



FOUR DIAMONDS CHILD **NOAH**
conquering acute lymphoblastic leukemia

FOUR  DIAMONDS
— Conquering Childhood Cancer —

IMPACT REPORT

2022–2023

CONQUERING
CHILDHOOD CANCER™



FOUR DIAMONDS
CHILD **HARMONY**
conquering B-cell acute
lymphoblastic leukemia

Four Diamonds' mission is to conquer childhood cancer by assisting kids being treated for cancer at Penn State Health Children's Hospital and their families through superior care, comprehensive support and innovative research.

Everything we do is FTK®
For The Kids®

Childhood cancer continues to be the **leading cause of death** by disease for kids in the U.S.

In the U.S. alone, **16,000** children will be diagnosed with cancer this year – **that's 43 kids every day.**

We are committed to **finding better, safer treatments and cures** to help kids everywhere.

Sources: American Cancer Society,
American Childhood Cancer Organization

Providing financial support to all Four Diamonds families.

Six-year-old Richie has always marched to the beat of his own drum, and his parents describe him as being wise beyond his age. But the one thing this ambitious and happy-go-lucky little boy couldn't see coming was a cancer diagnosis.

In the fall of 2022, Richie started vomiting in the mornings. His parents, Desiree and Robert, consulted with their pediatrician and began Richie on a high vitamin and electrolyte diet. But he was still getting sick, and it was happening more frequently. Finally, his family headed to the local emergency room, where he was treated for a viral infection and dehydration. Richie's pediatrician thought something else might be going on and ordered an MRI.

After that test, the family was immediately referred to the emergency room at Penn State Health Children's Hospital, where additional imaging was performed right away. As Richie and his parents waited for results in the early hours of the morning, they awoke to a room full of doctors who informed the family that Richie had cancer, specifically group 3 medulloblastoma. Richie had numerous tumors in his brain and on his spine.

Doctors recommended immediately removing the tumor that was causing Richie's hydrocephalus, the cause of his vomiting. The surgery was successful with 90% of the tumor removed, and Richie started his first of five rounds of chemotherapy to date. After the fifth round of chemotherapy, many of the tumors had

disappeared, no regrowth was found and all that remained were some nodules.

"We always talk about if we are going in the right direction," said Desiree. "Group 3 medulloblastoma is not a good diagnosis. For Richie to show progress with his tumors shrinking, we knew as parents that we were heading in the right direction."

The wisdom of Richie's doctors and parents led them to further treatments, including a stem cell transplant, to make sure the cancer is eliminated.

"When your child is being treated for cancer, Four Diamonds is there," said Desiree. "Knowing that if we need something, the Four Diamonds team is just an email or a phone call away gives us peace of mind."

When Richie was first diagnosed, Desiree made a promise to him to find out what was making him sick and make him better. Throughout his battle, Richie has been unable to walk and continues to use a wheelchair. However, there is hope: Richie recently walked about 20 feet for the first time in a long time. It was not easy for him, but when he did it, he looked at Desiree and said, "Thanks, Mommy."

Four Diamonds covers all medical expenses not paid by insurance for eligible families fighting cancer at Penn State Health Children's Hospital.

