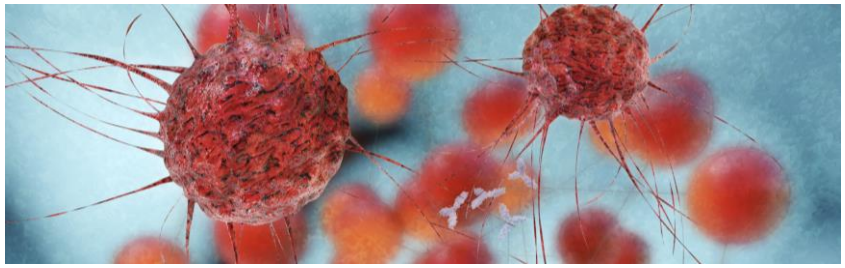
Investing in Pediatric Cancer Research

Impact Report prepared for the Ted Mullin Fund • Spring 2019



AT THE FOREFRONT OF KIDS' MEDICINE®
UChicago Medicine
Comer Children's

The future of tomorrow's top pediatric cancer treatments are because of generous *investments in research today*.

Since 2006, the Ted Mullin Fund at the University of Chicago Medicine has propelled current research efforts and sparked the careers of the next generation of physician-scientists.

Thank you for your dedicated and passionate partnership to accelerate discovery and inspire future investigators.

The 2018 Ted Mullin Scholars with Mary Henry (center) and Rick Mullin (right).

Investments in Pediatric Cancer Research

With the Ted Mullin Fund's growing fundraising momentum, gifts have supported three investigators' most promising projects. This year, the Ted Mullin Fund supported **Eric Beyer, MD, PhD**, **Ami Desai, MD**, and **Samuel Volchenboum, MD, PhD**, and their efforts toward advancing our understanding of pediatric cancer.

Eric Beyer, MD, PhD

Professor of Pediatrics, Cell Physiology, Cancer Biology, and Molecular Medicine

Dr. Beyer continues to examine molecular and cellular biology and physiology to investigate cancer cells. His team investigates the process of intercellular communication, specifically the direct exchange of ions and small molecules between cells through channels formed of proteins called connexins.

Their studies of this process may lead to new pharmacologic or molecular approaches to cancer therapy by manipulating exchange of drugs and drug metabolites between cells and the growth and viability of blood vessels.

In 2019, Dr. Beyer was named a Top Doctor by Chicago Magazine.

Ami Desai, MD, MSCE

Assistant Professor of Pediatrics

One of the latest and greatest advances in adult oncology has been the successful use of checkpoint inhibitors to shrink tumors. This treatment, however, has been largely ineffective in pediatric cancers.

After hearing that one of her colleagues in adult oncology created a clinical trial to test multi-site stereotactic body radiotherapy (SBRT) followed by a checkpoint inhibitor (pembrolizumab) in advanced solid tumors, Dr. Desai designed a pediatric version of this trial, which she hopes will soon become a phase I clinical trial.

Sam Volchenboum, MD, PhD

Associate Professor of Pediatrics

Associate Chief Research Informatics Officer

Director, Center for Research Informatics

Associate Director, Institute for Translational Medicine

Samuel L. Volchenboum, MD, PhD, MS worked in conjunction with Susan Cohn, MD to establish the International Neuroblastoma Risk Group Data Commons. As the director of the Center for Research Informatics, Dr. Volchenboum is a national expert in utilizing genomic data to advance cancer research, especially for instances of disease in children. Dr. Volchenboum hones his big-data expertise to address challenges presented by the most complex pediatric cancers.

Mainstream treatments have failed Dr. Volchenboum's patients and traditional grant funding is often not available to support the research that can save them. Dr. Volchenboum's work, however, leads to advances in computation and genetic sequencing that have created opportunities to ask critical questions—Where do these diseases come from? Who is at risk? What works against them?—that just a few years ago could not be meaningfully pursued. Dr. Volchenboum's latest project, the **Pediatric Cancer Data Commons (PCDC)**, will expand the reach of big-data in pediatric cancers, allowing physician-scientists at other institutions to draw from the data and upload the genomic data that they collect. This will encourage more data sharing among researchers and help inform the design of future clinical trials for even the most challenging pediatric cancers—enabling research that would have never been possible before.

Support from the Ted Mullin Fund is enabling Dr. Volchenboum and his team to incorporate pediatric sarcoma data into the PCDC.

