St. Jude Children’s Research Hospital was founded by the late entertainer Danny Thomas. It opened February 4, 1962. The institution was created because of a promise Thomas made during the depression era to St. Jude Thaddeus, the patron saint of the hopeless.

“Show me my way in life,” Thomas prayed. In return, Thomas promised to build St. Jude Thaddeus a shrine. That shrine became a world-class research institution that treats children regardless of race, color, creed or their ability to pay. This remarkable event also inspired the name of this magazine, Promise.
Great news about AML

A new strategy for treating childhood acute myeloid leukemia (AML), based on the individual patient’s risk of failure and guided by results of a highly sensitive technique for identifying leukemic cells, yielded one-year survival rates of almost 90 percent, according to investigators at St. Jude and a national consortium of research institutes. The ongoing clinical trial found that almost 77 percent of survivors were free of leukemia a year after diagnosis. The trial was the first to use minimal residual disease measurements in a study of AML treatments to make accurate assessments of treatment response for each child, and to adjust treatment accordingly.

Scythe as equalizer

A protein called Scythe determines which cells live and which die during the growth and development of the mammalian embryo, according to St. Jude investigators. The study is the first to show that Scythe plays a critical role during mammalian development by regulating when and where specific cells either proliferate or undergo programmed cell death. Understanding this process could provide significant insights into how organs develop in the growing embryo. Peter McKinnon, PhD, of Genes and Tumor Cell Biology was senior author of a report on this work that appeared in the December 2005 issue of Molecular and Cellular Biology.

Just say no

Adults who abuse cocaine might increase their risk of developing Parkinson’s disease (PD), and pregnant cocaine abusers could increase the risk of their children developing PD later in life, according to results of laboratory studies performed by St. Jude investigators. The findings are important because there are currently more than 2 million cocaine abusers in the United States. Many individuals who used the drug during the cocaine abuse epidemic of the 1970s and 1980s are now entering their older years, when PD symptoms are likely to emerge.

Bird flu insights

St. Jude investigators have completed the first large-scale study of bird flu virus genomes, doubling the amount of genetic information available on the viruses' genes and proteins. The project could yield important insights into the bird flu virus known as H5N1. “Now we’re in a much better position to understand what makes these viruses tick,” said Clayton Naeve, PhD, director of St. Jude’s Hartwell Center for Bioinformatics and Biotechnology. “And that could help us learn how to control the avian influenza viruses that threaten humans.” Naeve is senior author of a report on this project, which appeared in the January 2006 online issue of Science.

Solving for X

Individuals who have a rare genetic immune system disorder that prevents them from making antibodies nevertheless appear to be moderately healthy and lead productive lives, according to results of a study by St. Jude investigators. The study of 41 adults with X-linked agammaglobulinemia (XLA) showed that they can function as relatively healthy, productive individuals, even though they remain vulnerable to chronic, low-grade infections. “Until we did this study, there was almost nothing in the medical literature about adults with XLA,” said Mary Ellen Conley, MD, of St. Jude Immunology. Conley is senior author of a report on this study, which appeared in the February-March 2006 edition of Clinical Immunology.

St. Jude is an amazing institution, and I am honored to support the hospital.” This year, the Funbook has been updated to include more of today’s gaming features such as interactive video game graphics, pastime videos, new teacher materials and samples. The CD-ROM features challenging new problems and the Web site, www.mathathon.org, has been revamped. But the most exciting addition to the site is the Math-A-Thon WIRED section.

For more than 26 years we have been doubly privileged to receive the support of so many students and to help them in their education,” says David L. McKee, chief operating officer for ALSAC, the hospital’s fund-raising arm. “We hope the students are as excited about this year’s new additions and will keep St. Jude on its mission of finding cures and saving children.”

Solving Problems, Saving Lives

Kids across the nation are crunching the numbers and raising funds through the St. Jude Math-A-Thon.

BY JOE HANNA

M any adults remember mathematics as a cold, calculating reality in which there are no gray areas, just right and wrong. Other adults—who recall finding comfort in the fact that two plus two always equals four—say math was their favorite subject in school.

In 1979, St. Jude Children’s Research Hospital created a fund-raising program called Math-A-Thon®. Students around the country could complete math problems for a set donation amount or for a donation per problem. Looking at the program’s success, you would think everybody loved mathematics. Each year more than 25,000 schools—and thousands of students from kindergarten through ninth grade—participate in the St. Jude Math-A-Thon.