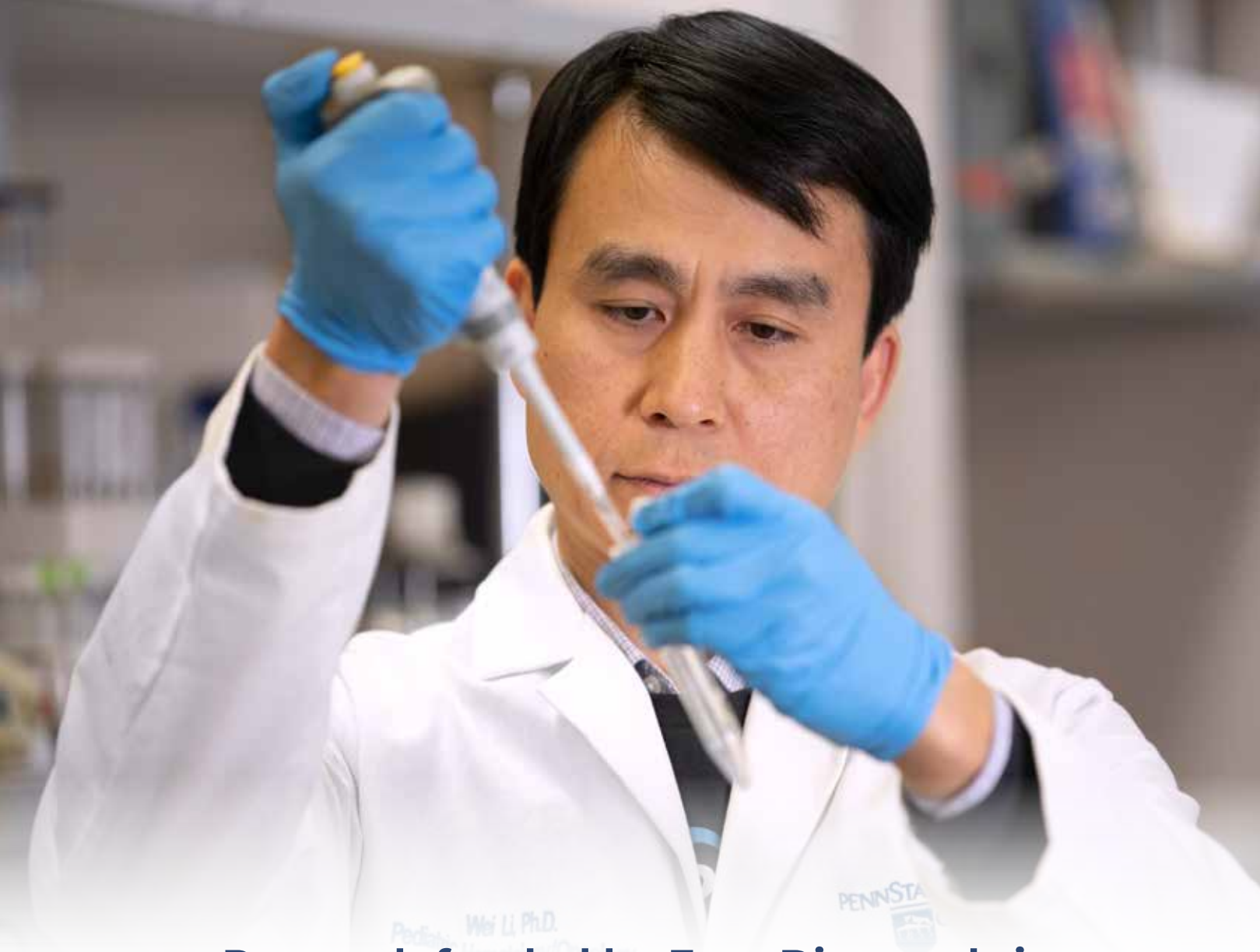


Scan to learn
more about
Richie



"The financial help Four Diamonds provides allows us to be dedicated parents and keep things as normal as possible. It's just amazing."