Investments in Student-Athlete Scientists

In the program's seventh year, the Ted Mullin Scholar Program selected four student-athletes from across the country to conduct research with the leading physician-scientists of the Section of Hematology/Oncology at The University of Chicago Medicine Comer Children's Hospital.

This is an unparalleled program, granting undergraduate college students the opportunity to experience hands-on laboratory research and contribute to the ongoing pediatric cancer research initiatives taking place at Comer Children's. This experience has been credited by many alumni scholars as motivation and inspiration to continue on a career path in medicine. The Ted Mullin Fund is responsible for kick-starting the careers of 29 undergraduate student-athletes, including the 2018 scholars featured in the following pages.

Brittney Colon

State University of New York at Oswego '20

"This summer I had the unimaginable opportunity of working in Dr. Susan Cohn's laboratory under close collaboration with Dr. Mark Applebaum where the focus was Neuroblastoma. Responsible for 50% of all cancers in infants and 8% of childhood cancers, only 50% of high-risk patients survive despite intensive, multimodal therapies.

Aside from the incredible opportunity to be a part of such cutting-edge research, I was able to see its clinical implications at UCM Comer's Children Hospital. It was here that I was able to experience the most important side of medicine: the human story. **Upon my acceptance and completion of the Ted Mullin Fund Scholars program, I have gained a deeper understanding and appreciation for medicine.** This once in a lifetime opportunity has added fuel to my ever-burning desire to attend medical school. "

Margaret Harrington

Vassar College '19

"Being a Ted Mullin Scholar was an amazing opportunity to explore my interests in biomedical research. I worked on a project in Dr. Eric Beyer's lab with Dr. Joanna Gemel and Dr. Gabrielle Lapping-Carr studying pediatric Sickle Cell Anemia. The main focus of the research was analyzing the effects of exosomes from Sickle Cell Anemia patients on the integrity of endothelial cells. This work introduced me to numerous lab skills, including exosome and microRNA extraction, immunofluorescence imaging, and working with human cell culture. I loved living in Chicago and working at UCM. Each day was a great experience and an opportunity to learn something new. I began working near the end of the sickle cell project and it was exciting to be involved in meetings for planning the abstract, figures, and the future experiments that would be needed. **I am so thankful to the Mullins and to everyone I worked with at UCM who helped make last summer such an amazing experience!**"

Brandon Hilliard

Carleton College '18

"My summer as a Ted Mullin Scholar offered me an extraordinary opportunity to partake in cutting edge research at one of the nation's top pediatric research centers. As a member of Dr. James LaBelle's lab, I examined BCL-2 regulation of cellular apoptosis and researched applications of the BCL-2 pathway in the context of graft-versus-host disease (GvHD).

Under the mentorship of Dr. Labelle and Lindsey Ludwig I was able to learn a variety of laboratory techniques and given the opportunity to apply them to research based questions. **The Ted Mullin scholars program gave me the chance to explore an entirely new field of research and work with some of the top medical professionals in the nation**. I thoroughly enjoyed my time at the University of Chicago and look forward to taking my experiences with me as I continue to pursue a career in research."

Grace Marshall

Carleton College '20

"This summer I had the privilege to work in Dr. Susan Cohn's lab at the University of Chicago. The Cohn lab focuses on neuroblastoma which is a cancer that effects the peripheral nervous system primarily in children under the age of two. I learned countless new skills in the lab and I learned a lot about neuroblastoma. However, for me the best part was going into the clinic at Comer Children's Hospital with the doctors....I was touched and humble by each of the children I got to meet and by the strength of their families. They inspire my and make me excited to move forward with my medical career so that one day I can help kids and families like them. I will be attending the University of Rochester Medical School in the Fall of 2020 and while I am unsure what type of medicine I want to practice**, I know that the knowledge, experience, and inspiration I gained this summer [as a Ted Mullin Scholar] will stay with me wherever my career takes me.**"

The 2018 New Trier Aquatics
Ted Mullin Hour of Power

Continued Investments: Ted Mullin Scholar Alumni

Maryellen Campbell
Georgetown '16
Ted Mullin Scholar 2013

"This opportunity has affirmed my desire to become a doctor, and I encourage anyone interested in science or medicine to apply." Maryellen stayed in contact with her mentors from her experience as a Ted Mullin Scholar, and in 2017 was accepted into medical school at Florida Atlantic. She is currently a second year, and working on research involving pediatric traumatic brain injury.