Through Math-A-Thon WIRED, teachers and students can create their own secure Web pages, send e-mails to sponsors and allow supporters to see their progress. The site also gives sponsors the option of giving to St. Jude via credit card.

“For more than 26 years we have been doubly privileged to receive the support of so many students and to help them in their education,” says David L. McKee, chief operating officer for ALSAC, the hospital’s fund-raising arm. “We hope the students are as excited about this year’s new additions and will keep St. Jude on its mission of finding cures and saving children.”

Actress and published mathematician Danica McKellar adds her math skills to help St. Jude in its mission.
With boundless energy, 2-year-old Breanna Crowder climbs to the top of a colorful slide, pausing for an instant with a shy smile. "Ready?" she chirps in a tiny voice, and hurtles down the incline. Jumping up from the floor, she gleefully runs back to the ladder to repeat the process again and again.

As Breanna revels in the pure joy of this simple activity, she appears to be a typical toddler. But her mother and grandmother, watching nearby, know that Breanna’s something special. It’s an opinion held by the medical community, as well. For this pint-sized pioneer is the world’s first person to undergo a revolutionary procedure to cure a kind of cancer that has been—until now—virtually incurable.

Just in time
When Breanna was only a few months old, her stomach became distended. “At first we just thought she was getting healthy and fat,” recalls her dad, Billy Crowder. But soon the baby became fussy and lost her appetite. Billy and his wife, Crystal, took their daughter to a local doctor and then to an area hospital. Suspecting that the infant had leukemia, physicians immediately referred her to St. Jude Children’s Research Hospital. Crystal will never forget the moment she realized that her baby had cancer. “I froze for a little while,” she says. “I was speechless. What was going through my head was, ‘Why me? Why my daughter? I was thinking, ‘What did I do wrong? Was it something I did?’”

The young couple soon learned that they had done nothing wrong; in fact, they were fortunate that they had taken Breanna to the doctor when they did because her condition was deteriorating quickly. “When we got to St. Jude, they told us that if we had waited another couple of days that she would probably have died,” Billy says.

Physicians discovered that Breanna had an extremely rare form of cancer called juvenile myelomonocytic leukemia (JMML). According to the National Cancer Institute, JMML...
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accounts for less than 1 percent of all childhood leukemias. And the survival rates are dismal. “If you treat the child with chemotherapy alone, the survival rates for JMML, is zero percent,” says Wing Leung, MD, PhD, of St. Jude Hematology-Oncology.

Breanna’s only hope for a cure lay in a stem cell transplant. But with a transplant alone, her chance of survival would still be low. The first strike against her was her age. Infants with leukemia have an extremely high chance of the disease returning after treatment. “The younger you are, the worse the prognosis,” Leung explains. “After a stem cell transplant, at least 50 percent of patients with JMML relapse,” he says. “This is the first protocol at St. Jude that the best course of action would be to do a double transplant using the same donor but two different types of cells,” Rubnitz adds. “This is the first protocol at St. Jude to do a double transplant using the same donor but to different types of cells,” Rubnitz adds.

Breanna responded well to the therapy, and her disease went into remission as planned. After extensive testing, doctors determined that Billy would be the donor. “The hospital made use of every possible avenue to help her,” he continues. “The credit should go to all the trained employees.”

Breanna was an active toddler, and the Crowders are thankful for the miracle of St. Jude that has brought their lives into two separate移植s. “Bree has really come a long way,” Crystal says, “and I thank God every day for that.” Billy says the significance of Breanna’s recovery extends far beyond his family. “Nobody really knows a whole lot about JMML,” he says. “But if they learned something new from her and they’ve found a new way to help other kids, then maybe it was for the larger good.”

Breanna has come a long way since this photo was taken, around the time of her transplant.
Since its inception, St. Jude has aimed to make patients and families participants in their care. But in 2001, many medical and administrative staff members attended international conferences on the hows and whys of family-centered care, and the hospital truly shifted from family-focused to family-centered care. Moving to this higher level, St. Jude emphasizes the importance of patients and families as active participants in their own care, rather than as passive recipients.

The best way to empower patients and their families is through knowledge. St. Jude staff members have developed a cache of resources—from books, pamphlets and medication cards to illustrations, videos and Internet sources. “Our responsibility is to make this sea of information understandable,” says Patient Family Educator Alicia Huettel, Nursing Education. “That can mean respecting cultural differences, taking into account varied levels of education and creating resources that cover the different ways people learn. We are also sensitive to the fact that people only learn when they are ready. Too much information too soon can be overwhelming. We strive for just-in-time information.”