ROBERT, Four Diamonds dad to Richie



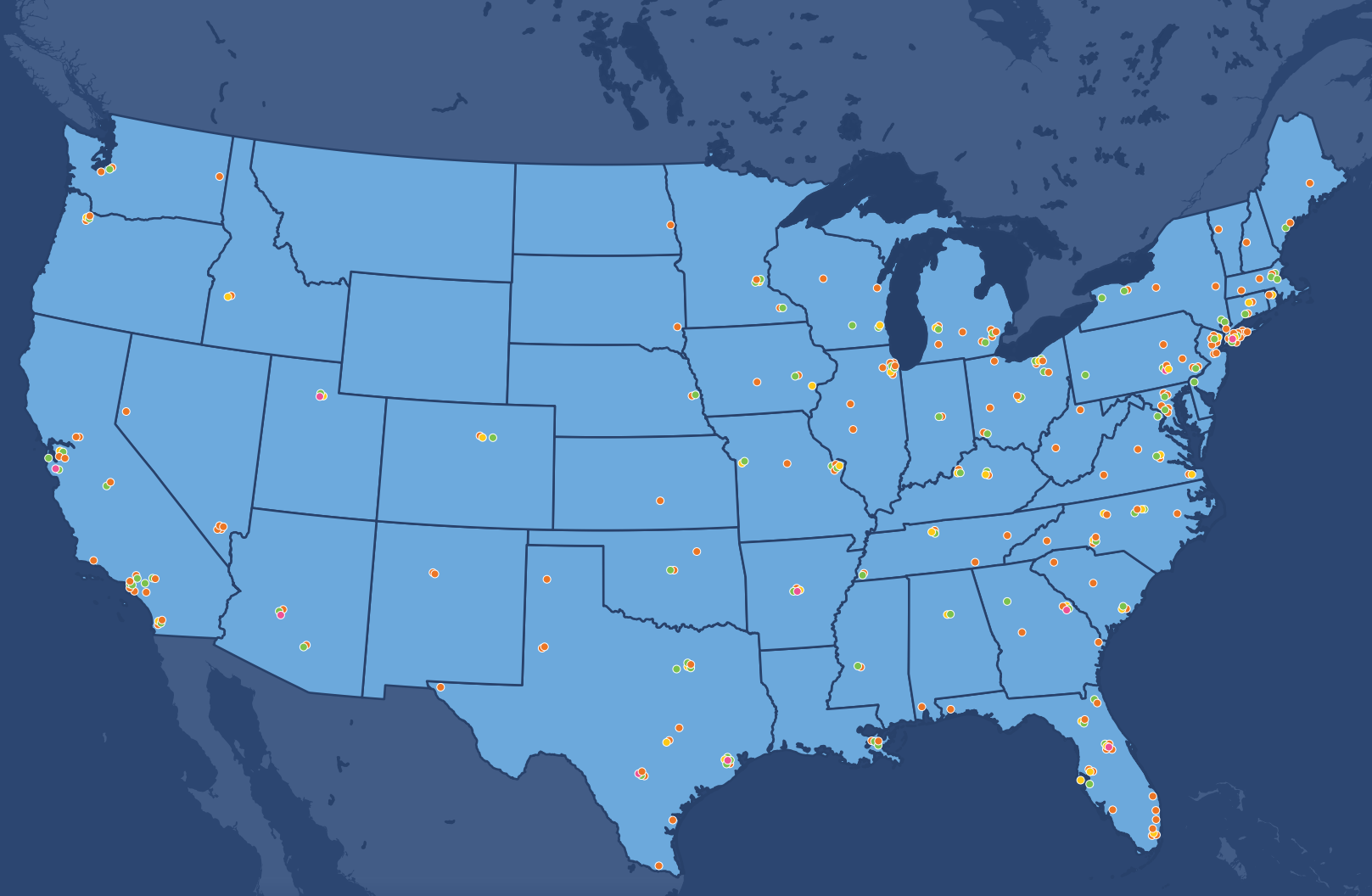
Research funded by Four Diamonds is giving hope to kids everywhere.

Major advances in treatments from decades of laboratory and clinical research have increased the survival rates for children fighting cancer to more than 85%. Despite that increase in survival rates, the reality is that more than 1,000 children in the U.S. die from cancer every year – more than any other disease.

Four Diamonds' care providers and researchers are driven by a deep desire to help all children and will keep searching for better treatments and cures until every child can survive and thrive.

Thanks to the support of our community, Four Diamonds continues to shape the future of medicine.

Gifts to Four Diamonds make it possible for us to attract the best researchers and scientists who are on a quest to figure out how cancer starts and how to destroy or reprogram cancer cells. Having a better understanding of how cancer works drives the discovery of new and more effective treatments which we can test in phase I, II and III clinical trials.



Four Diamonds drives the discovery of new and improved treatments and cures to benefit kids around the world. We support more than 90 pediatric cancer research professionals at Penn State Health Children's Hospital. All of the laboratories supported by Four Diamonds are making fundamental contributions to the ultimate goal of achieving a cure for all childhood cancers.

With membership in four leading national and international research consortiums, Penn State Health Children's Hospital offers hope to patients worldwide through state-of-the-art clinical trials for pediatric cancer patients who have relapsed or whose cancer isn't responding well to treatment.

Pediatric Oncology
Experimental Therapeutics
Investigators' Consortium
(POETIC)



locations in the U.S.

1

international location

Children's
Oncology Group
(COG)



locations in the U.S.

46

international locations

Beat
Childhood Cancer
(BCC)



locations in the U.S.

7

international locations

Pediatric Transplantation
& Cellular Therapy
Consortium
(PTCTC)



locations in the U.S.

21

international locations

Local Research. Global Impact.™

Four Diamonds' research team collaborates with doctors and scientists around the world to conquer childhood cancer. Here are just a few examples of our recently published research. These insights may have implications for a wide variety of childhood cancers, informing how we prevent and treat them.

Dr. Sinisa Dovat's discovery may explain racial disparities for Acute Lymphoblastic Leukemia (ALL)

Gene mutations linked to worse outcomes from leukemia in Hispanic and Latino children

Four Diamonds researcher Dr. Sinisa Dovat and his colleagues found that a combination of genetic mutations may explain the higher incidence of and poorer outcomes from ALL in Latino children. One of these mutations, they learned, leads to the overproduction of a certain protein that can cause resistance to chemotherapy in Latino children.

