPV). Her work at Penn State, supported by the Jake Gittlen Cancer Research Foundation, contributed to the development of vaccines to prevent cervical cancer, including Gardasil, recently released by Merck Pharmaceutical Company.

During her career, Howett was the advisor of forty-five doctoral students and numerous postdoctoral fellows. She was a member of nine professional societies, a founding member of The International Society for NeuroVirology, and published more than 100 scientific articles in peer-reviewed journals. She was also the first female scientist to receive a National Institutes of Health fellowship to study at the Institute of Experimental Pathology and Therapy in the former Soviet Republic of Georgia. She was also an invited lecturer at the Institute of Virology in Beijing and at Wuhan University in Wuhan, both in the People’s Republic of China.

Alexander Kalenak, M.D., professor in the Department of Orthopaedics and Rehabilitation, died in September after a four-year battle with cancer. Kalenak was a 1957 Penn State University graduate and attended Hahneman Medical School in Philadelphia. Kalenak first joined the department in 1973 and was one of the early pioneers of orthopaedic sports medicine. In addition to the care he provided to his patients at the Medical Center, he served for many years as team physician for Penn State. His remarkable career accomplishments were recognized in 2005 with the creation of the Alexander Kalenak, M.D., Professorship in Orthopaedics and in 2006 he was named to the Hall of Fame of the American Orthopaedic Society for Sports Medicine. He was routinely selected as one of the “Best Doctors in America.”

In 2003, he created the Kay Kalenak Memorial Golf Classic to benefit palliative care and was instrumental in establishing a palliative care unit at the Medical Center, which provides care for terminally ill patients and their families.

His other accomplishments included serving as a United States Navy flight surgeon during the mid-60s, volunteer physician for the U.S. Olympic Committee in 1984, and team physician for the Big 33 Football Classic over many years. “Dr. Kalenak’s life personified service to others,” remarked Kevin Black, M.D., professor and C. McCollister Evarts Chair, Department of Orthopaedic Surgery and Rehabilitation, and director of the Bone and Joint Institute. “His commitment to excellence, courage, and passion for life has been admired by all of us.”

Edward Lurie, Ph.D., an original faculty member in the Department of Humanities died March 8 in Santa Fe, N.M.

Mikhail Sukernik, M.D., Ph.D., associate professor of anesthesiology, passed away in July. Originally from Novosibirsk, Russia, Sukernik joined the Medical Center in June 2004 and served as director of the cardiac anesthesia fellowship program.

’73 | John W. Boor, M.D., died on November 26, 2007, after a long illness in West Chester, Pa.

’79 | Mary Susan Moyer, M.D., died unexpectedly of a cardiac event on May 14. She was a pediatric gastroenterologist and on the faculty at the University of Cincinnati.
Children’s Miracle Network (CMN) at Penn State Hershey Children’s Hospital raised a record-breaking $3,157,496 during 2007-2008. The total was announced on June 1 during the twenty-fourth annual Children’s Miracle Network “Celebration” Broadcast on WGAL-TV8.

The “Celebration” broadcast represents the culmination of a year of fundraising efforts from individuals, businesses, and corporate sponsors. From fashion shows to car washes to radiothons, all money donated to CMN is raised one dollar at a time. This year’s top sponsors include GIANT Food Stores, Citadel Broadcasting Company, Wal-Mart, Sam’s Clubs, Rite Aid, Penn State Milton S. Hershey Medical Center and Penn State College of Medicine employees, the employees of The Hershey Company, and Auntie Anne’s Inc.

All funds raised throughout the year help support pediatric programs, research, equipment, and services at the Children’s Hospital. “All of the money raised stays right here in our own backyard,” says Jennifer Groff, director of Children’s Miracle Network. “We are committed to ensuring that the staff at Children’s Hospital has the tools they need to continue providing world-class care to our children.”

Children’s Miracle Network is an international nonprofit organization whose mission is to generate funds and awareness to benefit children in 170 affiliated hospitals in the United States and Canada. At Penn State Hershey Children’s Hospital, CMN has raised more than $31 million since it began locally in 1984.

To meet some miracle children and view a list of upcoming events, visit www.PennStateCMN.com

Wine festival benefits the Children’s Hospital

Wine connoisseurs from across the region filled the Giant Center concourse on May 7 for the 2008 Pennsylvania Wine Festival. The festival featured two wine tastings with 150 international vintners.

The early-evening VIP Tasting provided guests with exclusive access to premiere wines from select vineyards while the later Grand Tasting included featured wines. Select wines were also available for purchase through the PA Liquor Control Board.