When new families arrive at St. Jude Children’s Research Hospital with their children, they often feel as if they can’t breathe. Their life, it seems, has been smashed on the floor like a plate, breaking it into a million uncollectible pieces. They feel as if they have no control, no tether on which to grasp. But within a few days, their lungs are once again taking air, slowly, regularly, in and out. They start reading, listening, learning. With this knowledge comes power...and breath.

**Higher levels**

At St. Jude, family-centered care is of topmost importance; staff and families act as interdependent partners in the care of the child. “We know that parents are the experts on how their children are experiencing their illness,” says Samuel Maceri, DNSc, director of Nursing Education. “Families have their expertise, and each St. Jude treatment team, with all its layers, has its expertise. This relationship is better than the sum of two parts; it’s synergistic.”

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**Always more to learn**

When Beth Lucas and her husband, Timothy Pierce, were told that their 6-year-old son had medulloblastoma, a brain tumor, they wasted no time learning everything they could—from available treatments to what hospital had the most advanced research and protocols.
"Our doctor gave us several recommendations," Beth says. "They were all top-notch, but after doing a lot of research, talking to people and spending a great deal of time on the Web sites of these hospitals, we decided that St. Jude was definitely the best place to take Christian for treatment. The St. Jude Web site was by far the most comprehensive, and the research being done was further along and more advanced than the other places we reviewed."

Since coming to St. Jude, Beth has not let up on her research. "I go to the Family Resource Center almost daily. Because cancer research is moving so fast, I want to keep up," she says. "I also like to educate myself on the cancers our friends’ kids have here; I can always find what I need, whether through a book, pamphlet or online." Lucas knows, too, that if she can’t find an answer to a question, she can always ask.

"The doctors, nurses and other staff are always available to answer my questions," says Christine White, the mother of 14-year-old James. "But sometimes it’s easier for me to be able to read about something—to take my time with the information." Christine says that when she opens a book or a medical Web site, she feels a certain calm wash over her. She struggles with the emotions of having a child with cancer, but she finds that the more she knows, the quicker her fears dissipate.

"I go to the Family Resource Center to teach myself as much as I can about James’ disease, but also, sometimes, just to sit, look out the window, think."

**Becoming proficient**

When a child is first admitted to St. Jude, the family receives the Patient Family Reference Resource, a large binder with everything they need to know—from infection control to a published study on the importance of hope. These binders are written from the parents’ perspective and are tailored for each child with specific disease and treatment sections.

When St. Jude patients achieve alumni status—10 years after diagnosis or at age 18, whichever date is later—they are given Personal Health Records, large notebooks that contain items they will need as they make the transition to adulthood. The notebook chronicles the individual’s health history with copies of records, scans and medical reports. It provides recommendations for future tests and screenings as well as information on possible long-term risks and late effects.

Even with the countless resources available, staff members want patients and families to know that no question is too small or innocuous to ask.

"I want our families to know that they can ask anything any time and as many times as they need to," says Huetl. "We have many resources to share, but sometimes a human answer is what you need. Knowing I can allay a fear with an answer makes my job worthwhile every day."

For Amber Kessler, RN, of the Ambulatory Care Unit, one of the best parts of being a line nurse is seeing parents gain confidence. "They go from a mother or father who feels helpless to someone who can expertly clean and flush their child’s central line," she says. "It’s amazing to see how these parents change within a week. They take the skills we teach and run with them. Being able to take care of their child’s line gives them pride, but more importantly, it’s something tangible—and loving—they can do for their child during treatment."

**All ideas and perspectives**

Parents sit on many committees when resource materials or hospital processes are created or revised. "Families lend us crucial perspectives about how patients are cared for, what the experience is like for patients and families," says Maceri. When the Linda R. Hajar Family Resource Center was built, for example, it was designed without a door. "That decision came from family input. They wanted a library that was open 24/7, where they could go at any time, for answers or for refuge." Patients and families have also offered advice on health literacy, cultural differences and language barriers. One teen patient even inspired the Teen Room, an exclusive place to relax, hang out with friends, listen to music and just be a teenager.

“Our staff lacks nothing when it comes to taking care of our kids and families,” says Maceri. “This is how health care should be. For me, there is an excitement in being in a profession in which you can make a real difference in someone’s life. Empowering parents with knowledge so they can play a greater role in taking care of their sick child is in itself empowering; you can immediately see the difference on their faces. It’s like watching a black-and-white picture suddenly burst into Technicolor.”