This knowledge led the team to propose a dual-drug investigative treatment strategy to simultaneously target the gene that carries the instructions for making the protein and inactivate any of the proteins already present in cancer cells. Their studies have laid the groundwork for a phase I clinical trial.

"We've identified a new approach for treating high-risk B-cell acute lymphoblastic leukemia," Dovat said. "Our work established the foundation for clinical testing of a new combination therapy that may address health disparities and benefit patients who suffer from pediatric leukemia."

Dr. Dovat's work on disparities in ALL outcomes for racial ethnic groups was cited as a key study driving progress against racial disparities in childhood cancer by the National Cancer Institute (NCI).

A new study by Dr. Yatin Vyas may lead the way to earlier detection or prevention of cancer

'Guardian of the Genome' and the 'WASp' team up to repair DNA damage

DNA replication and repair happens thousands of times a day in the human body. Most of the time, people do not notice when things go wrong in replication thanks to the work of Replication protein A (RPA), referred to as the "guardian of the genome."

A new study by Dr. Yatin Vyas, professor and chair of the Department of Pediatrics at Penn State College of Medicine and pediatrician-in-chief at Penn State Health Children's Hospital, showed that RPA works with an ally called the WAS protein (WASp) to prevent potential cancers from developing.

Vyas said it is possible that gene therapy or stem cell therapy could restore WASp function and may prevent further tumor growth and spread. He also mentioned the possibility of using WASp dysfunction as a biomarker for identifying patients at risk for autoimmune diseases and cancers.

"This complex we've discovered plays a critical role in preventing the development of cancers during DNA replication," said Vyas. "Translating this discovery from bench to bedside could mean that someday we have another tool for predicting and treating cancers and autoimmune diseases."

Researchers uncover genetic 'bridge' to leukemia progression

Dr. Suming Huang and his team's findings may pave the way for the creation of next-generation therapies

For cells to thrive, a complex network of three-dimensional structures assembles to read, copy and produce the genetic materials (DNA) needed for cellular function. Understanding how these structures form and what happens when things go wrong is an everyday endeavor for Dr. Suming Huang and his team of researchers.

Four Diamonds' support allows Dr. Huang and his team to study how certain hard-to-treat subtypes of acute myeloid leukemia (AML) develop as a result of alterations in cellular genome structures, called topologically associated domains (TADs).

"Understanding how genome structure contributes to leukemia development might someday allow us to identify therapeutic targets and develop next-generation therapies," said Huang.



Scan to read the full versions of these three stories

"We believe philanthropy can help our researchers discover and get treatments to patients faster. We are grateful to the generous donors who make this lifesaving work possible."

DR. YATIN VYAS, Chair of the Department of Pediatrics at Penn State Health Children's Hospital





Helping families navigate the emotional and mental challenges of having a child with cancer.

Four Diamonds funds the work of more than 30 specialty care providers to exclusively serve the physical, mental, emotional and spiritual needs of our childhood cancer patients and their families. The entire care team provides for these unique needs, in addition to providing expert treatment for childhood cancer. The team is comprised of:

- Music therapists
- Social workers
- Psychologist
- Pharmacist
- Clinical nutritionist
- Genetic counselor
- Art therapist
- Neuropsychologist
- Chaplain
- Child Life specialists
- Nurse specialists

Four Diamonds treats the disease, but also cares for the well-being of both the child and their family.

Four Diamonds child Keaghan uses art and music therapy as an escape from the world of childhood cancer.

Everybody in Keaghan's hometown knows her, not because of her battle with childhood cancer, but because of her outgoing and bubbly personality and her desire to know others. Even though her treatments have been difficult on her at times, Keaghan can still be found around the hospital with a smile on her face.

Keaghan was diagnosed with T-cell acute lymphoblastic leukemia (T-ALL) in December 2022. She is currently in remission, but still undergoing treatment to ensure all the cancer is gone. She and her family have benefitted from the comprehensive services Four Diamonds funding makes available for all families.

"Through Four Diamonds, we have gained a whole new family that we weren't expecting," said Keaghan's mom, Kaitland. "Our dedicated social worker put us in touch with another Four Diamonds family who lives down the road from us, and this showed us that with Four Diamonds you are never alone."

For Keaghan, art therapy and music therapy help her to keep going. Art is Keaghan's way of keeping herself grounded; it gives her a way to talk about her treatment and create things that help her feel connected to people in her life. It also allows her to escape and let her imagination go wild, so she is not stuck in the world of having cancer.

