



**ACCELERATING
DISCOVERY**
IN PEDIATRIC
CANCER RESEARCH

Ted Mullin Fund Impact Report
April 2018



AT THE FOREFRONT OF **KIDS' MEDICINE**[®]

UChicago Medicine

Comer Children's

For over 12 years, the Ted Mullin Fund has enabled ground-breaking research and inspired the next generation of physicians and scientists.

With your generous and long-standing partnership, the University of Chicago Comer Children's Section of Pediatric Hematology/Oncology has been able to garner new knowledge to the biological underpinnings of pediatric cancers, inform the development of new treatments, and contribute to the critical scientific advancements needed to improve outcomes for children faced with cancer.

Additionally, the Ted Mullin Fund has provided hands-on laboratory and clinical experience for the most promising students to pursue careers in medicine and oncology. Your commitment to developing mentorship opportunities for undergraduates is unparalleled to any other UCM program available to novice researchers.

Thank you for your continued support to Comer Children's. Your partnership is invaluable to the growth and excellence of the University of Chicago Medicine.



2017 Ted Mullin Scholars: Samuel To, Yifan Mao, Ruby Kazemi, and Tamir Zitelny

IMPACT ON TOP PEDIATRIC CANCER RESEARCH

The University of Chicago Comer Children's Section of Pediatric Hematology/Oncology continues to lead scientific research and advancements on a national and international level. Your investment this year has specifically impacted the work of two exemplary researchers, **Eric Beyer, MD, PhD**, and **Ami Desai, MD**.

As champions both in the clinic and at the bench, Drs. Beyer and Desai are able to utilize their clinical experiences caring for patients to inform their investigations in the laboratory.

Through your support, our faculty's lab teams are able to continue discovering new knowledge that ultimately informs new treatment options and changes patient's lives faced with pediatric cancer.



Eric Beyer, MD, PhD

Professor and Vice Chairman for Academic Affairs, Department of Pediatrics

Dr. Beyer's laboratory uses tools of molecular and cellular biology and physiology to investigate the interactions between cells and how they are disrupted in cancers and blood diseases. They have shown that specialized connections hold together the cells lining blood vessels and allow direct cellular interactions. However, small particles (called exosomes) that are released by cancer cells or by sick patients with sickle cell disease can disrupt the junctions between endothelial cells (which line blood vessels). This loss of endothelial integrity would allow cancer cells to spread and would facilitate inflammation.

Dr. Beyer and his team are determining the contents of the exosomes and the molecular regulation of these processes. These studies could lead to new diagnostic/prognostic tests and should elucidate aspects of cancer development and treatment.

Dr. Beyer's clinical practice focuses on general pediatric oncology and benign hematology.



Ami Desai, MD

Assistant Professor of Pediatrics

Dr. Desai is using pharmacology and biomarker data to explore new therapies for solid tumors. Through this research, she is examining how the body reacts to drug treatments in order to reduce toxicity, improve patient response to medication and enhance overall health and outcomes.

With the knowledge gained from the University of Chicago's adult oncology clinical trial enterprise, Dr. Desai is engineering these breakthroughs to fit the pediatric population. Currently, she is investigating precision radiation treatments paired with immunotherapies that have shown success in solid tumor treatments for adults and is investigating how this can be deployed for children.

Dr. Desai provides dedicated, compassionate care to children who have been diagnosed with cancer and blood diseases, with a focus on solid tumors such as sarcomas.

IMPACT ON FUTURE GENERATIONS OF SCIENTISTS

The Ted Mullin Scholar Program completed its sixth year in 2017. Scholars were selected from a competitive group of applicants and chosen based on their desire to learn more about research and gain experience in the laboratory, first-hand.

Working closely with the world's leading pediatric cancer physician-scientists is an incredible opportunity for Ted Mullin Scholars. Scholars often reflect on their experience with these faculty to be transformative and often reaffirms their passions for science and medicine. Since 2012, 18 Ted Mullin Scholars have gone on to complete their undergraduate degrees and of those graduates, 16 have either pursued an advanced degree in medicine, or entered a career related to medicine.

