

ST. JUDE

inspire



WINTER 2021

FAMILY

graduation

world survivors

dreams

Decades of Progress

Nearly 60 years of survivor stories provide hope for tomorrow's kids

LEGACY BEAD PROGRAM

1957

strength and perseverance

life. Love

ST. JUDE

FIND A CURE

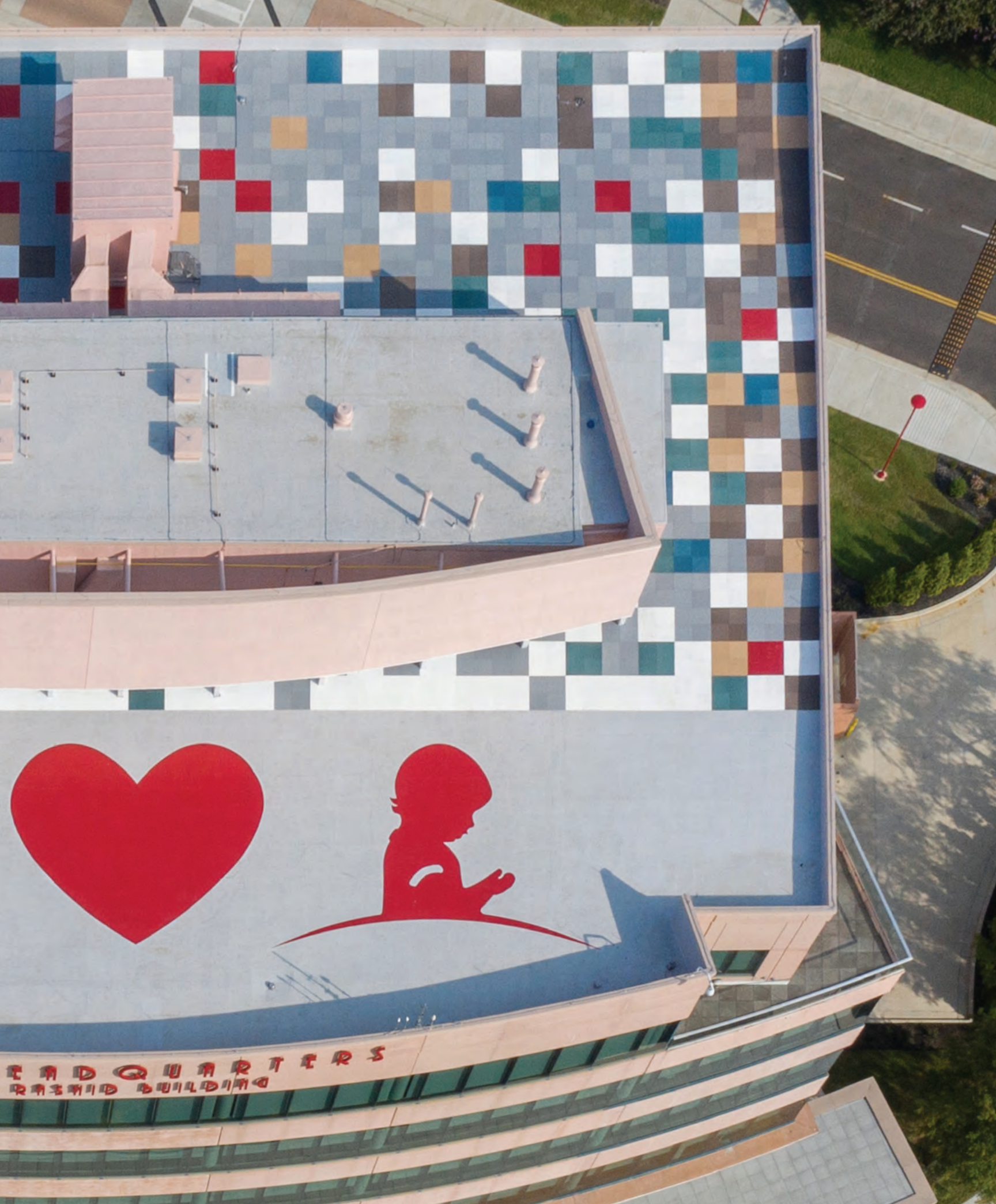
brave and beautiful



We

Love from above

Fly over the St. Jude Children's Research Hospital campus in Memphis and you'll get a strong sense of how we feel about this special place Danny Thomas founded in 1962. You could say we shout it from the rooftops.



END QUARTERS
END QUARTERS

CONTENTS



PAGE

08

Decades of Progress

The hope for an end to childhood cancer is borne out in the stories of our remarkable patients, from Dwight Tosh, the 17th patient admitted to St. Jude Children's Research Hospital, to a 3-year-old affectionately known as 'Pops' who celebrated his No More Chemo Party just months ago.



- 05 Domino's pledges \$100 million to St. Jude
- 07 A COVID-19 breakthrough
- 24 Addressing the ethics of sickle cell disease
- 26 An historic Nobel Prize with ties to St. Jude
- 28 Kindness prevails in a pandemic
- 30 Budding cooks to follow

About the Cover



Two things I love – St. Jude and art – came together when I was asked to illustrate the cover story on the progress represented by decades of St. Jude survivors. When I saw The St. Jude Tree of Life, the amazing work of a recent patient, Victoria, right away I pictured that tree filled with milestones that childhood cancer survivors – me, Victoria, thousands of us – can't take for granted.

This adaptation grows from Victoria's tree (page 20). Every milestone represents the hope and healing St. Jude has provided for decades now. Victoria says the long branches are all the departments and facilities, the little branches are the doctors, nurses and donors, and the leaves on the limbs represent patients saved by St. Jude.

We haven't forgotten those children who didn't survive. They're represented by falling leaves in Victoria's painting, and by the butterflies I added to the finished piece. I hope you'll take to heart what this cover represents. St. Jude began as the seed of an idea that has taken root and decades later something mighty has grown.

Tayde Cruz Dodds is an ALSAC employee and three-time cancer survivor.



You can help ensure families never receive a bill from St. Jude for treatment, travel, housing or food. stjude.org/donate

ALSAC

**President and Chief
Executive Officer**

Richard C. Shadyac Jr.

**Chief Marketing and
Experience Officer**

Emily Callahan

Executive Editor

Louis Graham

Managing Editors

Danny Bowen

Sara Clarke-Lopez

Copy Editor

Richard Alley

Design and Production

Luke Cravens

Tayde Cruz Dodds

Shannon Maltby

Ken Patrick

Michael Rowland

Jason Viera

Writers

Thomas Charlier

Kelly Cox

Grace Korzekwa Evans

Betsy Taylor

David Williams

Photography

Nikki Boertman

Mike Brown

Carlos Lopez

Dan Perriguet

*Special thanks to St. Jude President and
CEO James R. Downing, M.D., and St. Jude
Communications and Public Relations.*

St. Jude Contributors

Peter Barta

Seth Dixon

Liza-Marie Johnson, M.D., M.P.H., M.S.B.

Mike O'Kelly

Jere Parobek

Justin Veneman



ALSAC • DANNY THOMAS, FOUNDER



Danny Thomas, our founder and my personal hero, once said: “If we built this whole place and saved one child’s life, it would be worth it.” Decades of discoveries and scientific breakthroughs later, we’ve found ways to save the many — four in five children with cancer survive today in the U.S. — but we’re still trying to save the one.

We’re still trying to save the precious life that slips from our grasp. That’s what I’d like for you to keep in mind as you read this special issue filled with remarkable stories of St. Jude survivors.

Let’s celebrate the story of Dwight Tosh, patient 17, who was carried through the doors when St. Jude had been open just 78 days. He’s still living an inspired life of service as an Arkansas state representative after a long career in law enforcement. Or Ramón Hernández, a boy of 6 from Mexico, who wasn’t just treated for acute lymphoblastic leukemia at St. Jude, but was also tutored in English; today, he works for the Department of Cultural Affairs at the Consulate General of Mexico in Los Angeles. Or more recent patients like Victoria, who tells her St. Jude story through art (see page 20) that is brightly colored and filled with hope — just like the place that saved her life.

But let’s remember those patients we still aren’t saving — patients like my friend Corbin.

He passed away recently at the age of 18, and he was remarkable. I wish you’d known him. It’s no stretch to say he was a hero to all of us at ALSAC. That’s what our patients are to us. We watched him grow up, from precious child to precocious teenager, coping with cancer four times — *four times* — in his tragically short life.

Let me tell you about Corbin.

(continued on page 4)

(continued from page 3)



“It’s the best place that you never wanted to be.”

He was funny and wise. In 2018, he marked a year of being cancer-free by writing this on social media:

One year free. Would have been fourteen if it weren't for osteosarcoma having to ruin a perfectly fine decade and a half. But God is good, as always, as well as the outstanding staff at St. Jude. They restored my arm and my faith in humanity. Thank you all for your support on this journey. Cancer sucks, but there's a cure and it's coming fast. Also my surgeon is on crutches and if that's not ironic I don't know what is.