Keaghan is thankful for the time she has spent with Four Diamonds art therapist Alexis and music therapist Korrin. Kaitland described the relationship between Keaghan and Alexis as "besties." Throughout Keaghan's cancer journey, Korrin has been a steady support for her. She is able to calm Keaghan through difficult tests and procedures using therapeutic music techniques.



Scan to learn more about Keaghan



Four Diamonds directs your donations to make the greatest impact.

Your support changes lives.

Each spring, a robust grant process directs where all funds raised by Four Diamonds will be used in the next fiscal year to further our goal to conquer childhood cancer.

All requests are evaluated on the guidelines established in the original gift agreement by the co-founders of Four Diamonds.

Four Diamonds BY THE NUMBERS

\$23.5 million
raised in FY2023

88¢
of every dollar
supports our mission

**Tens of
Thousands**
of volunteers each year

4,800+
families helped
since 1972

100%
of medical
bills covered*

30+
specialty care
providers

90+
research
professionals

**For eligible
Four Diamonds families*

FOUR DIAMONDS CHILD **ADLEY**
conquering B-cell acute lymphoblastic leukemia



FOUR DIAMONDS FINANCIALS: JULY 2022 – JUNE 2023

Allocation of Funds:

Each spring, all available funds are allocated for the future fiscal year's use. Available funds for allocation in FY23 were comprised of all funds raised between July 1, 2021 – June 30, 2022, and all previously allocated funds that were unspent during that time frame.

Funding Priority 1:

To ensure every Four Diamonds child receives the highest quality of lifesaving childhood cancer care at Penn State Health Children's Hospital without ever seeing a bill for that care. This compassionate process relieves both the financial pressures and the burden of billing paperwork for all Four Diamonds families.

Funding Priority 2:

To ensure Four Diamonds children and their families are wrapped in comprehensive services. This includes providing access to top-notch specialists proven to enhance positive treatment outcomes, combined with support services to meet their physical, emotional, mental and spiritual needs.

Funding Priority 3:

To ensure innovative research projects have the funding they need to search for deeper understanding of why and how childhood cancer happens, and new ways it can be treated. Funds are also invested in endowments, which earn interest, creating a secondary, permanent funding stream for our ongoing research efforts in pursuit of a cure for all childhood cancers.

July 1, 2022 – June 30, 2023

Sources of Funds

THON™	\$	15,120,523.62
Mini-THON®	\$	6,213,734.72
Memorial Gifts	\$	57,710.00
Honorary Gifts	\$	19,669.38
Bequests	\$	469,850.18
Other	\$	1,087,438.87
Gifts Restricted to Endowments	\$	554,970.68
SUBTOTAL	\$	23,523,897.45
Investment Income	\$	6,011,727.65
TOTAL	\$	29,535,625.10

Uses of Funds

Funds allocated for use between July 1, 2022 – June 30, 2023

Available funds for allocation are comprised of all funds raised between July 1, 2021 – June 30, 2022, and all previously allocated funds that were unspent during that time frame.

Patient Care & Family Support

Patient Care	\$	4,154,476.72
Family Support	\$	1,167,406.13

Research

Research Grants	\$	175,000.00
Research Support	\$	5,255,634.98

Administrative

Administrative Development, Marketing and Administration	\$	3,553,574.67
Finance and Pediatrics Administrative Support	\$	327,112.74

Investments in Endowments

Donor Restricted	\$	554,970.68
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Investments in Strategic Research Initiatives

Four Diamonds Childhood Cancer Innovation Initiative	\$	13,604,041.38
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TOTAL	\$	28,792,217.30
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Our Partners In The Fight™

We are grateful for the continued commitment of the multitude of volunteers and supporters who power our fight to conquer childhood cancer.

We are a community. Whether your role is that of patient, survivor, family member, student, friend, donor, caregiver or administrator, we are **Partners In The Fight** to conquer childhood cancer.

FOUR DIAMONDS TEEN **CINDYALIZ**
conquering osteosarcoma



During fiscal year 2022-2023, **tens of thousands** of volunteers



contributed **5 million+** volunteer hours,



and they raised **\$23,523,897.45** For The Kids.®



Penn State Dance Marathon

Tucker Haas continued his 20-year journey with THON, dancing For The Kids in 2023.

Tucker Haas was two years old when he was diagnosed with rhabdomyosarcoma, a rare form of soft tissue cancer. He was introduced to Penn State as a Four Diamonds child when he was undergoing treatment, which began a 20-year journey with Penn State THON and the fraternity that became his adoptive family.