"Empowering parents with knowledge so they can play a greater role in taking care of their sick child is all too empowering," says Samuel Maceri, DNSc, of Nursing Education. "You can immediately see the difference on their faces. It’s like watching a black-and-white picture suddenly burst into Technicolor."

**Helping others brings great satisfaction to 80-year-old Madelyn Fotovich, RN. As a kindergarten teacher she helped shape young minds; as a pediatric nurse, she helped young children regain their health. And when she became a nurse in a cancer ward, she helped many individuals in their fight against cancer.**

Helping others, especially children, is a trait she learned from her father. And very little has stood in her way—not even a fall that left her arm paralyzed some two years ago, forcing her to leave nursing. She still retains the function of her hand on her left arm and has made the best use of it by volunteering in her hometown of Kansas City, Kansas.

In her community, she is known for working with a number of different projects, such as assisting the local historical museum or ensuring that needy elderly people in her area have food and supplies. "I don’t regret one day that I have helped someone with," she says. But of all the things Fotovich contributes to her community, supporting St. Jude Children’s Research Hospital is at the top of her list. As she goes about her daily tasks, she shares the hospital’s mission with those who she helps. Fotovich also serves as a St. Jude “ambassador,” she says, at some of her local banks. Using St. Jude materials provided by representatives of ALSAC, the hospital’s fund-raising arm, Fotovich keeps two of her city’s financial institutions stocked with informational brochures.

Her devotion to St. Jude began in 1965 when she began sending small donations each year to the hospital. In 1997, Fotovich decided to increase her giving after she and her father watched a St. Jude television special. “We both looked at one another, and he said, ‘What do you think about that?’” Fotovich recalls. She told her father that she would write to St. Jude and obtain even more information about the institution. Satisfied with the hospital’s response, she increased her support, which has continued to grow through the years to include charitable gift annuities and estate planning. “It’s been going strong ever since,” she says.

In 2004, Fotovich visited St. Jude and witnessed what her donations had helped accomplish. Speaking with the doctors, nurses and patient families was important for her, as she is not one to take anything at face value, especially the charity she is supporting.

“Working in a hospital before, I had visualized all this,” Fotovich says. “But it was more than I expected.” She was delighted to know that the gifts she had given the hospital had been making a difference.

A year later Fotovich had the opportunity to meet another patient family, this time in Kansas City. It was a chance, she felt, to talk privately with the family and find out if St. Jude really did all of the things she had seen at the hospital.

“I was able to ask the questions again and see if the answers proved to be the same,” Fotovich says. “I was pleased to hear the family confirm everything that she had been told. “I took away the knowledge that St. Jude and their personnel were doing everything possible for the children,” she says.

What Danny Thomas was able to accomplish with his single promise to St. Jude Thaddeus, the patron saint of hopeless causes, still moved Fotovich. “I feel so happy in him for doing that. Look what he has done. Look what he has done for all these children.”

To learn about more ways to give, call ALSAC Gift Planning at (901) 578-2425 or toll free at (800) 830-8119, ext. 2425.
José Rodríguez is not going to let cancer or the loss of a leg prevent him from pursuing his dreams.

Step by step

Of the three hospitals doctors recommended to José, only St. Jude Children’s Research Hospital could start treatment immediately. “I was scared. We couldn’t wait. I wanted to make all the right choices for my José,” says Waleska Quinones Gomila, José’s mother. “St. Jude was the safest and most secure place for us to come. And it has turned out to be the best.”

José, his mother and 14-year-old sister, Sheila, had only a few days to leave their home and move to an unfamiliar country. “We found out on a Thursday and had to leave Monday,” says Waleska. “Those days were difficult. Our home, friends, family, school buddies—we had to say goodbye to it all.”

At the end of March, José started treatment. A cancer of the bone, osteosarcoma usually occurs during the growth spurt years when the body is roiling with surplus hormones. And it is not unusual to see the disease occurring in taller teens. More than 80 percent of children with osteosarcoma respond well to a cocktail of three chemotherapy drugs. Unfortunately, José was in the small minority that did not respond favorably. His tumor continued to grow and spread; prophetically, it turned black. Soon it invaded his ankle joint. To save his life, surgeons had to amputate José’s right leg five inches below the knee.

Before the operation, José told some of his neighbors at Target House that he would like for them to make dinner for him upon his return from the hospital. He would be walking to the dinner, he told them, not rolling to the table in a wheelchair.