He was cool and creative. Corbin rocked. We know this at ALSAC because we saw him on stage with his band, performing at our 2018 National Training Meeting. One of the songs they played was a band original, written by Corbin. It was about life and cancer, and included a line about St. Jude:

It's the best place that you never wanted to be.

That was Corbin – lead singer, guitar player, incredible spirit and a dear friend who endured unthinkable hardships with such grace. Think of it: rhabdomyosarcoma at age 3, followed by 12 years of remission, then osteosarcoma at 15, remission again, followed by lymphoma and leukemia at 17.

At 18, knowing his time was limited, he did what he'd always done: He

made his days count. He spent time with friends and family. He enrolled in college and got a job in the field of law, this young man who dreamed of becoming a defense attorney. He visited his favorite place, the mountains of Colorado.

“He said he didn’t know how many days he had left, but he would live them with purpose,” his mom, Heather, said.

And so must we. Live with purpose. Work with purpose. Because for all the progress we’ve made on Danny’s dream, we’ve yet to fully realize it.

Saving four children in five with cancer means there’s one we’re still not saving.

The one.

And the one has a name, a personality, a spirit and so much potential. The one plays guitar or loves to paint. The one is a runner. The one is still learning to crawl.

This is why we do what we do. This is what drives the fundraising and the research. This is why you support us every step of the way. Because we’re on one of the great missions in human history. We’re not there yet, but we’ll make it. Because we have to.

For Corbin, and for all the ones who slip too soon from our grasp.

Richard C. Shadyac Jr.

President and Chief Executive Officer, ALSAC

 @RickShadyac

RITCH ALLISON, DOMINO'S PIZZA CEO:

“WE WANTED TO
DO SOMETHING BIG
AND BOLD”



Ritch Allison, CEO of Domino's Pizza, a longtime partner of St. Jude Children's Research Hospital, discussed his company's pledge to raise \$100 million over 10 years – the largest commitment ever made to St. Jude – and how philanthropy and corporate social responsibility mesh with the business goals of the world's largest pizza company.

Since Domino's already has raised more than \$73 million for St. Jude, what prompted the commitment to pledge \$100 million more?

RA: We had recently completed our previous commitment, which went to fund the events center there on campus. We were trying to think through what the next commitment would be for us. We wanted to do something big and bold, and certainly larger than the previous commitment we had made because we have a thriving business that is quite a bit larger than it was when we made that last commitment. And we wanted also to think about a time frame that was longer-term.

I had a conversation with Rick Shadyac to talk a bit about what some of the needs were on campus. Rick



St. Jude patient Serenity has a blast honing her pizza-making skills during an event at the Domino's Event Center in September 2019. Domino's named St. Jude its national charity partner in 2004. Since then, it has raised more than \$73 million for the kids of St. Jude.

spoke of the patient family-housing facility, which will now be called The Domino's Village, of course. And those two things just came together very nicely. It was a facility that was going to have a price tag somewhere in the neighborhood of \$100 million. We felt like we were at a scale in our business that with the St. Jude *Thanks and Giving*® campaign, and the other ways that we raise money through our franchisees and customers, that about \$10 million dollars a year was probably a reasonable run rate for us.

And so with all those things we just kind of landed on a 10-year, \$100 million commitment with the purpose of funding that patient housing facility.

Domino's made St. Jude its national charity partner back in 2004 based on a vote of franchisees. What was it about St. Jude that guided this choice?

RA: I think there are a couple of things. One is just the mission of St. Jude and what they do for sick children and the fact that there are so many great things around it: that St. Jude doesn't charge the patients and their families for their care, that they publish the research that they do rather than trying to profit from it. St. Jude publishes that and allows other folks around the world who are serving children to use the knowledge and the learning that is developed there. The fact that St. Jude draws from all 50 states and from many countries around the world.

When we thought about what could make sense in terms of a partnership, there were just so many dimensions of the St. Jude mission that we felt lined up very nicely with our business and would be something that our franchisees and our customers could get really excited about supporting.

Based on global retail sales, Domino's is the largest pizza company in the world. How does philanthropy fit within your business goals?

RA: As the stewards of a very profitable and growing business, I think we have a responsibility to give back to the communities that we serve, and while St. Jude is located in one city and one state, it serves children from communities all over the country. So, in my mind, that lines up very nicely against our goal of giving back to the communities that support us by buying pizza.

A number of surveys have shown that young people, particularly millennials, place a high importance on corporate social responsibility when choosing brands. How well positioned is Domino's to take advantage of this trend?

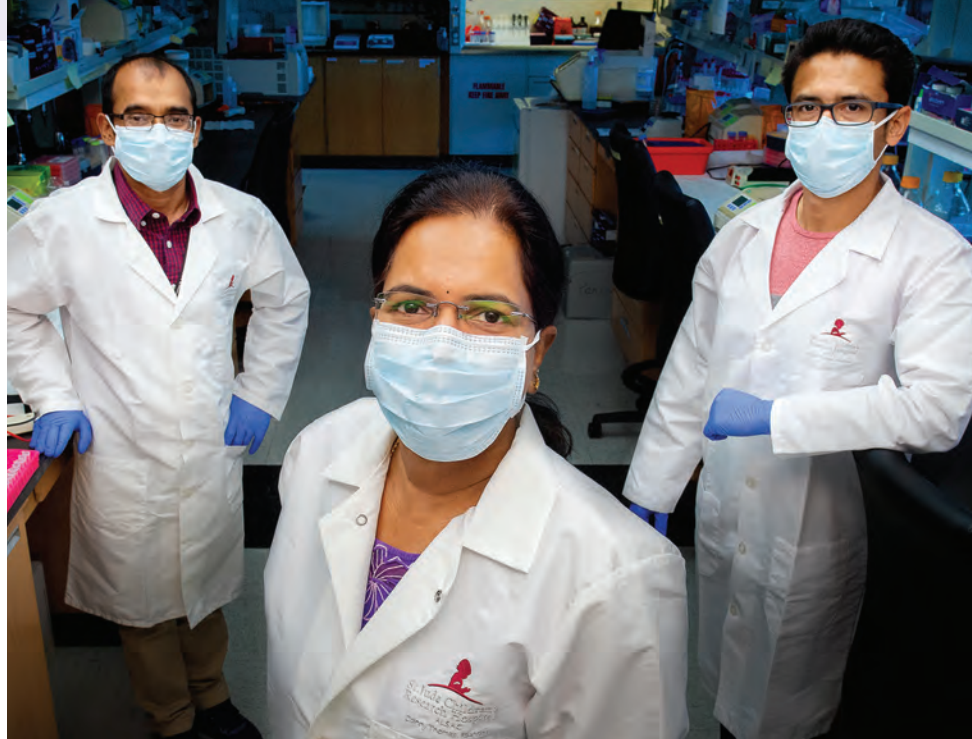
RA: I think we are well positioned. In addition to the work that we do with St. Jude, we and our franchisees do a significant amount of work in the local communities that we serve around the country.

Here in Ann Arbor (Michigan, Domino's headquarters), we support a number of local nonprofits, as well. We've found a way over time to create opportunities not only to contribute financially in the communities we live and work in, but also through our time and our talents.

In honor of the \$100 million pledge, St. Jude will be naming a 140-unit housing facility now under construction "The Domino's Village." What else can we expect to see in the future resulting from this partnership?

RA: There are other things we've done over the years, as well. We've lent some of our technical expertise to Rick and the ALSAC team over time as they've worked to optimize their digital presence, which is a big source of how they drive giving. On many occasions, our local franchisees there in Memphis have contributed food, sent pizza over to kids and their families and whatnot.

It is a broader partnership than just building a building. And I'm sure we'll find other ways to work together over the course of the coming years.



IN THE LAB, ST. JUDE RESEARCHERS UNCOVER ORIGINS OF DEADLY INFLAMMATION CAUSED BY THE NOVEL CORONAVIRUS

NEW STUDY IDENTIFIES POTENTIAL TREATMENT STRATEGY USING COMBINATION OF EXISTING DRUGS THAT APPEAR TO DISRUPT DEADLY PROCESS

BY THOMAS CHARLIER · ALSAC

Amid a deadly surge in the COVID-19 pandemic in late 2020, scientists at St. Jude Children's Research Hospital announced findings that point to promising new therapies aimed at preventing many of the life-threatening complications of the disease.

A team led by Thirumala-Devi Kanneganti, Ph.D., vice chair of the St. Jude Department of Immunology, identified a previously unknown interaction between two messenger proteins that can unleash a cascade of inflammatory cell death, leading to tissue damage and multiple organ failure. The team also reported that two existing drugs appear to disrupt this deadly process. The study, published online in the journal *Cell*,

came as researchers around the globe raced to develop therapies and vaccines to staunch a pandemic that over the past year has killed or sickened millions of people worldwide. With effective treatment options limited, doctors often have had to rely on supportive care, including supplemental oxygen and mechanical breathing assistance, in their efforts to save patients.