Today, Haas is a senior at Penn State, majoring in recreation, park and tourism management, and he is continuing his service to THON, the community, and most importantly, kids facing childhood cancer. He encourages other undergraduate students to pursue volunteer and service opportunities as often as they can.

As a student at Penn State, Tucker became a brother with the same leadership

development fraternity that “adopted” him as a Four Diamonds child. Through THON, Tucker has helped the fraternity adopt a new Four Diamonds child, Gus, who has a similar form of cancer that Tucker had as a child.

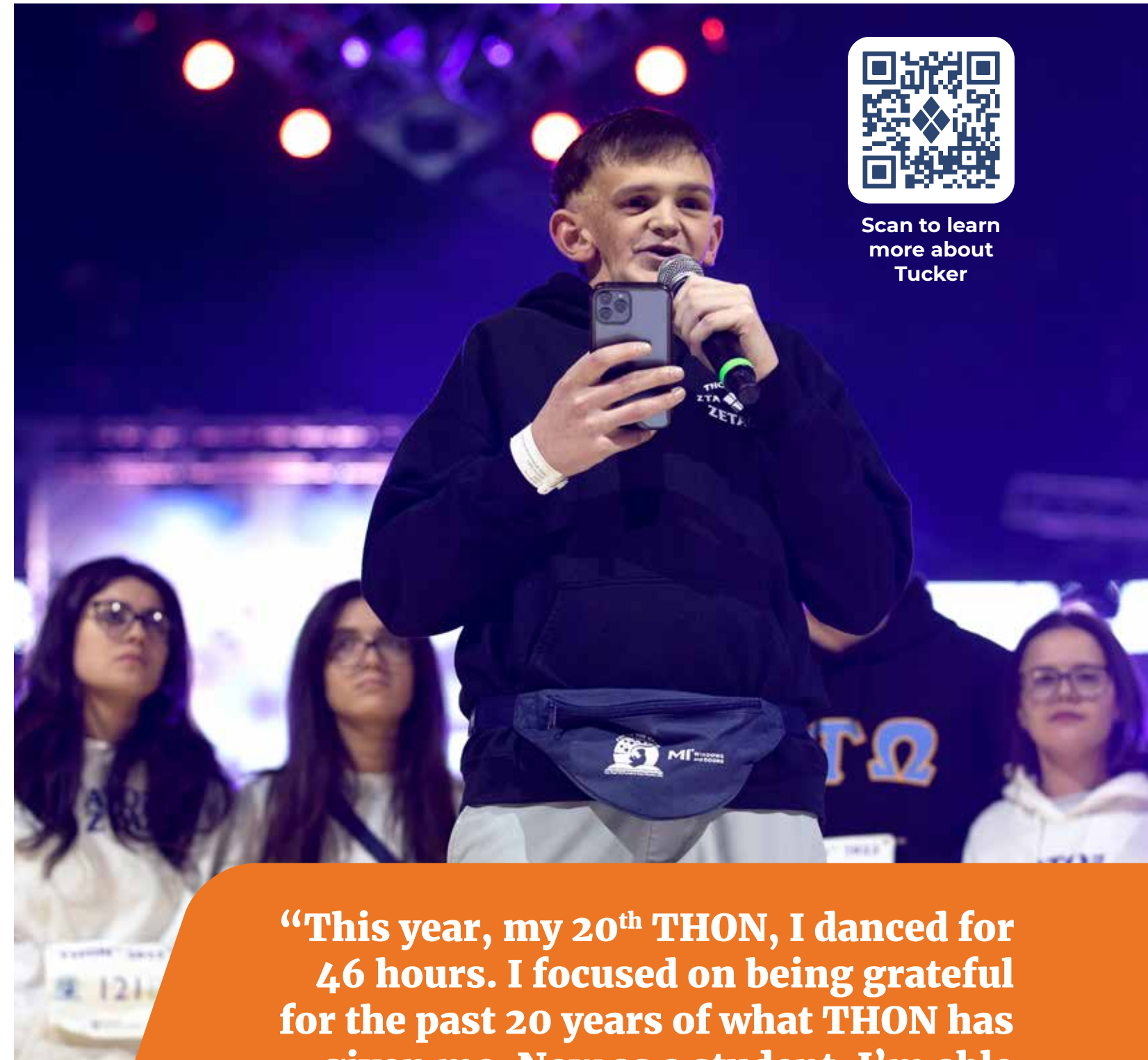
This year, Tucker served as a THON chair for his fraternity and participated as a dancer. He had the opportunity to dance with Gus at THON, just as he did as a child in treatment for cancer two decades ago.