In 2017, scholars were mentored by University of Chicago's top pediatric hematology/oncology researchers. Yifan Mao worked closely with Eric Beyer, MD, PhD examining sickle cell disease. Scholar Tamir Zieiny was paired with Sue Cohn, MD Section Chief of Pediatric Hematology/Oncology. Samuel To investigated exosomes on endothelial cells in patients with sickle cell disease with Gabrielle Lapping-Carr, MD, and Ruby Kazemi joined Jill de Jong, MD, PhD's lab researching t-cell acute lymphoblastic leukemia and the genes that are thought to be related to hematopoietic stem cell function.

The Ted Mullin Scholars Program has impacted and inspired 25 undergraduate student-athletes by introducing them to some of the most advanced research in medicine—an unparalleled learning experience that leaves a lasting impact on those talented scholars.

2017 Ted Mullin Scholars



Yifan Mao, University of Chicago '20

"My experiences with shadowing in the clinic reaffirmed my desire to become a pediatrician. This program was an incredible opportunity to explore and broaden my knowledge about medicine and science. 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. I'm excited to continue working in the Beyer lab this school year!"



Tamir Zielny, Brandeis University '20

"Working in the Cohn Lab this summer was incredible as it not only taught me crucial laboratory skills, but also allowed me to immerse myself in and be a part of work that truly impacts the future of the pediatric hematology/oncology field... as a **Ted Mullin Scholar**, I have been able to work with some of the top medical professionals in their respective fields and have gained a tremendous amount of knowledge, not only from their direct teachings, but also from their personal experiences."



Samuel To, Pomona College '18

"This past summer I had the opportunity to participate in the **Ted Mullin Fund Scholars** program...Through this experience, I was able to learn about various lab techniques. As someone who is trying to decide between research and medicine, this experience also allowed me to be more exposed to the medical side of things. It showed me that a career in the intersection of medicine and research is a viable career option."



Ruby Kazemi, Carleton College '19

"The **Ted Mullin Fund Scholars Program** offered me incomparable opportunities that were very distinctive to the institution and the structure of the program... I shadowed Dr. de Jong and other physicians several times, which was an amazing way to connect the research I was conducting in the lab with the patients we are ultimately trying to help. The program also held organized lunches with heads of many other labs, which provided the chance to learn how they chose their fields of research and what their career pathways looked like. It was such an incredible summer!"

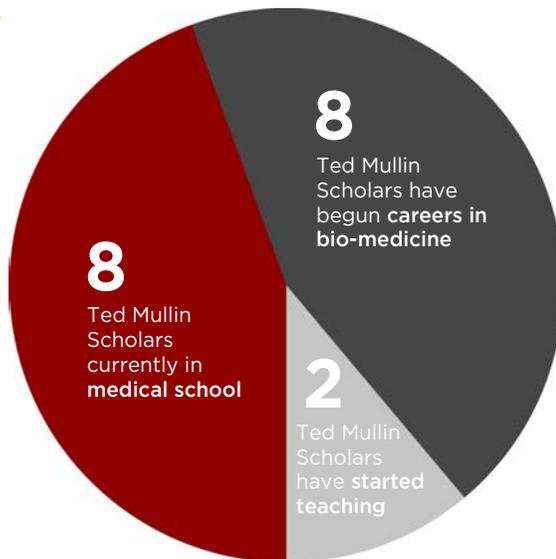
TED MULLIN FUND: BY THE NUMBERS

\$1,224,531.49 funds raised for pediatric cancer research efforts, and since 2012 the Ted Mullin Scholar Program. Over 2,300 donations since the Fund's inception in 2006.

The Ted Mullin Fund has supported the Section of Pediatric Hematology/Oncology's research under the leadership of John Cunningham, MD, and Susan Cohn, MD. The fund impacted pediatric cancer research in the areas of:

- stem cell biology;
- tumor suppressor genes;
- cancer genomics;
- genetic variations of radiation-induced second cancers;
- development of new targeted therapies, and more.

Of the 18 scholars who have completed their undergraduate degrees **eight have gone on to continue studying science in pursuit of becoming a clinical physician, eight have started careers in the bio-medical field, and two have begun careers in teaching.**



Since 2012, **25 undergraduates** across the country have completed the Ted Mullin Fund Scholars Program.

Scholars hail from **13 different universities** across **8 different states** and Washington, D.C.







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