All proceeds from the event, which exceeded $80,000, benefit Penn State Hershey Children’s Hospital.
Alumni Scholarships

Dear College of Medicine Alumni:

In the ten months I have been with Penn State, I have been most impressed with the passion and dedication you continue to demonstrate for the current students here at Penn State Milton S. Hershey Medical Center and Penn State College of Medicine. I do not need to tell you about the immense debt burden our students face, nor that scholarships are even more vital now than at any other time in the College’s history. These are facts you are well acquainted with, and it is the reason the Alumni Society has remained steadfast in its mission to raise money for the alumni endowed scholarships listed here.

What I can and should tell you is how genuinely appreciative the students are for the financial assistance they receive. I had the privilege of attending a luncheon with some of these students earlier this year, and the students were eager for the opportunity to thank those individuals who have made these scholarships possible.

Just a few weeks ago, the College announced the 2008-2009 merit scholarship recipients during Convocation. All together, nearly sixty alumni scholarships were awarded. Those of you who attended the All-Alumni Welcome dinner that evening had the chance to meet and speak with the student recipients. I hope you will agree with me in saying that without exception, these students are incredibly bright, motivated, and well-deserving of these scholarships.

On behalf of all of the students you have assisted, thank you for your generous and ongoing support of this extremely valuable fundraising effort. You truly are making a difference in the lives of others.

Sincerely,

Kristen B. Rozansky
Associate Vice President of Medical Center Development and
Chief Development Officer

Class of 1971 ......................................................... $173,890.68
Class of 1972 ....................................................... $29,348.80
Class of 1973 ....................................................... $38,221.94
Class of 1974 ....................................................... $78,311.48
Class of 1975 ....................................................... $229,445.27
Class of 1976 ....................................................... $35,925.43
Class of 1977 ....................................................... $36,045.05
Class of 1978 ....................................................... $45,077.75
Class of 1979 ....................................................... $34,385.00
Class of 1980 ....................................................... $45,579.15
Class of 1981 ....................................................... $39,640.00
Class of 1982 ....................................................... $41,560.00
Class of 1983 ....................................................... $51,213.27
Class of 1984 ....................................................... $48,431.31
Class of 1985 ....................................................... $47,977.44
Class of 1986 ....................................................... $16,607.47
Class of 1987 ....................................................... $31,612.53
Class of 1988 ....................................................... $18,440.91
Class of 1989 ....................................................... $39,717.75
Class of 1990 ....................................................... $11,401.02
Class of 1991 ....................................................... $4,047.53
Class of 1992 ....................................................... $9,654.86
Class of 1993 ....................................................... $5,218.34
Class of 1994 ....................................................... $13,859.11
Class of 1995 ....................................................... $11,852.68
Class of 1996 ....................................................... $16,078.89
Class of 1997 ....................................................... $17,174.75
Class of 1998 ....................................................... $14,819.60
Class of 1999 ....................................................... $16,595.00
Class of 2000 ....................................................... $17,428.97
Class of 2001 ....................................................... $12,198.79
Class of 2002 ....................................................... $7,262.02
Class of 2003 ....................................................... $9,246.93
Class of 2004 ....................................................... $14,418.18
Class of 2005 ....................................................... $3,465.82
Class of 2006 ....................................................... $1,618.77
Class of 2007 ....................................................... $4,996.21
Class of 2008 ....................................................... $300.00
Class of 2010 ....................................................... $635.00

Alumni Endowed .................................................. $270,143.89
Graduate Alumni ................................................ $48,944.00
MD/PhD Program ............................................... $44,512.18

Total ................................................................. $1,641,803.77

Includes gifts received as of 10/27/2008. (Bold denotes activated scholarship)
Think outside the box. It’s a phrase often overused to describe ingenuity and cutting-edge ideas, but it’s the only accurate way to explain the work of Kevin Pauza, M.D., ’90, recipient of the 2008 Penn State Alumni Fellow Award. He’s an inventor, researcher, teacher, and strong patient advocate, all roles he attributes to his mentors at Penn State.

Pauza has been thinking outside the box of spine care for years. After being dissatisfied with how traditional hospitals manage patients with back problems, Pauza realized that a more specialized approach would serve patients better. In 2002, he and his partners founded the Texas Spine and Joint Hospital in Tyler (TSJH), Texas. Today, the facility is ranked in the top five percent nationally for excellence in spine surgery and has an infection rate less than 1 percent. Pauza was hands-on in the entire creation process of the hospital all the way down to hand-selecting artwork in the patient rooms. “As it should be, every patient has a private room, similar to a comfortable hotel suite,” Pauza says. “During their critical recovery, patients either want to be alone, or to visit with family and friends for support. So we built it for them, and they love it.”