"Understanding the pathways and mechanism driving this inflammation is critical to develop effective treatment strategies," said Kanneganti, who was corresponding author of the study. "This research provides that understanding."

The work by Kanneganti's team focused on cytokines, tiny proteins

secreted primarily by immune cells. Infections involving SARS-CoV-2 – the virus that causes COVID-19 – can lead to increased blood levels of cytokines. These proteins sometimes cause inflammation, and when they flood the bloodstream in dramatically increased levels, lead to what researchers call a "cytokine storm." But the exact pathways initiating the cytokine storms and subsequent inflammation have remained a mystery.

To find them, Kanneganti and her team examined the cytokines most often present in elevated levels in COVID-19 patients. After finding that no single cytokine caused cell death, the scientists tested 28 combinations of the proteins and discovered that just one pair, working together, did induce inflammation and tissue damage mirroring the symptoms of COVID-19. Researchers further concluded that existing drugs used to treat such inflammatory diseases as Crohn's disease and colitis prevented COVID-19 complications in laboratory models.


"The results also suggest that therapies that target this cytokine combination are candidates for rapid clinical trials for treatment of not only COVID-19, but several other often fatal disorders associated with cytokine storm," Kanneganti said.

The study's co-first authors are Rajendra Karki, Ph.D., and Bhesh Raj Sharman, Ph.D., of the Kanneganti laboratory.

The research was supported in part by a grant from the National Institutes of Health (NIH); and ALSAC, the fundraising and awareness organization for St. Jude.



Studies like this are made possible by generous supporters like you. stjude.org/donate

A close-up portrait of an older man with white hair and glasses, smiling slightly. He is wearing a dark blue suit jacket over a light blue button-down shirt. A small yellow pin is visible on his lapel. The background is a blurred brick wall.

Childhood cancer was akin to a death sentence when Danny Thomas first conceived of St. Jude Children's Research Hospital. Patients like Dwight Tosh – and thousands more to follow – are a testament to the progress made toward Danny's dream that no child should die in the dawn of life.

'YOU'RE THE REASON I BUILT THIS HOSPITAL'

BY DAVID WILLIAMS · ALSAC

WITH CONTRIBUTIONS FROM THOMAS CHARLIER, KELLY COX AND BETSY TAYLOR

The boy was 13. He was country and talked with a drawl. He was tall for his age, and stout, and that was handy on the basketball court. Coach put him under the basket so he could grab rebounds, but he could handle the ball like a guard, too. And man, he loved to play.

"I was a really good ballplayer, not to brag on myself," Dwight Tosh said, decades later, remembering those days when the world was no bigger than a basketball, and every dream in reach. "Had it all going my way."

This was in northeast Arkansas, 1962. A time of party lines, not cell phones. A time when a drive into Jonesboro, with a population of little more than 20,000 at the time, was like a trip to the big city; Memphis might as well have been the moon.

A different time – including for medical science, which was losing four in five children diagnosed with cancer.

So when the Tosh boy started to get sick – his skin breaking out, a fever – doctors in Jonesboro were

puzzled. German measles? Scarlet fever? Then, as his condition only worsened, they decided he should be hospitalized – but for what, exactly?

"They could not get the fever down," Dwight said. "I mean, we're talking bumping 105, 106, even sometimes 107."

"Then a knot come up – a big ol' knot," he said, running a hand over his neck, feeling for the scar. "They did a biopsy of it and when it came back it was cancer."

It was Hodgkin lymphoma, a cancer that starts in the lymph system, which is part of the immune system. The survival rate in children at the time was 50 percent – a coin flip. But Dwight's case was advanced.

"They got every doctor in town, I understand, involved in my case. They didn't know what to do. They had totally run out of options," he said. "What my mom told me – I didn't know this at the time – they called the family in. I didn't know that until years later. They said, 'We've done all we know to do.'"

Dwight's mom asked what they meant, exactly.



FEBRUARY 4, 1962

St. Jude Children's Research Hospital opens before a crowd of 9,000 people. St. Jude founder Danny Thomas says, "If I were to die tomorrow, I would now know why I was born."

By the end of the first year, more than 30 St. Jude research projects have been instituted and four have been completed.

FEBRUARY 4, 1963

1966

A group of St. Jude patients are the first acute lymphoblastic leukemia (ALL) patients to be successfully taken off therapy, based on evidence that remission can be sustained.



“She said the doctors told her, ‘Maybe two weeks.’ You just need to get ready, prepare for the worst, is what she said they told her.”

The boy was 13, remember. He didn’t know cancer. He just wanted to be able to play basketball again – except he couldn’t stand on his own, much less walk. Had no appetite for food or life. “Looked like my skin,” he said, “was just stretched over my bones.”

And then?

“I remember them telling me something about a hospital that opened,” Dwight said. “They said, ‘We’re going to take you over to Memphis.’”

A 70-mile ambulance ride and he was carried on a stretcher through

You just think, if there’d been a delay of a few weeks opening those doors over there ... I didn’t have a few weeks.

Dwight Tosh

the doors of St. Jude Children’s Research Hospital.

It was April 22, 1962.

The hospital, named for the patron saint of hopeless causes and founded by entertainer Danny Thomas with the belief that “no child should die in the dawn of life,” had been open for all of 78 days.

Dwight Tosh was patient No. 17.

Recovery and Love

On a bright, summer morning more than half a century later, Dwight left his home outside Jonesboro for the two-hour drive to the state capitol in Little Rock. He’s a state representative – District 52, mostly rural, like the man himself – and had a couple of subcommittee meetings to attend.

He talked as he drove, past the town of Cash (Pop.: 342) and the Beebe water tower (“Home of the Badgers”), past John 3:16 Ministries and the Exit 48 Flea Market. He laughed a lot, teared up once and mostly marveled at his second-chance life.

He’s a husband of 50 years. A father of two and grandfather of four. A 37-year veteran of the Arkansas State Police, retiring as a captain. He’s one of the longest-surviving patients at St. Jude, a supporter

who has spoken about the cause to groups across the country. And he’s a mentor to more contemporary patients, like Hailey, patient No. 39,059, who had just turned 17 when she heard patient No. 17 was on campus, and just had to meet him.

Dwight was also the first participant in St. Jude LIFE, a research study that brings childhood cancer survivors back to St. Jude for regular adult screenings that help researchers learn more about the long-term effects of treatment.

It’s been a rich and full life, a big life – but he nearly died in its dawn.

“You just think, if there’d been a delay of a few weeks opening those doors over there,” Dwight said. “I didn’t have a few weeks.”

St. Jude in 1962 was a single building and Dwight remembers going by tunnel to another hospital, St. Joseph, for radiation and chemotherapy treatment. On a visit years later, with St. Joseph gone and St. Jude having grown into a sprawling, modern campus, Dwight found himself facing a hallway – the site, he was told, of the old tunnel.

“I’m going to tell you something,” he said, starting to tear up. “I stood there for a few minutes. I did. I looked down that hallway and I visualized it. I could actually stand

1968

St. Jude researchers find chemotherapy is effective against Ewing sarcoma, one of the most frequent malignant bone tumors in children. When combined with radiation, this treatment causes the survival rate to improve significantly.



St. Jude issues a statement that would have been impossible a decade earlier: “Leukemia can no longer be considered an incurable disease.”

1970

1972

St. Jude publishes a study showing a 50 percent survival rate for ALL, revolutionizing leukemia therapy worldwide.

50%

there and see that wheelchair and that nurse, and see my mom and us going down that tunnel. That was tough.”

There are happy memories, too. There was the day the Three Stooges came to visit the hospital. “Oh, that was pretty exciting,” he said. “They bounced around, you know, and we were all just laughing and they were cutting up.” Or the day a famous man he’d never heard of came by his room, sat on the side of the bed and said – the founder of St. Jude to its 17th patient, one D.T. to another – “You know, you’re the reason I built this hospital.”

Dwight’s mother was with him every moment at St. Jude. His father was mostly back home in Arkansas, working an extra shift at the shoe factory because while St. Jude treatment has always been no-cost to families, there were bills from Dwight’s treatment in Jonesboro.

Hard times, then – and they didn’t end with Dwight back home, successfully treated. Some parents balked at his return to school that fall, fearful their children would catch something from the sickly Tosh boy who’d been sent away to a new research hospital in Memphis.

“I couldn’t understand it at the time, but I understand it now,” Dwight said. “St. Jude had just come into existence. And it was called a research hospital.”

Research. Today, the word is synonymous with lifesaving treatments and technological advances like proton therapy, which can precisely target cancer cells while sparing healthy cells

St. Jude becomes the first institution to identify important subtypes of ALL, including T-cell leukemia. This finding, which proves ALL is not a single disease, leads to new research directions and improved treatment.