He also asked his mother if losing his leg would be “troublesome” to her. “I told him, no, of course not. Losing his leg or anything wouldn’t matter to me. He is my José, my son,” she says.

A young man of sensitivity and quiet pride, José didn’t know what the future would hold. His St. Jude doctor, Carlos Rodriguez-Galindo, MD, Hematology-Oncology, assured José that although they had not been able to save his leg, they would do everything possible to cure him. “As an athlete, he had a lot to think about, but José is a strong boy,” says Rodriguez-Galindo. “With help, I know José will become the athlete he dreams of being.”

The morning after surgery, when Rodriguez-Galindo came to check on José, the 6-foot-tall teenager was waiting, wearing a transitional prosthetic. “I

Like Tour de France icon Lance Armstrong, José Rodríguez displays an indomitable spirit. The young bicyclist was back in the saddle only a few months after losing his right leg to cancer. José is determined to return to competition—and win.

BeyonD expectation

By Victoria Tilney McDonough

José Rodríguez is not going to let cancer or the loss of a leg prevent him from pursuing his dreams.
already walked,” he said. First his eyes smiled, then his lips, then his whole face.

No limits
José is not one to complain. It’s not that he puts on false cheer; rather he is genuine, listening to what his head and heart tell him. Although he says he doesn’t think he has changed since coming to St. Jude, he also admits that he once saw himself as a person with limitations. “Now, when I feel down, I tell myself I am not the only one,” he says. “There are people like me, and people worse off, too, and they come out whole. So, if they can do that, I tell myself I can, too.”

“José is a phenomenal boy. He has taught us lessons about not falling into depression, about taking on a hopeful attitude,” says Waleska. “Sometimes we reach a point when we think things are so difficult that we just abandon them. José has taught me that no problem is too big. You don’t give up. You keep going.”

Like Lance Armstrong, the cyclist who had cancer and yet won seven Tour de France cycling races, José is adopting a you-can-do-anything attitude. “The child is clutching to that—the idea that you can do whatever you put your mind to,” says Waleska. “In fact, he wants to prove to the world and to himself that he can compete in bicycle races and win—even with the prosthesis.” Less than five months after the operation, José was back on a bike.

José is mastering his new leg, and even showed it to the kids at his Memphis school.

“I have seen José arrive here as a boy, and I will see him leave a man.”

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Adjusting to a prosthesis is not easy. At first, walking with a fabricated leg involves learning balance and gaining confidence.

José and his mother have been a delight to work with,” says Physical Therapist Lulie Callaway, Rehabilitation Services. “He always has a big smile on his face (except when the chemo is running) and works hard every time he is in therapy, with his mom by his side cheering him on. Whenever we would meet a big milestone walking or using his prosthesis, his face would light up; there would be this look of thrill and hope in his eyes, and his mother would clap her hands knowing all the while he could do it. She is right—he can do anything he sets his mind to doing.”

José is mastering his new leg, and even showed it to the kids at his Memphis school.

“Once they saw it, the mystery was gone,” says Waleska. But, she adds, smiling, that the girls are still ready at a moment’s notice to help José with anything—and everything—he needs.

Strength and tenacity
Although José experienced a setback when he fell on his prosthesis while jumping rope, he is back on a bike and getting stronger and more confident on his new leg.

“What I love about biking is the stiff training,” he says. “And you know, when you push yourself, that is really liberating.”

José noticed that when Tom Baker, who makes prosthetic limbs for St. Jude patients, came to fit his prosthesis, he arrived on a motorcycle. Baker also has his own prosthetic leg.

“José has a quiet strength,” says Baker. “He is making great strides in physical therapy, and he is always eager to learn and adapt to his new leg in whatever ways he needs to.” When José is ready, Baker will be able to offer advice about special prosthetics and equipment developed exclusively for cycling and racing.

Cycling is not José’s only forte. He also makes jewelry, knits and, of late, has taken up rollerblade racing. He is also a spirited dancer. “One of my best memories of José is of him dancing with the nurses,” says Rodriguez-Galindo. The doctor and patient have become close friends, sharing Spanish as their native language. Rodriguez-Galindo promised José that he would take the teen and his family out for a celebratory meal after José finished chemotherapy. “That was the only time I saw José cry,” Rodriguez-Galindo says. “This has been a very emotional year for José. You start to feel safe here, and, ironically, thinking about leaving can be hard. But José has a very good soul. He is a pure boy. He will thrive wherever he is, whatever he is doing. I have seen José arrive here as a boy, and I will see him leave a man.”