Aleks Penev
University of Chicago' 13
Ted Mullin Scholar 2012

"My summer as a Ted Mullin Fund Scholar in Dr. John Cunningham's lab at the University of Chicago Medicine, involved using induced pluripotent stem cells as a model system to study the impact of erythroid transcription factors on hematopoietic cell differentiation and development." Aleks is currently an MD/PhD Candidate at NYU School of Medicine studying telomerase activation during human development and exploring the possibilities for how these mechanisms can be applied to the fields of cancer research and tissue homeostasis.

Erik Klontz
Carleton College '13
Ted Mullin Scholar 2012

"This experience solidified my desire to become a physician scientist. I enjoyed the research, which felt extra grounded by the opportunity to visit patients in the hospital. I am currently taking a gap year while I apply to MD/PhD programs." Erik is now in the 5th year of his MD/PhD program at the University of Maryland. "I'm currently working towards a PhD in microbiology and immunology, studying proteins that manipulate the human immune system."

Geralyn Lam
Amherst College '18
Ted Mullin Scholar 2016

"The Ted Mullin Fund gave me the fantastic opportunity to perform research in the section of pediatric hem/onc at the University of Chicago." After graduation, Geralyn began working for Iora Health, a primary care provider that serves medicare patients, seeking to restore humanity in healthcare by changing the services, IT systems, that typical fee-for-service providers have.

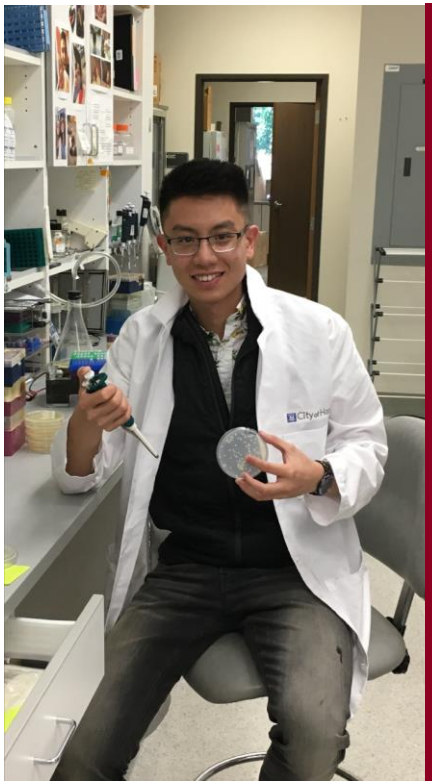
Continued Investments: Ted Mullin Scholar Alumni

Yifan Mao
University of Chicago '20
Ted Mullin Scholar 2017

"I'm extremely grateful for this experience and amazed by what I had achieved in a short period of time. Thank you Ted Mullin Fund for funding the Scholars and giving me an amazing and enriching experience."

In the summer of 2018, Yifan interned with an ENT & facial plastics surgeon in Clackamas, Oregon where she assisted with patient intake, scribe and set up procedure rooms. Then, in August, Yifan made a Medical Outreach Trip to Cusco, Peru with Volunteers Around the World to set up a medical clinic that will offer basic health care and health education for rural regions. In just five dayse, Yifan and her team attended to 209 patients at their mobile clinic [pictured to the left].

"I'm so glad we were able to help out the people of Huacanchay and very grateful for this eye-opening experience to learn about another culture and their healthcare!"



Jason Xu
Pomona College '18
Ted Mullin Scholar 2016

"In addition to providing me a seminal research experience in the area of cancer genomics, the Ted Mullin Scholars program introduced me to set of outstanding physician scientists that will forever serve as my role models ... During my freshman year of college, my grandfather fought terminal cancer and, like many others, I felt a strong desire to be a part of the team that is searching for a brighter future. It feels a bit surreal to say that I will be an MD/Ph.D student at the University of Pennsylvania in the fall of 2018, the very same institution that my grandfather visited from 1986-1989."

Edan Zitelny
Brandeis University '17
Ted Mullin Scholar 2014

"I would like to personally thank the Mullin family for giving me the opportunity to explore and engage in this research program and I look forward to putting the skills I have learned in the past ten weeks into practice." Since graduating undergrad, Edan started medical school at Wake Forest University and, "could not have reached this accomplishment without the support of the Ted Mullin Fund Scholars program."