► 1975



You can help ensure families never receive a bill from St. Jude for treatment, travel, housing or food. stjude.org/donate



Dwight said he was on a mission – and still is – to prove what’s possible for a cancer survivor.

Then he turned serious and put it another way: “You know, a lot of people were walking away from me. She walked straight towards me.”

Joan said her mother talked to her about it – about how Dwight might get sick again, might not be able to have children, and if he did, would they be healthy?

“I’m sure everybody thought that,” Joan said. “Nobody knew any different. I said, ‘Well, it doesn’t matter.’ When you love, it doesn’t matter.”

In the Middle of Everything

Danny Thomas once said, “If we built this whole place and saved one child’s life, it would be worth it.”

He might have been talking about that other D.T. – Dwight Tosh, who became a state trooper despite doubts about his physical capabilities and questions about whether his cancer might return.

“Boy, I was determined, too,” he said. “I remember during recruit school – see, I had trouble walking. Even today, my arches in my feet are affected by it. I walk on my toes. I kind of have trouble running. I didn’t say anything. I was determined, whatever I had to do to compensate for it and overcome it. ... And I made it.

“I worked hard. I volunteered for stuff. I became a SWAT team leader. I became a hostage negotiator – I was trained by the FBI hostage negotiation team. ... I mean, whatever it was, I wanted to be in the middle of it.”

Dwight said he was on a mission – and still is – to prove what’s possible for a cancer survivor. He’s struck a blow for every kid who’s beaten cancer only to face the doubts some folks have about survivors. He’s lived a fulfilling life – family, career, second career, he’s had it all – and, at 72, he’s not done yet.

“I pinch myself,” he said now, laughing as he drove toward the state capitol, marveling at it all, at this life St. Jude made possible. “You’ve got to be kidding me.”

and is used to treat such cancers as Hodgkin lymphoma. Today, research rhymes with hope. But in 1962?

“That scared people,” Dwight said. “They just didn’t know, didn’t understand. They were just being protective parents.”

The school superintendent, though, said Dwight was welcome back and the school board agreed. So began Dwight’s high school experience. And the best part of all that? His high school sweetheart, Joan.

“My wife, that’s a remarkable lady right there,” he said. It was a recurring theme in Dwight’s conversations all the way to the state capitol and back. They’ve known each other nearly all their lives. They both lived in the country outside Jonesboro. Picked cotton together. Rode to church together.

“Ornery,” Joan said later in the day when asked to describe young Dwight. “You know how boys are always playing tricks.”

They went to school together, too, and by Joan’s sophomore and Dwight’s junior year, they began to date – the most beautiful girl in school, he said, and “here I am, an ol’ sickly boy who’s still not fully recovered.”

Clinicians develop a treatment that is effective for 55 percent of patients with neuroblastoma, the second most common solid tumor in children.

► **1977**



► **1984**

St. Jude establishes a clinic specifically for cancer survivors. Today, the After Completion of Therapy Clinic is the world’s largest long-term follow-up clinic for pediatric cancer patients.

19
67

AN OPEN DOOR

As the son of sharecroppers in the 1960s, 2-year-old Cedric faced nearly insurmountable obstacles when he developed kidney cancer. St. Jude was there to help save his life.

Desperately needing medical care for their ailing son, Cedric McCollins' parents first faced the problem of just getting through the front door, literally.

It was 1967, nearly three years after passage of the landmark 1964 Civil Rights Act, yet at the clinic nearest their rural Mississippi home they still had to enter through the door labeled Colored.

Local doctors referred him to St. Jude Children's Research Hospital in Memphis, the first fully integrated children's hospital in the South. Founder Danny Thomas had vowed that patients at St. Jude would receive care regardless of race, religion or ability to pay.

For Cedric, Danny's promise turned out to be lifesaving. Suffering from a type of kidney cancer, he underwent intense radiation, which doctors said offered his only hope.

Cedric not only survived, but thrived. He grew up to raise a family and pursue a career with the federal Centers for Disease Control and Prevention, helping others on their journeys of health.

When the odds were against Marget, her parents turned to St. Jude and the promising care it offered for children with neuroblastoma.

19
76

A PLACE OF HOPE

When she was just a year old, Marget Graham's appetite waned and her stomach swelled. A nurse took notice and asked a physician to do a checkup.

Fortunately for Marget, the nurse was her mother and the physician her father. His early exam revealed a tumor later determined to be neuroblastoma, a rare cancer that forms in nerve cells, generally found in the adrenal glands and almost exclusively afflicts children. Catching the tumor early, however, didn't solve the problem. The survival rate for neuroblastoma was a mere 10 percent and another doctor gave her parents the dire prognosis: The neuroblastoma tumor was inoperable.

But Marget's parents never gave up hope, never accepted the certainty their daughter would die. Her father studied the disease and was impressed with research protocols used at St. Jude. It was 1976, the year America celebrated its bicentennial and just

a year after St. Jude Children's Research Hospital opened its expansive ALSAC Tower, greatly expanding its scientific space. The couple inquired about having Marget treated there.

At St. Jude, Marget received treatment that not only saved her life, but propelled her on a mission to help others. She grew up to begin a career, get married and have children. She also became an active advocate and supporter of St. Jude, serving on the committee that puts on the St. Jude Fashion Show, an annual fundraiser held in Rosemont, Illinois.

In the decades since Marget was treated, advances at St. Jude have helped more and more kids survive neuroblastoma. During an interview more than 30 years later, Marget looked back on the treatment that saved her life. "Knowing that I'm a survivor of neuroblastoma, every day is special, every moment is special."

The new St. Jude brain tumor program begins accepting patients and launches a pilot study showing chemotherapy can be used to delay irradiation in infants and young children with brain tumors. This allows the children's brains more time to mature, reducing the side effects of treatment.

► 1985



1984

I t's never easy to be the parent of a cancer patient, but when her son was diagnosed with acute lymphoblastic leukemia (ALL) in 2003, and her daughter in 2008, Lisa Redmond was all too aware of what Javon and Jakayla would face.

She'd faced the same thing as a 5-year-old in 1984, in the same place: St. Jude Children's Research Hospital. She took comfort from the familiar surroundings and even some of the same nurses she remembered from her time. But even more comforting was how St. Jude had advanced over the decades, thanks to the research breakthroughs that have always been its hallmark.

The survival rate for ALL, just 4 percent when St. Jude opened its doors in 1962, had climbed past 50 percent by the time Lisa was diagnosed. By her children's time, the survival rate had reached 94 percent at St. Jude. But St. Jude has always been about more than medicine – or rather, it has always realized that experiencing moments of joy amid pain has healing qualities, too.

So it was for Lisa and her children that one of their greatest family memories of St. Jude was meeting then-First Lady Michelle Obama during her 2014 visit. For Lisa, it even almost made up for the greatest missed opportunity during her patient days – sleeping through a visit to her bedside by a man she so wanted to meet and thank, St. Jude founder Danny Thomas.

A HISTORY OF BREAKTHROUGHS

Lisa, Javon and Jakayla experienced the same diagnosis, decades apart. St. Jude cured all three of them.

19
8719
91

A FAMILY OF SURVIVORS

For Joel and Lindsey, St. Jude was a place that not only cured them, but introduced them to friends they would cherish for a lifetime, including each other.

It's a story of love and survivorship and St. Jude. It's a boy-meets-girl story, with complications. Because what love story for the ages ever came off without some complications?

And so: Boy gets cancer – that's Joel Alsup, who arrived at St. Jude as a 7-year-old in 1987, diagnosed with osteosarcoma, which would take his right arm. Girl gets cancer, too – that's Lindsey Wilkerson, diagnosed with acute lymphoblastic leukemia as a 10-year-old in 1991.

When they first meet – at a 1993 St. Jude fundraiser – she has an instant crush. He's in awe and unable to speak. Clearly, this love story will take some time. But time's something they have, thanks to St. Jude. They have their whole lives ahead of them.

So their paths continue to cross through high school, they lose contact during the college years and then reunite – coincidentally, but really inevitably – when Lindsey interviews at ALSAC, the fundraising and awareness organization for St. Jude. Joel already works there, and they become co-workers in 2004. But that love story for the ages? That has to wait a few years, because Lindsey had married in 2003, and would become a mom.

Slow-forward to 2016. These long-time friends find themselves single and Joel is feeling brave. "I'm like, I have to speak up at some point," he said. "I've been impressed by her, and really liked her since she was 12 years old."

Lindsey: "That's when he said he loved me."

They were married in 2018, and rarely has the *here* in "we are gathered here" meant so much. The ceremony was held in the Danny Thomas/ALSAC Pavilion, just steps

(continued on page 16)



1988

Children with ALL at St. Jude no longer receive chemotherapy treatment based on their size. Treatment is now based on each child's ability to break down drugs in the body.

St. Jude is the first to use gene marking to follow the course of bone marrow transplantation in children.