When asked if he was disappointed when Lance Armstrong retired from professional cycling, José says no. “I figured he must have felt pretty tired.” Then revealing his shy, beautiful smile, José adds, “There will be other champions.”

PHOTOS BY SETH DIXON

José walks a balance beam with a little help from his mom (at left) and Physical Therapist Lulie Callaway.

Anywhere is a good place for dancing. As his mom beams proudly from the sidelines, José and Nurse Practitioner Mindy Lipson show off some fancy steps in a hospital hallway.
From the laboratory through production to the clinic—all on one campus.

"The bench-to-bedside philosophy is the sine qua non of St. Jude," says Raymond Barfield, MD, PhD, assistant member of Hematology-Oncology. "The bench (laboratory) research is extremely important because that’s how you devise novel things that you might be able to try in the clinic; and the clinic is extremely important because without that aspect, the bench work doesn’t make any sense."

Leading the charge

The promising antibody will be one of the first therapies to emerge from the institution’s full-circle translational process. Barfield says an on-site production facility, the Children’s GMP, LLC, is a critical link in the bench-to-bedside journey. This biomedical workshop, opened in 2003, produces highly specialized medicines, vaccines, proteins, gene-based molecules and other biological products under government-approved Good Manufacturing Practices regulations.

"The facility is one of the key components on our campus because they’re able to expedite promising things from the laboratory, to a scale that can actually be tested in a clinic," Barfield explains. "Many times, that transition is the toughest challenge that investigators face."

St. Jude is the only pediatric cancer research center to have such a production facility on site. Its presence allows the institution to pursue revolutionary therapies focused exclusively on saving children’s lives.

"It’s a lengthy process, but protecting the child is the priority," Barfield says. "Making sure anything we bring into the clinic has gone through rigorous thought and testing is paramount.

Attack from every angle

According to Coleman, the full-circle process can take anywhere from 30 days to two years. But if St. Jude researchers were forced to rely on outside sources for production, it could run anywhere from five to 10 years.

That kind of time is something that children with neuroblastoma, like Brendan, don’t have. This form of cancer arises in immature nerve cells and affects mostly infants and children. Often, the disease has already spread throughout the body by the time the disease is diagnosed.

"Our success with the antibody therapy is especially important because neuroblastoma rapidly spreads through the body, making it difficult to treat," explains Mario Otto, MD, PhD, a postdoctoral research fellow in Hematology-Oncology. "And many children who are successfully treated suffer a relapse within five years."

"Only 40 percent of children with neuroblastoma can be cured; children who

doors for new treatments that would not be available otherwise. This facility is not a big chemical plant or pharmaceutical company, it’s a discovery outfit."

The battle plan

What is the most promising therapy for these kids?

Barfield says that question drives St. Jude research, and the on-site production facility helps make novel therapies possible. "The facility produces a freedom of ideas that’s not linked to the bottom line, and no one else has that," he says. But a researcher must do more than walk from the lab to the production facility with a great idea to move a drug from concept to production. The process requires countless hours of research, the ability to navigate a sea of regulations and the fortitude to scale mountains of paperwork.

After a research project produces consistent, solid results in the lab, a committee of St. Jude faculty members thoroughly reviews the project. If it meets their approval, the project moves to James Downing, MD, the hospital’s scientific director, for further scrutiny.

"It’s not cheap to do these things," Coleman explains. "By the time you take all the time and resources into account, a project can range from $250,000 for a simple project to more than $1 million for a complex project. That’s why we have a committee and why Dr. Downing looks at the projects carefully."

An antibody in production at the Children’s GMP, an on-site production facility, may offer new hope to children with neuroblastoma.
suffer relapses following treatment are virtually incurable. That’s why the antibody St. Jude is producing is generating so much excitement. Otto and Barfield predict that it will be ready to go into clinical trials in the next few months.

“This antibody is a very big step, we’re hoping, in improving the survival rate,” Otto says. “Because it is developed in a different way than previous antibodies, we can increase the dosage significantly in hopes of increasing the antibody’s ability to kill neuroblastoma cells—most importantly—without pain.”

Pain has been the primary side effect of previous antibodies designed to treat neuroblastoma. With the potential for pain to be removed and for higher doses of an aggressive antibody to be administered, new doors in neuroblastoma treatment will be opened.