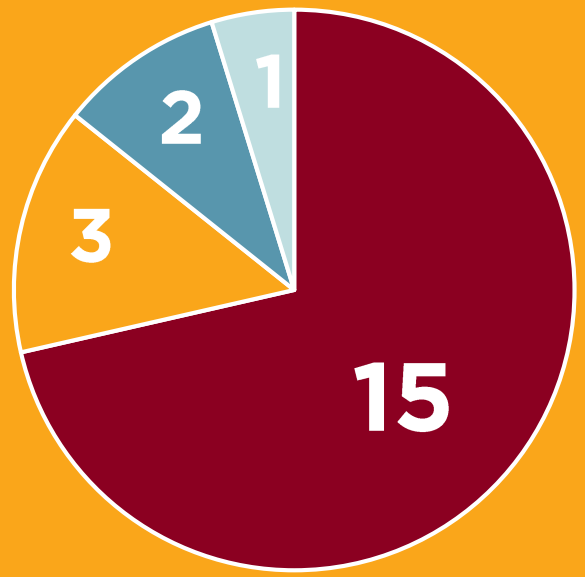
Ted Mullin Fund Investment by the Numbers

$1,323,357.48

fundraised since 2006 by the Ted Mullin Fund to support the pediatric cancer research and scholar program at the University of Chicago Medicine Comer Children's Section of Hematology/Oncology.

This success is built on the countless donors and participants of the **Ted Mullin Fund Hour of Power Fundraisers** held across the country. This total is the result of over **2,400 individual donations**, from **42 different states** and the District of Colombia.

What's Next for Ted Mullin Scholars



The University of Chicago Medicine Comer Children's Hospital has hosted **29 undergraduate student-athletes** as Ted Mullin Scholars from across the country. Scholars hail from **14 different universities** across **7 different states** and Washington D.C.

Since 2012, Ted Mullin Scholars have contributed to research projects in the labs of the most accomplished physician-scientists, like **Susan Cohn, MD**, section chief of the Section of Pediatric Hematology/Oncology. Dr. Cohn is an award-winning clinician, prolific author, and leading educator.

John Cunningham, MD, chair of the Department of Pediatrics has worked closely with scholars as well. Dr. Cunningham is a world-renowned expert in the treatment and research of childhood cancers and blood diseases with a specific expertise in leukemia, lymphoma, and sickle cell disease.

PHOTO CREDIT: SHAUN SARTIN

Ted's parents, Mary Henry (*third from left*) and Rick Mullin (*far right*), with the Ted Mullin Scholars at the University of Chicago.

ATHLETE INSPIRES THOUSANDS TO GIVE

When it came to swimming, Ted Mullin's motto was "leave it in the pool." A member of Carleton College's swimming and diving team, Ted passed away in 2006 from synovial sarcoma, a rare malignant tumor. Today, his legacy lives on, inspiring thousands to participate in the Hour of Power, an annual swim relay that supports sarcoma research.

Ted's parents, Mary Henry and Rick Mullin, established the Ted Mullin Fund for Pediatric Sarcoma Research, which advances research in sarcoma and other rare pediatric cancers at UChicago Medicine Comer Children's Hospital, where Ted was treated.

Since its inception, the fund has generated more than $1.25 million. Funds raised support a variety of programs that advance knowledge of the biological underpinnings of pediatric cancers and inform the development of new treatments.

"This is a way of honoring Ted's spirit," Mary Henry says. "I think he'd be absolutely stunned that so many people are doing something in an effort to raise awareness and funds for this disease."

In 2012, Ted's parents established the Ted Mullin Scholars Program, which offers undergraduate student-athletes the opportunity to gain hands-on laboratory and clinical experience through work with the pediatric cancer specialists at Comer Children's.

"This program was an incredible opportunity to explore and broaden my knowledge of medicine and science," says Yifan Mao, a 2017 Ted Mullin Scholar.

A history major at Carleton, Mullin was twice elected captain of the men's swimming and diving team.

"He was a very good student and had a very strong analytical mind," Rick Mullin says. "If the University of Chicago can help create better outcomes for adolescents and young adults with this disease, that would be the most we can hope for." ■

Sharing the Investment

This article is featured in the **University of Chicago Medicine Comprehensive Cancer Center's *2019 Annual Report*** as well as the September 2018 e-newsletter ***Answer Cancer***, distributed to over 4,000 subscribers.

ANSWER CANCER

AT THE FOREFRONT UChicago Medicine | Comprehensive Cancer Center

September 2018

Athlete inspires thousands to give

Since its inception, the Ted Mullin Fund has raised more than $1.25 million for pediatric sarcoma research.

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