1990

1991

The survival rate for ALL reaches 73 percent.

73%

St. Jude establishes the International Outreach Program to extend its global impact.

1993

(continued from page 15)

from the facility's entrance, before family, friends and a special group of former patients and hospital staff you might call their St. Jude family.

"It's like the Royal Wedding of St. Jude," one friend and fellow St. Jude survivor said.

Like we said, this is a story of love and survivorship and St. Jude, with complications along the way. But the way Joel sees it, all of it had to happen for any of it to happen.

"Look at all I've been given and everything I have," he said. "Despite the fact I lost an arm, I have great friends because of this place. Now I have the girl I'm marrying because of this place."



19
96



A GLOBAL IMPACT

His journey from El Salvador to St. Jude has inspired Carlos to give back so the place that cured him can help save more children around the world.



Carlos Rodriguez makes a delivery and picks up the new mail, says hello to a colleague and asks about the family's new baby. It's fall 2019, months before the world, and Carlos' routine, would be changed forever by the pandemic.

Carlos drives the mail van for ALSAC, the fundraising and awareness organization for St. Jude Children's Research Hospital. His mind alights on the circumstances that brought him here. He thinks about the family his heart never really left behind in El Salvador. He

thinks about the kids at St. Jude because he was one — a little boy who went from making believe with the steering wheel of his family's bus to coping with cancer and chemo and English.

Carlos came to St. Jude in 1996 through a partnership with Benjamin Bloom Children's Hospital in San Salvador to help raise survival rates for Salvadoran kids with cancer. In 1993, when the partnership began, the estimated mortality rate for Salvadoran children with leukemia was greater than 90 percent.

1995

Cancer survival rates for Black children are shown to have reached parity with white children when treated with protocol-based therapy.



By opening vector production labs, St. Jude becomes one of the few centers in the world with a comprehensive cell and gene therapy program.

1996

1998

The survival rate for ALL reaches 80 percent.

80%

Ramón Hernández honors his heritage every day. That includes his time at St. Jude.

HONORING THE PAST

Carlos' first words in English were those of pain. He learned to tell his nurses, "My bones hurt" and "I feel nauseous." Knowing these words enabled the healing. Because once they knew, his nurses could make him feel better for his next cycle of chemo.

"We made it through," said Maria, his mom. "We had the support of the nurses and doctors at St. Jude, and my mom and prayers, and we made it through."

In the years since Carlos' treatment, St. Jude has bolstered its commitment to help children around the globe. In 2018, the specialty research hospital formally launched St. Jude Global, an effort to improve childhood cancer survival rates worldwide.

Through a partnership with the World Health Organization, St. Jude researchers have embarked on an ambitious goal: curing at least 60 percent of children with six of the most common kinds of cancer worldwide by 2030. It's a commitment to bring the dream of St. Jude founder Danny Thomas – that no child should die in the dawn of life – to children everywhere.



During the week of Mexican Independence Day, Ramón Hernández broadcasts a Facebook Live transmission of a mariachi band playing live from Jalisco, the home of mariachi and the place where Ramón was born.

Ramón works for the Department of Cultural Affairs at the Consulate General of Mexico in Los Angeles, helping to facilitate and advertise its many events and cultural celebrations, which now take place virtually.

He loves his job because it helps him feel connected to Mexico, where he hasn't been since 2001. That's when the red dots appeared all over his body – the alarm bells of leukemia.

He was 6 years old. At St. Jude, Ramón underwent treatment for acute lymphoblastic leukemia. He learned

English through tutoring provided by St. Jude and by watching kids' shows pertaining to his interests, such as dinosaurs. Movies like *The Land Before Time* and *Jurassic Park* ingrained in him a love for learning about civilizations and the people and creatures that came before us.

"At St. Jude, after a clinic visit, you get to go to the toy chest," said Ramón. "I would grab a dinosaur every time. So three years later, when my chemotherapy treatment was over, I had a whole box of dinosaurs. Every sort of dinosaur you can think of."

Ramón's appreciation of the past never left him and today the 26-year-old UCLA graduate balances his job at the Consulate with fundraising for St. Jude through St. Jude PLAY LIVE.

"What St. Jude gave me is something that, in a way, can never be repaid," said Ramón, "but fundraising is a way for me to give back to St. Jude. Giving back as much as I can and raising awareness as much as I can."

Ramón's career and fundraising have allowed him to weave the strands of his life and appreciate – even celebrate – his journey.



A St. Jude study identifies a genetic defect that can predispose pediatric leukemia patients to develop secondary brain tumors. Scientists develop strategies to prevent this occurrence.

1999

2001

The effect of radiation on a child's brain is measured for the first time in a pioneering study of pediatric brain tumor patients. The study enables doctors to plan radiation therapy so as to spare normal brain areas that could be negatively affected by radiation.



Scientists unveil a genetic screening technique that provides a new approach to diagnosing and treating ALL.

2002

20
05



AN UNRELENTING QUEST FOR IMPROVEMENT

When it came to Cale's treatment, doctors at St. Jude refused to accept the status quo. That can-do attitude has stuck with him his entire life.

Cale Zaugg teaches classes at a girls' school run by a Senegalese nonprofit, but jokes he's the school's itinerant repairman. When technology breaks, he fixes it. That's OK with Cale, because the time spent makes learning easier for the students.

Fifteen years after treatment for Hodgkin lymphoma, Cale still feels inspired by a creative, unrelenting approach to problem solving he calls "the St. Jude way."

In 2005, it ensured he received only the chemotherapy he needed – and no more than that – to cure his non-aggressive subtype of Hodgkin

lymphoma. While, in 1962, Dwight Tosh's doctors faced long-shot odds when it came to saving his life, Cale's doctors had the benefit of years of research behind them. While finding a cure for Cale, they were able to focus on minimizing the impacts of treatment, as well. This calibrated treatment, among the first of its kind, has helped kids achieve remission with minimal side effects.

"As a kid, I loved St. Jude because of the fun activities, the hopeful atmosphere and the kindness of the nurses and doctors," Cale said. "As an adult, I also love that the treatment itself was kind."

2013



Dwight (patient No. 17) and Hailey (No. 39,059) enjoy a visit to the St. Jude campus in 2019. Bonded through St. Jude, the two find inspiration in each others' stories.

CONNECTION THROUGH CARE

When 17-year-old Hailey Kennedy and her mom heard patient No. 17 was at St. Jude Children's Research Hospital that day, it felt like fate.

Imagine: a direct link to the first days of an institution that opened in 1962, more than a half-century before Hailey came through the same doors, seeking the same second chance.

"And I just had to meet you," said now-21-year-old Hailey, patient No. 39,059, reminiscing with Dwight

Researchers develop a laboratory model that closely mimics the eye cancer retinoblastoma, giving scientists a way to test new therapies for this disease in the lab.

2004

85%

2004

The survival rate for ALL reaches 85 percent.

Scientists discover a specific pattern of gene expression in leukemic cells is linked to their resistance to anti-leukemic drugs. This finding helps explain why standard therapies fail to cure about 20 percent of children with ALL.

2005

33

...it's not something I would change, not for the world. Because it made me who I am today.

Hailey

Tosh about their first meeting. "Meeting you and hearing your story, I felt inspired."

It was a chance encounter between patients, bonded by cancer and by St. Jude but separated in age by 51 years. From there, a friendship grew. Whenever Hailey, out of treatment and in college, returned to St. Jude for a checkup, Dwight and his wife, Joan, would make the drive to Memphis from their home in Arkansas to catch up.

Dwight represents the earliest days of a hospital built on hope, an era when four in five children with cancer died. Hailey's generation has seen that hope fulfilled – four in five children with cancer now survive, and thanks to decades of research and scientific breakthroughs, treatments today

are more effective, less debilitating and cause fewer after-effects. The two friends are generations – and 39,042 patient numbers – apart. And yet, as Hailey said, speaking for St. Jude patients everywhere, "I think we all share this same bond of hope and this struggle for survival."

She was diagnosed in 2013 with acute myeloid leukemia. She was 13 years old – just as Dwight had been. And also like him, she's joined the legion of patients who give back to St. Jude, singing its praises across the country – literally, in her case, performing the national anthem as a St. Jude survivor at a 2017 NFL game for the New England Patriots.

"It wasn't fun being a 13-year-old girl going through chemo treatment, losing my hair," she said. "But it's not something I would change, not for the world. Because it made me who I am today."

Dwight, as an elder statesman of St. Jude survivors, prides himself on mentoring and befriending younger patients and their families, on being a source of hope, a "living testament," he said, that a cancer patient can have a full life. He also talks, at 72, about a time when he'll need to "hand that torch off" to a new generation of former patients.

"And I think I know," he said, "the person to hand it off to."



2006

St. Jude reports a 94 percent survival rate for patients with ALL, using therapy that does not include radiation.