“This year was a full circle moment,” Tucker said. “For me, my cancer journey isn’t just a story, it’s my life. And while it’s a story that can impact a lot of people, it’s really cool that I can share a piece of my life with another kid who is living it, just like I did.”

THON 2023 raised a record
\$15,120,523.62
to benefit Four Diamonds.



Scan to learn
more about
Tucker



“This year, my 20th THON, I danced for 46 hours. I focused on being grateful for the past 20 years of what THON has given me. Now as a student, I’m able to do that for someone else.”

FOUR DIAMONDS YOUNG ADULT **TUCKER**
conquering rhabdomyosarcoma



Four Diamonds sibling gives back to the cause that helped save her sister.

Before her cancer diagnosis, Celia was a typical nine-year-old. She loved to dance, played the violin and did not like doing homework. In August 2018, she was diagnosed with central nervous system ganglioneuroblastoma, a rare brain tumor, and everything changed.

Celia's diagnosis required her to be in the hospital for treatment for eight months, only going home for one weekend per month. Their family of four became separated, feeling like ships passing in the night.

Despite the physical distance, Celia's sister, Adeline, was a strong support for her throughout treatment. Adeline and her dad

would visit the hospital every Friday night and bring pizza. She would also FaceTime with Celia each day, which helped them to stay connected throughout their journey.

Celia is now in ninth grade, and she recently celebrated four years since completing her treatment! Adeline is now the leader of their high school's Mini-THON and is passionate about continuing to support the organization that gave so much to their family.

"It is really fun being able to participate in Mini-THON," Adeline said. "This is something I am very passionate about, so I am really grateful that it exists and that I get to be a part of it."

**During the 2022-23 school year,
K-12 students in more than
200 schools raised**
\$6.2 million
**through Four Diamonds Mini-THONs
to help conquer childhood cancer.**

This opportunity for lifelong learning is building the next generation of leaders and philanthropists.