“I envision down the road, having a high-risk patient with neuroblastoma who has surgery, radiation, initial chemotherapy and an allogeneic transplant (a transplant between two individuals), followed by antibody therapy,” Barfield says. “The idea is to use every mode of therapy to treat these kids because cancer is smart and it finds ways to escape. So you have to be novel and attack it from every angle.”

While St. Jude forces rally to battle, young Brendan Wallis methodically aligns his small, plastic soldiers; oblivious to the tumultuous war his immune system is waging on his cancerous tissue—the enemy within.

“It’s a rough disease, and they have to treat it aggressively,” says Samantha Wallis, Brendan’s mother. “Day by day, it’s a waiting game. Hopefully, we’re waiting for him to get better.”

The world on a string.

String wars. Unconventional chess games. Quiet conversations with a hospital chaplain. All of these activities—combined with exceptional medical treatment—helped Timothy Sheets reach his goal of returning home to friends and family.
The doctors didn’t think he would go through puberty. When he not only went through puberty but it happened early, the doctors took more scans,” says Tim’s mother, Deborah. Tim’s previous MRI had not indicated a brain tumor. “When we got the message that this time it was a tumor,” she says, “we were shocked.” It was the tumor that had sparked the family’s jump to puberty. Tests at a hospital in Utah indicated that the tumor might be a kind called craniopharyngioma, a rare kind of brain tumor. “The nearby hospital in Salt Lake City had treated three or four of the nine subtypes, but they were not sure which type Tim had,” Deborah says. “My brother is in adult oncology, so I immediately got on the phone with him.”

Through extensive online research and advice from local doctors, family and friends, the Sheets family found St. Jude. On top of this fresh news about their son, the family’s house was under renovation. “The back 50 feet of our home was wide open,” says Tim’s father, Dave. The family got together and prayed. “Imagine being in the middle of a major house remodeling; you find out your son is facing a brain tumor, and the closest place to you does not have the latest protocol open for this rare tumor,” Deborah says. “The thought of uprooting to St. Jude was overwhelming.”

Moving was not their only concern. “While the family knew a little bit about St. Jude, they did not know how they could go through puberty. When he not only went through puberty but it happened early, the doctors took more scans,” says Tim’s mother, Deborah. Tim’s previous MRI had not indicated a brain tumor. “When we got the message that this time it was a tumor,” she says, “we were shocked.”

It was the tumor that had sparked the family’s jump to puberty. Tests at a hospital in Utah indicated that the tumor might be a kind called craniopharyngioma, and doctors thought they could operate. Then additional testing revealed a blood marker that led to an accurate diagnosis of nongerminomatous mixed germ cell tumor, an extremely rare kind of brain tumor. “The nearby hospital in Salt Lake City had treated three or four of the nine subtypes, but they were not sure which type Tim had,” Deborah says. “My brother is in adult oncology, so I immediately got on the phone with him.”

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Jane Hankins, MD, of Hematology-Oncology examines St. Jude patient Ronald Porter. Hankins and other clinicians at St. Jude are investigating whether a drug called hydroxyurea can prevent pain crises, pneumonia and organ damage in young children with sickle cell disease.

By Bonnie Kourvelas

It’s like slamming a car door on your hand—then multiply that by 10. Imagine your 8-month-old baby suffering a pain crisis like that one. Why? Because of sickle cell disease.

You’ve heard of sickle cell disease, and its most severe type, sickle cell anemia. About 70,000 people in the United States have various forms of sickle cell disease. One out of 400 African-American babies is born with it. But labeling it as a purely African-American disease is a mistake; Middle Eastern and Caucasian people can carry and inherit the genes that cause sickle cell disease. Doctors are also seeing rising numbers of the disease in the booming U.S. Hispanic population. However, many non-sufferers don’t realize how devastating sickle cell disease can be. It can cause pain crises, infections, lethal pneumonia and organ damage. And the devastation starts in infancy.

When babies are born with sickle cell disease, they are protected for about six months by fetal hemoglobin. However, as the level of fetal hemoglobin drops during the first year of life, the disease starts its damaging effects. A medicine called hydroxyurea can keep hemoglobin levels elevated in older children and adults.

St. Jude researchers wanted to know: Will the drug work on babies too? Several years ago, they created a study to find the answer.

“We wanted to try to apply this to younger children and see if the treatment that worked for adults and older patients would work just the same for the babies,” says Jane Hankins, MD, St. Jude Hematology-Oncology. “Could we prevent pain crises? Could we prevent pneumonia? Could we prevent organ damage?”