94%

Researchers discover previously unsuspected mutations that contribute to the formation of ALL. The study generates worldwide excitement because it demonstrates a practical approach to screening large numbers of genes for mutations, and has applications for both adult and pediatric cancers.

2007

2014



St. Jude not only helped cure Jordyn's cancer, but worked with her to help her return to the sport she loves.

A GOLD STANDARD FOR CARE

Jordyn was a 9-year-old gymnast with Olympic dreams. A four-time state champion with more than 90 medals to her name, she was committed to the hard work of training, and no stranger to pain. But resolve, courage and athleticism couldn't prepare her for what lay ahead. Just weeks after watching one of her heroes, Simone Biles, take gold at the 2014 World Championships, Jordyn was diagnosed with childhood cancer.

She was referred to St. Jude Children's Research Hospital, where survival rates are the world's best for the disease she faced. Importantly for Jordyn, St. Jude also gave her hope she would return to her sport.

But priority one was getting through two-and-a-half years of chemotherapy. Jordyn was enrolled in the Total 16 protocol for acute lymphoblastic leukemia, which would ultimately show improvements in relapse rates for high-risk patients.



"She's passionate about saying, 'Hey, this happened to me, but I was able to come back,'" said her mom.

Now 15, Jordyn is again flying high, and sticking the landing.

2016



but rather deeply thought out. The trunk, she said, represents St. Jude Children's Research Hospital, where she was treated with a technology unimaginable when the doors opened in 1962 – proton therapy – after undergoing two surgeries on a brain tumor called meningioma that's rare in children.



"The long branches," Victoria explained, "are all the departments, facilities and all the different parts of St. Jude. The little branches are all the doctors and nurses, and the donors, as well, who take care of St. Jude."

"Then all the leaves are the patients who are there. And if you look at it, there are some falling leaves. Those represent the patients who have passed away."

The painting is colorful, uplifting and filled with love – as sure a sign that it's a Victoria original as her printed name in the bottom, right-hand corner. It's also a powerful metaphor in the origin story of St. Jude. Think about it: The tree Victoria painted is the one Danny Thomas planted, all those decades ago, when he dreamed of a day when no child would die in the dawn of life.

AN ARTFUL APPROACH TO HEALING

Diagnosed with a brain tumor at 8, Victoria is an "old soul" whose compassion shows through her artwork.



One painting she dreamed – literally dreamed it: an angel who looked just like her, wearing a blue and gold dress. She woke up in her hospital bed and hurriedly sketched it out, capturing the image until she could get her art supplies and make a proper painting.

But Victoria's muse doesn't just reside in her subconscious and come out while she sleeps. It lives in the heart and soul, mind and imagination of this teenager whose paintings brim with a positivity that belies all she's been through.

Take the one she calls *The St. Jude Tree of Life*, which wasn't dreamed

St. Jude announces that, with effective personalized chemotherapy, cranial irradiation can be safely omitted from the treatment of children with ALL.

2009

2010

In partnership with the Washington University School of Medicine, St. Jude launches the Pediatric Cancer Genome Project. The project compares the complete normal and cancer genomes of 800 childhood cancer patients with some of the toughest and least understood pediatric cancers.

To speed progress against cancer and other diseases, the Pediatric Cancer Genome Project announces the largest-ever release of comprehensive human cancer genome data for free access by the global scientific community.

2012



Seldom has a revised diagnosis generated such relief. The parents of 1-year-old Bella initially were told the mass removed from their daughter's brain was an embryonal tumor with multilayered rosettes, or ETMR, which is aggressive and often fatal.

As they tried to absorb that devastating news in the busy lobby of a Mumbai, India, hospital, another family asked if they had heard of St. Jude Children's Research Hospital. Not only did St. Jude provide hope to families of children with life-threatening illnesses, the strangers said, but treatment at the U.S. hospital was provided free of charge. Bella's parents couldn't believe their ears.

Bella's situation grew more hopeful after subsequent reviews by St. Jude and another hospital determined she did not have ETMR, but instead had anaplastic ependymoma. By 2018, when Bella arrived at St. Jude, the diagnosis was generally survivable. She underwent treatment at the first and only proton therapy center dedicated solely to kids, which had opened at St. Jude less than three years earlier. She also received therapy to regain the speech she lost during her earlier surgery. Now 4, Bella is back at home in India, a healthy, happy little girl.

AN INTERNATIONAL REPUTATION

Bella's family was devastated after she was diagnosed with an aggressive brain tumor in Mumbai. St. Jude provided hope, and a cure.

2015

St. Jude opens the world's first proton therapy center dedicated solely to children with cancer.



Research led by St. Jude finds that deaths from late effects of childhood cancer treatment have declined in recent decades and survivors are living longer.

2016

2018

St. Jude expands its international reach by creating St. Jude Global, and announces a collaboration with the World Health Organization aimed at transforming cancer care worldwide by 2030.







2020

A PLACE OF CELEBRATION

St. Jude has always been known for offering hope, and that includes celebrating the milestones in each patient's journey, whether big or small.

Garl is the baby of the family, but he's known as "Pops" because he looks just like his grandfather.

When he was diagnosed with neuroblastoma, his mother could scarcely believe this was happening to her 3-year-old. His family's disbelief turned to relief as Pops was referred to St. Jude Children's Research Hospital, and treatment began to work.

Pops underwent surgery, proton therapy, antibody therapy and stem cell transplantation – advancements unimaginable when St. Jude opened in 1962. In August, Pops participated in a time-honored tradition enjoyed by many St. Jude patients before him: his No More Chemo party.

With confetti flying in the air, he celebrated the end of treatment, and a second chance at life.



You can help ensure families never receive a bill from St. Jude for treatment, travel, housing or food. stjude.org/donate

LET PEOPLE WITH SICKLE CELL DISEASE INFORM CLINICAL TRIAL COMMUNICATION

By Liza-Marie Johnson, M.D., M.P.H., M.S.B.

Assistant faculty member of the Oncology Department and consultant to the Bioethics Subcommittee at St. Jude Children's Research Hospital.

Even the best new treatments and potential cures for sickle cell disease mean little to patients if information about new therapies and research trials are poorly communicated. Although the only curative therapy is a bone marrow transplant, most patients with sickle cell disease lack suitable donors. Finding new treatments to cure sickle cell disease is a research priority not only at St. Jude, but also for the American Society of Hematology and National Institutes of Health (NIH).

ETHICAL CHALLENGES OF SICKLE CELL DISEASE CLINICAL TRIALS

Clinical trials of new methods of gene manipulation have begun in adults with sickle cell disease. As these gene-editing technologies are used, we're learning more about their safety, side effects and curative properties. The success of these smaller trials means opening research studies to more patients in order to

learn about the treatments' effectiveness over time. Although the initial trials are in adults, the goal is to treat children and young adult patients, ideally before they experience serious organ damage from sickle cell disease.

But there are ethical challenges unique to sickle cell disease, a disorder that mainly affects African Americans, a group historically mistreated and underrepresented in clinical research. To overcome potential mistrust of clinical research, to improve relationships with patients and researchers, and to understand the best way to engage with potential research participants, it's imperative to engage both patients and parents of children with sickle cell disease to understand their needs.

We need to increase awareness and education about clinical trials and let the patients and their families

To overcome potential mistrust of clinical research, to improve relationships with patients and researchers, and to understand the best way to engage with potential research participants, it's imperative to engage both patients and parents of children with sickle cell disease to understand their needs.

tell us how to better communicate with them. People with sickle cell disease have many questions about new medical treatments and the benefits of trying these therapies. Many individuals have questions about simply signing up for a clinical trial or a research study. We've formed a national working group to bridge that gap.

SCDGENE - INCREASING SICKLE CELL DISEASE AWARENESS AND ADVOCACY

The National Academies of Sciences, Engineering and Medicine recently outlined a plan to address sickle cell disease in the United States. An ad hoc committee was formed to examine the epidemiology, health outcomes, genetic implications and societal factors of sickle cell disease. Their publication, "Addressing sickle cell disease – a strategic plan and blueprint for action," outlines the challenges in an eight-fold strategy for those with sickle cell disease and sickle cell trait to live long, healthy, productive lives.

Two of the strategies are:

- *improve sickle cell disease awareness and strengthen advocacy efforts*
- *address barriers to accessing current and pipeline therapies for sickle cell disease*

These two strategies complement efforts we've begun with a national working group, SCDGENE, to learn more about the best way to communicate with sickle cell disease patients. SCDGENE, a group of experts in sickle cell disease, bioethics, gene editing, law and health communication, will work with a patient advisory council to advance these two strategies.

With new research studies in development, we want to learn more about the attitudes and concerns of sickle cell disease patients to help inform research to further meet the needs of those who may be eligible to participate in clinical trials.

Our findings, informed by two years of patient input, will guide clinicians and scientists, and their educational materials to help future patients make informed decisions about participating in clinical research.