TSJH now performs more successful spine procedures than any other hospital in the country and many of those procedures are as different as the facility they are performed in. Take, for example, intradiscal electrothermic therapy (IDET), a minimally invasive procedure that shows great promise in treating persistent back pain compared to the traditional method of invasive surgery. Excited by the possibilities of IDET, which introduces a heated catheter into the spinal disk to strengthen the tissue, Pauza subjected it to a randomized study in which some patients received the surgery while others were simply given anesthesia and a minor incision. “Patients came in to the procedure and never knew if they got the placebo or the IDET,” Pauza explains. “Most insurance carriers now require a placebo study for surgical procedures.

It was one of the first placebo-controlled studies on a surgical device, a study that was so impressive to the FDA that they have now partnered with Pauza to test other back care treatments, including using a patient’s own stem cells to repair damaged tissue. Pauza developed this new method for repairing disk disease on a restaurant napkin and now holds the patent.

“We simply inject a biologic material in the disk to cause it to regenerate,” Pauza explains. “The recovery time is ninety minutes, patients are back to work in a day or two, and there is no risk of the patient having a reaction against them.”

Raised in Hershey, Pauza came to Penn State Hershey Medical Center early, assisting Ralph A. W. Lehman, M.D., chief of neurosurgery, in his research lab while still a teenager. After attending Lehigh University for his undergraduate degree, Pauza returned to the College of Medicine where he continued to be impressed by the research he saw around him. “When I was a medical student, we were required to perform a research project with a professor and that really opened up my eyes,” Pauza says. “Penn State really demonstrated the need for research to keep physicians thinking to know what’s new and on the cutting edge.”

Pauza’s research continues today while treating nearly 3,000 patients annually. His patients today range from local farmers who thank him with homemade pies to Middle Eastern dignitaries who fly in on private jets. “On several occasions, I had to explain to patients why I preferred that their bodyguards, with their guns, stay outside of the operating room while I worked.”

As different as their backgrounds may be, they all have one thing in common—they were unable to find relief for their back problems under conventional methods and are thankful to find the treatment they needed. — By Holly Swanson
Searching for beauty

All physicians hope to make a difference to their patients and to leave a mark on their medical facility. It’s easy to assume that Richard Naeye, M.D., professor emeritus and retired chair of the Department of Pathology and Laboratory Medicine, has already done just that during his forty-one years of service to the College of Medicine. As a researcher in fetal health, Naeye has published nineteen papers on topics such as sudden infant death syndrome, fetal brain damage, and lung disease in low birth weight infants. Despite being retired, Naeye still spends close to forty hours a week in his office, studying placentas as a consultant and at the requests of parents who need to know what went wrong.

But despite hundreds, probably thousands, of patients who have been touched by Naeye’s care, countless others will appreciate Naeye for an entirely different reason—the eye candy he has left on the hallways of the Medical Center. Dozens of Naeye’s photographs, ranging from flowers and wildlife to rock formations and power plants, provide a visual respite to patients and employees.

Naeye describes his interest in photography as being somewhere between a passion and a hobby, but anyone who views his artwork sees the skill of a professional. “The major benefit the photographer receives is learning how to recognize things that are beautiful,” Naeye says. “As a result, I see a tremendous amount of things that are beautiful that other people don’t notice.”

After signing up for a nature photography workshop in Arizona, Naeye was hooked. “I learned from some of the best,” he says. Over the years, Naeye hosted photography exhibits and eventually allowed his artwork to grace the walls of the Medical Center at the request of his coworkers.

Despite traveling across the country for his photography, Naeye continues to find inspiration in his own backyard located just two and a quarter miles from the Medical Center. “It’s a lot of fun taking pictures,” Naeye says. “There is no way I can express being able to see something that is really beautiful and figuring out how to photograph it. When I look out the window at work, I always see beauty.” — By Holly Swanson
Help build a home for hope.

The new Penn State Hershey Children’s Hospital is a place for children to find strength to fight devastating illness or battle back from severe injury. It is a place for families to find hope. It is a place where Penn State doctors, nurses, and caregivers will provide the most advanced treatment and compassionate care for thousands of children each year.

That’s why generous donors like Edward H. and Jeanne Donlevy Arnold are providing vital support to make the new Children’s Hospital a reality. Contact the Campaign for Penn State Hershey Children’s Hospital at 717-531-8497 and make your gift today.

Read Ed and Jeanne’s story at www.pennstatehershey.org/homeforhope.

You can make a difference too.

Artist’s rendering of the proposed free-standing Penn State Hershey Children’s Hospital