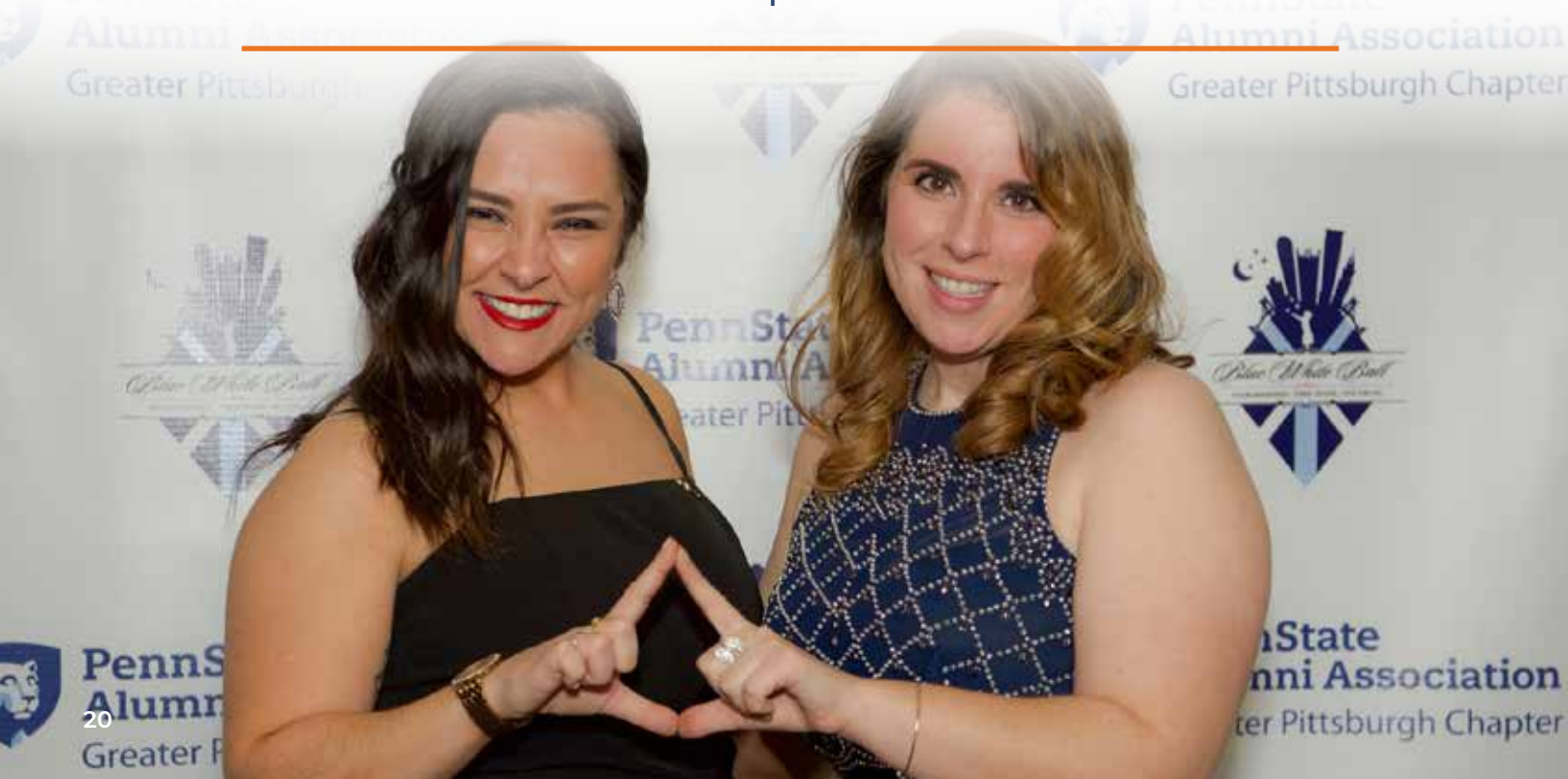


One Community, **For The Kids**®

Four Diamonds' community fundraisers are eager to help us conquer childhood cancer. The collective efforts of individuals, students, families, community members and corporate partners make an incredible impact to help kids survive their cancer and thrive.

This year, passionate supporters
and grateful patient families
contributed more than
\$1 million
to families fighting childhood cancer.

From individual and corporate gifts, community fundraisers and gifts in honor or in memory of a loved one, every gift gives hope, making it possible for Four Diamonds to help thousands of children.



For The Kids® – **Forever**

Pam Turner: Inspiring Volunteers to Conquer Childhood Cancer.



In the early 1980s, Pam Mullin Turner attended Penn State University and was involved in multiple THON committees. Fast-forward to 2016, Pam's eldest daughter Erin was selected to be a THON dancer. This was the first time Pam had come back to THON since her time in college. She was amazed by what THON had grown into. Her younger daughter Megan then served as the THON chair of her organization, providing yet another touchpoint for Pam. She was inspired by those she met and the impact they would make on her life. Through her daughters, she met Four Diamonds child Owen Bonn and his family, and through Owen's family, she met Four Diamonds' executive director Suzanne Graney.

Pam was moved to do more and was invited to serve on the Four Diamonds Advisory Board. In her six years of service – the final

two as the chair of the Advisory Board – Pam has inspired others to give. She and her husband Bill have contributed each year to THON, agreeing for their gift to be used as match funds to motivate others to give during THON's annual pep rally.

Last year, during an Advisory Board meeting, Pam heard about an estate gift Four Diamonds had received. She turned to Suzanne and said, "I want to learn about how Bill and I could do that, too."

As a result, Pam and Bill have chosen to include Four Diamonds in their will, and their future gift will create The Turner and Mullin Four Diamonds Program Fund. Their gift will create a perpetual annual funding stream for Four Diamonds, honoring Pam and Bill's desire to support Four Diamonds – and children like Owen – forever.



Play For The Kids™ rallies supporters during Childhood Cancer Awareness Month.

Play For The Kids is Four Diamonds' newest signature fundraising activity that unites supporters nationwide to conquer childhood cancer. Play For The Kids embraces the essence of childhood, being young at heart and offering support to kids who often miss out on many childhood activities because of their battle with cancer.

Each September, during Childhood Cancer Awareness Month, the Four Diamonds community unites to play like kids, hosting a variety of events – from food eating contests to outdoor fun – to raise funds for lifesaving cancer care, support and research.

Play For The Kids invites members from the Four Diamonds community to create fundraising teams in honor of kids like Jeremiah, who conquered rhabdomyosarcoma, a rare form of soft tissue cancer, and recently celebrated the end of his cancer treatment.

Thanks to families like Jeremiah's and a generous match from our presenting sponsor, MI Windows and Doors, Play For The Kids raised more than \$65,000 to help kids fighting pediatric cancer.

**Play For The Kids
mobilized more than**

800

**community members to
help children fighting
pediatric cancer.**



**We do what we do for
kids like Jeremiah.**

FOUR DIAMONDS CHILD **LISANDRA**
conquering acute lymphoblastic leukemia

FOUR  DIAMONDS
— Conquering Childhood Cancer —



PennState Health
Children's Hospital

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Hershey, PA 17033
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FourDiamonds.org