We're excited and hopeful this effort will lead not only to increased participation in sickle cell disease treatments and therapies, but also to a blueprint for helping end the historical legacy of underrepresentation and mistreatment of minority patients in clinical research.

NOBEL LAUREATE EMMANUELLE CHARPENTIER'S MAJOR IMPACT ON SCIENCE AND MEDICINE

By Mike O'Kelly

Member of the Communications Department
at St. Jude Children's Research Hospital.

A world-renowned scientist who was named co-recipient of the Nobel Prize for Chemistry on October 7, 2020 has ties to St. Jude Children's Research Hospital.

French microbiologist Emmanuelle “Manue” Charpentier, Ph.D., and American biochemist Jennifer Doudna, Ph.D., received the prestigious award for their discovery of CRISPR-Cas9 and genome editing.

Charpentier worked as a postdoctoral fellow in the laboratory of Elaine Tuomanen, M.D., Infectious Diseases Chair, in the late 1990s, where signs of her dedication and curiosity were already evident.

“Independent is an understatement when describing Manue. Everyone knew she was going to be in the lab all the time because she wanted to get to that set goal,” said Tuomanen, who remains Charpentier’s friend and close colleague. “She often speaks about St. Jude and what she learned here – that her work would actually translate to something that could impact patients’ lives.”

Charpentier’s work in deciphering the molecular mechanisms of the bacterial CRISPR-Cas9 immune system and using it for genome editing has attracted

worldwide attention. CRISPR-Cas9, an acronym for “clustered regularly interspaced short palindromic repeats,” is a series of repeated DNA sequences in the genomes of bacteria that encode a defense system against viruses.

Collaborating with Doudna’s laboratory at the University of California, Berkeley, Charpentier showed CRISPR could be used to edit genomes, including human and animal genomes, with remarkable precision and efficiency. The discovery was listed as the 2015 Breakthrough of the Year by the journal *Science*.

Charpentier has received numerous international prizes and recognitions, including the Breakthrough Prize from Google and Facebook; the World Technology Award; Germany’s most prestigious research award, the Leibniz Prize; and inclusion on *TIME* magazine’s 2015 list of the world’s 100 most influential people.

Tuomanen has traveled to several award ceremonies around the globe with her mentee. The Nobel Prize ceremony was delayed due to the pandemic, but Tuomanen hopes to attend the 2021 event in Stockholm, Sweden.

"I'm so proud of her achievements, and we've dreamed of what it might be like if she won the Nobel," Tuomanen said. "She's been so gracious to include me in these honors."

Charpentier was a postdoctoral fellow in Tuomanen's laboratory at New York's Rockefeller University, where she studied pneumococcus because it is the most naturally, genetically malleable of the bacteria. When Tuomanen came to St. Jude in 1997, Charpentier joined her.

"St. Jude is where we had the first chance to look at a full bacterial genome at a time when nobody else could do that," Tuomanen said. "There were 2,000 genes in the pneumococcus and you could identify those and where they started and stopped, but there was all this other stuff all over the place in the bacterial genome that made no sense. It just looked like it was baggage."

After leaving St. Jude in 1999, Charpentier continued to focus on the "baggage," and eventually showed how bacteria accumulate genetic signatures of invading viruses as a system of immune memory. The conversion of that discovery into a programmable genome editing system has huge potential for gene therapy. Charpentier currently serves as scientific member and director of the Max Planck Institute for Infection Biology in Berlin and research leader for the Laboratory for Molecular Infection Medicine Sweden at Umea University.

"I think Manue took two things away from St. Jude. First, the contrast between different bacteria is a clue

“
*My wish is
that this
will provide
a positive
message to
the young
girls who
would like
to follow
the path of
science, and
to show them
that women
in science
can also have
an impact
through the
research
that they are
performing.*



Emmanuelle “Manue” Charpentier

to important biology and, second, a sense of mission,” Tuomanen said. “She’s attuned to the fact that making that extra step to do this kind of genetic engineering will help make the kids better. That’s what is most important to her.”

Shondra Pruett-Miller, Ph.D., director of the Center for Advanced Genome Engineering at St. Jude, employs CRISPR-Cas9 technology as a sort-of “molecular scissors” to make cuts in genomes. The cells’ natural pathways then repair those lesions, a process that helps researchers better understand specific mutations.

“CRISPR-Cas9 is a game-changing technology. It has allowed us to do things that will continue to have a major impact on the future of science and medicine,” Pruett-Miller said. “As a woman in the genome editing field, I am beyond ecstatic that these two talented female scientists are being recognized for their contributions to science and the world.”

The honor is the first Nobel Prize in Chemistry to be awarded without a male collaborator. Shortly after learning she and Doudna had received the honor, Charpentier reflected on the importance of the achievement for women in science.

“My wish is that this will provide a positive message to the young girls who would like to follow the path of science, and to show them that women in science can also have an impact through the research that they are performing,” Charpentier said during a phone interview with nobelprize.org.

We went looking for acts of kindness in the time of the coronavirus – and found them everywhere. People looking out for a neighbor or stranger. People putting the most vulnerable among us first. People making human connections, even in this time of social distancing. As St. Jude founder Danny Thomas said: “Success in life has nothing to do with what you gain in life or accomplish for yourself. It’s what you do for others.”

inspired by your **KINDness**



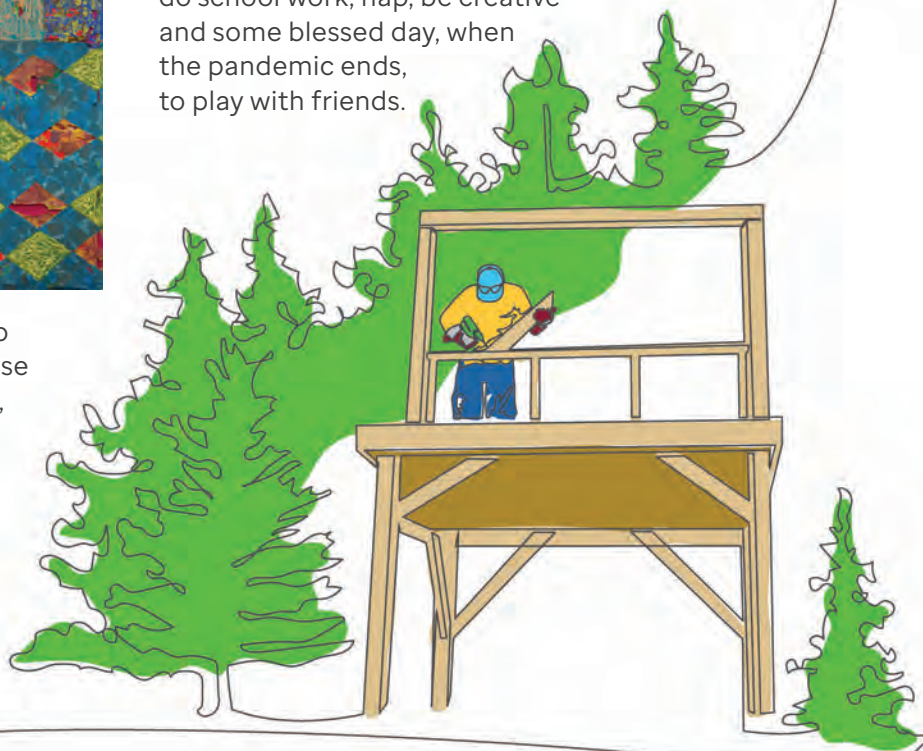
In New York, artist Derek Fordjour, who grew up in Memphis in the shadow of St. Jude, and whose work is increasingly popular with art collectors, donated a piece entitled *Rhythm & Blues*, an eye popping painting on newsprint. We can admit to getting a little breathless watching 12 online bidders vie for that work, with the winning bid of \$410,000 benefiting St. Jude.



Warner's diagnosis came in the middle of his family's move into a new home in Memphis. Working covertly, about 20 women organized an unpacking crew. With a team captain

in each room, they tackled the mammoth task of setting up the entire house in a single day so the family wouldn't have to lift a finger. It was like an HGTV reveal. Only it wasn't, because there was no one standing by to take credit; an act of true selflessness.

In Oklahoma, we found Jay Cobb, a 49-year-old civil engineer who knows what it's like to face a catastrophic disease. He was a 9-year-old with Burkitt lymphoma, a form of non-Hodgkin lymphoma, who got a second chance at St. Jude. So, four decades removed from his patient days, we were inspired to find Cobb and fellow volunteers erecting – in a 24-hour marathon – an amazing treehouse for a recent medulloblastoma patient at St. Jude. That treetop paradise is a place for young Nate to do school work, nap, be creative and some blessed day, when the pandemic ends, to play with friends.