“Pneumonia is dramatic in sickle cell disease because it progresses so fast,” she continues. When people without sickle cell disease get pneumonia, they usually just take antibiotics and stay home. But in individuals with sickle cell disease, pneumonia often progresses from one lung to the next.

“It can take both lungs very quickly,” Hankins says. “I’ve had many patients who quickly went from having a little bit of cough to needing oxygen and a few hours later to being intubated in the ICU.”

The St. Jude feasibility study called Hydroxyurea Safety and Organ Toxicity (HUSOFT) was designed to see if babies could tolerate taking hydroxyurea. Clinicians weren’t sure the babies would take the drug, even in a liquid preparation. But the results were encouraging.

DaSean Hill was one of those babies. Today, he proudly prepares to tie his kwondo uniform.

“When he was a baby, DaSean Hill participated in the HUSOFT study,” asserts his mother, Tashonda Crenshaw. “He’s my only child; as a mother, I honestly feel this medicine has kept him healthy.”

“DaSean has never had a crisis,” asserts his mother, Tashonda Crenshaw. “And he’s on a normal growth path. I honestly feel this medicine has kept him from developing these problems.”

Initially, Tashonda was hesitant to put her baby in the HUSOFT study. “He’s my only child; as a mother, you are frightened to think of giving your baby anything that hasn’t been thoroughly tested already for years and years,” she says. “But he’s done so well.

Results of the HUSOFT trial showed that infants with sickle cell anemia not only tolerated hydroxyurea, but could benefit from it just as older children and adults do,” says Winfred Wang, MD, director of the St. Jude Comprehensive Sickle Cell Center. “In addition, these infants may have had less organ damage and better growth than untreated patients.”

Hydroxyurea is an affordable medication that could help babies with sickle cell disease in lower-income countries around the world. The drug is already given free of cost by the Brazilian government to adults and children older than 3. The St. Jude study may eventually lead to infants in Brazil and in other countries receiving hydroxyurea as well.

Hankins feels that could certainly be the case. “If the BABY HUG study shows that hydroxyurea prevents damage to the organs—the spleen, the brain (strokes or other lesions), the kidneys—then that’s going to revolutionize the way we treat patients with sickle cell anemia,” she says. “From a very early age, everybody would get hydroxyurea and keep taking it.”

And that could quite possibly lead to a world in which all babies with sickle cell disease have a much better chance at growing up to lead normal, pain-free lives. What better way for St. Jude researchers to give babies a HUG that lasts?
When I was 10 years old, I was dedicated to acting, and I knew that dedication could help me succeed in my dream of performing in front of audiences. And it did—helping me land my first Broadway role as “July” in *Annie*.

I also learned an important lesson about helping others when my mom told me she was going to take a portion of my earnings from *Annie* and donate it to St. Jude Children’s Research Hospital. She loves the hospital and felt that when you are given an opportunity, you should always give back.

By the time I was 15, I had earned a role on the daytime show *As the World Turns*. I left the show in 1989 and returned to it in 1990. Inspired by the lesson of helping others that my mother had taught me, I vowed upon my return to the world of daytime television that I would do everything I could to involve that community with St. Jude.

I knocked on the door of the hospital’s fund-raising offices in New York, introduced myself and asked what I could do to help. The result is the Daytime Television Salutes St. Jude benefit. For the past 11 years, it has afforded daytime television fans the opportunity to meet their favorite personalities and to keep the research, treatment and hope burning for the children of St. Jude.

The support from the fans has been tremendous. I am in awe of how they have accepted St. Jude and made it their own, but I knew the compassion that was in their hearts. The growth of the hospital and the research discoveries that are made there are a testament to them and to all supporters of St. Jude.

This year I am shifting my focus to work more closely with the hospital’s Professional Advisory Board (PAB), to further engage corporate supporters and develop new opportunities for the hospital. The PAB is a group of volunteers from the business and entertainment worlds who help advise ALSAC, the hospital’s fund-raising arm.

When you are blessed with healthy children, you realize that every day is a gift, especially when you see what the children and families at St. Jude must endure; you see how parents are challenged and the obstacles they must overcome. For us to be able to make it even a little bit easier is worth every second.

Since the day my mother educated me about St. Jude, I have continued to dedicate myself to this cause. Supporting St. Jude is not a responsibility for me. It is a necessity. I encourage you to join in and dedicate yourself to helping these families so that one day, no parent will ever have to hear those terrible words: “Your child has cancer.”

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**Dedication to the Dream**

“Supporting St. Jude is not a responsibility for me. It is a necessity.”

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