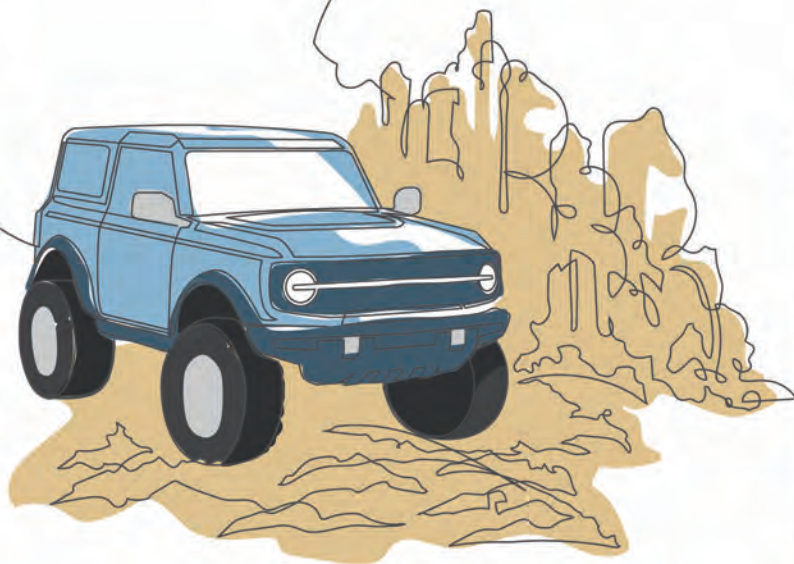


When Thatcher's classmates wondered about his absence from preschool, they naturally had questions. But how do you explain neuroblastoma – a very rare type of cancerous tumor – to a class of 4-year-olds? The answer is *Super Thatcher Fights Cancer!*, a children's book penned by two close family friends who are authors, with illustrations by a paraprofessional at Thatcher's school in Missouri.

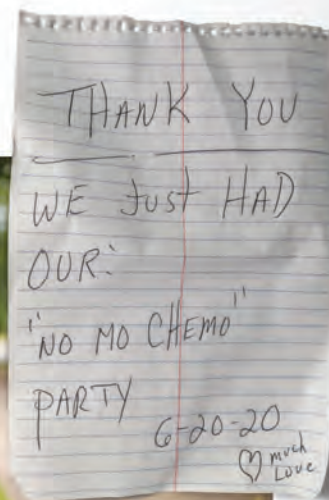
By no accident, Super Thatcher is a heroic little boy with cancer at St. Jude. He faces months of treatment and, sometimes, is too tired to do anything but sleep. Our superhero has a St. Jude therapy dog by his side when he gets an MRI, and he travels through the hospital in his favorite vehicle, a red wagon. And, like any superhero, Thatcher has a sidekick to support him: his little brother, Gideon.



In California, 2,000 miles from St. Jude, we found Hollis Belger, 16, still juggling a soccer ball to raise money for our mission. She started her Juggling for Jude effort when she was just 9, and she's raised nearly \$500,000 even as her parents are dealing with the economic impact of the pandemic on their small businesses.



In Detroit, St. Jude survivor Sarah and husband Calvin Ford (yes that Ford, the great-great grandson of Henry Ford) donated a limited edition 2021 Ford Bronco to St. Jude for auction. Lots of Ford fanatics wanted one – the first production run of 7,000 vehicles was sold out – so the bidding produced \$155,000 for the kids of St. Jude, 2.5 times the vehicle's sticker price.



And finally, to bring it home to Memphis, a 'We Are St. Jude' yard sign prompted this anonymous 12-word note from someone finishing up treatment: "Thank you. We just had our 'No Mo Chemo' party. Much love."

So, even in a pandemic, kindness prevails.

Read more stories like these at stjude.org/kindness

COOKS TO FOLLOW

JUNIOR EDITION

We teamed up with Allrecipes to showcase culinary stylings from an unexpected source: St. Jude patients. Allrecipes calls them “budding cooks to follow,” and we heartily agree.

REED

About me: I’m Reed, 12 years old, and from Illinois.

My story: I was just a normal kid doing things kids love to do. Then in spring 2019, I fell from a playground slide, had an extremely bad headache and was taken to the emergency room. I was diagnosed with medulloblastoma, a type of brain cancer. I went through four surgeries, then got transferred to St. Jude Children’s Research Hospital. During my 11 months there I had 30 rounds of proton radiation therapy and seven cycles of chemotherapy. I had to relearn how to walk, talk and use my right side again.

My cooking story: While at St. Jude, one of the things I looked forward to was a weekly cooking class at its Kay Kafe. I learned how to make healthy recipes and to try new foods. Cooking is also





great therapy – it forces me to use both hands.

Now I love to cook: I've cooked everything from meals to desserts and dog treats. Due to COVID-19, Carol Haynes, a local restaurant owner from my hometown, started doing a weekly online cooking class. My sister, Sloane, and I follow along and cook the meal. It is so much fun!

My favorite things to do: Play video games with my friends, cook, hang out with my sister and brothers, tell jokes and go golfing with Papa and Grandpa. I'm also a Boy Scout.

What I want to do when I grow up: Own a restaurant with my sister, Sloane.

If I could have a superpower: Super speed, like The Flash.

My closest thing to an actual superpower: Strength, which helped me to make it through my treatments. And hug power: My Mom says I give the best hugs.

My favorite dish: Homemade Chicago-style deep-dish pizza.

My favorite food from St. Jude: Sweet potato pie and enchiladas from Kay Kafe.

If I had to describe St. Jude in one word: Love.

My advice for kids going through what I did: It gets better – just hang in there. Make sure to keep laughing!



You can help ensure families never receive a bill from St. Jude for treatment, travel, housing or food. stjude.org/donate

CAROL HAYNES' DEEP-DISH PIZZA

Reed loves this recipe he learned from Carol Haynes, a local restaurant owner in his hometown.

For Sauce

1 28 oz. can crushed tomatoes
2 tbsp tomato paste
¼ cup finely chopped onion
1 clove garlic, minced
¼ tsp red pepper flakes
2 tsp dried oregano (leaf style, not ground)
2 tsp sugar
Salt & pepper
Olive oil

For Pizza

1 pkg. deep-dish pizza dough, thawed if frozen
Mozzarella cheese slices
Italian sausage
Grated Parmesan cheese
Butter

Make Sauce

In a small saucepan, add 2 tbsp olive oil. Add onion and sauté for a few minutes. Add minced garlic and be careful not to burn. Stir for about 30 seconds, then add red pepper, tomato paste and crushed tomatoes. Stir well over medium-low heat. When it starts to bubble, turn down to low. Add oregano, sugar, and salt and pepper. Stir and cook an additional 3 minutes. Makes enough for 2-3 pizzas.

Make Pizza

1. Preheat oven to 450°F.
2. Press pizza dough into a 10-inch deep-dish pizza pan or skillet, leaving an edge to contain all the toppings. Top with mozzarella.
3. Place sausage on top of cheese, pressing it flat. Spread sauce over sausage. Sprinkle with Parmesan. Drizzle edge of crust with a little melted butter.
4. Bake about 30 minutes, removing every 10 minutes to drizzle more butter on the crust.

Reed is the first in a series of three "Allrecipes Cooks to Follow" – watch for more recipes in upcoming editions of St. Jude Inspire magazine.

allrecipes!



gift guide



Give a gift
that gives
back from
the St. Jude
Gift Shop.



Cool Stitch Distressed
Red Cap #5852

\$24



Metallic
Blue 28 oz.
Water Bottle
#2045

\$20



Men's Adidas Lightweight
Quarter Zip Pullover #9209BLU

\$60



Women's Adidas Quarter Zip
Red Pullover #8354RED

\$60



Caleb Patient
Inspired Plush
Teddy Bear #2142

\$20



Shop online at
stjude.org/giftshopinspire

Your donor-advised fund can help save lives



St. Jude patient **Eleanor**
blood cancer

Your donor-advised fund can help sustain the lifesaving work of St. Jude Children's Research Hospital®.

Grant from an existing DAF, or better, establish a reoccurring grant to help save kids like Eleanor. Your generosity ensures that families never receive a bill for treatment, travel, housing or food—because all a family should worry about is helping their child live. Make an impact today by supporting our lifesaving mission: Finding cures. Saving children.®

stjude.org/DAF | (800) 910-3172





Finding cures. Saving children.
ALSAC • DANNY THOMAS, FOUNDER

501 St. Jude Place
Memphis, TN 38105

Nonprofit Org.
U.S. POSTAGE
PAID
St. Jude Children's
Research Hospital



FGL: 'Angels Among Us'

Country music duo Florida Georgia Line was honored with the Randy Owen Angels Among Us Award for their longstanding dedication to the kids of St. Jude. The duo and their wives brought extra shine and sound to St. Jude patient families during past visits, and they've shared the St. Jude mission with country music industry and fan communities alike.

The country music stars received this special designation during a livestream of the annual Country Cares for St. Jude Kids® event.

stjude.org/countrycares



St. Jude Inspire is printed on recycled paper

Photo by John Shearer Photography