



NORTON Children's Cancer Institute

Affiliated with the University of Louisville



Our Physician Team



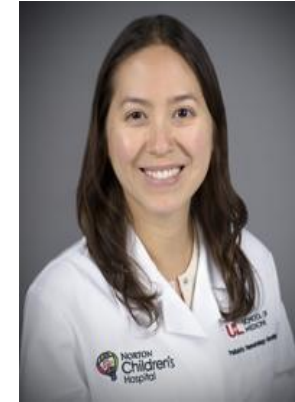
Dr. Raj
Chief



Dr. Barbour



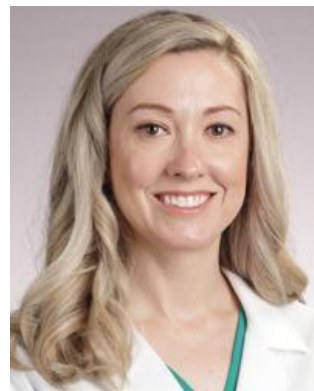
Dr. Huang



Dr. Knapp



Dr. McGowen



Dr Slone



Dr. Tse



Dr. Zhao

Norton Children's Cancer Institute

- Norton Children's Cancer Institute (NCCI) is the major provider of pediatric oncology and hematology care to children in Kentucky.
- Annually, NCCI provides care to approximately 1,000 children for oncology services, which results in 612+ hospital admissions and 6,567 outpatient oncology visits.
- The NCCI oncology team provides comprehensive and holistic care to patients, addressing not only the physical illness but also the associated stress that impacts their psychosocial well-being.



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Leader in Pediatric Cancer Care

- NCCI is the longest-standing, continually accredited children's oncology program by the American College of Surgeon's Commission on Cancer (COC), holding accreditation since 1959. It is one of only 12 COC Pediatric Cancer Programs in the country.
- NCCI is a long-standing member of the Children's Oncology Group, the world's largest group of hospitals committed to improving pediatric cancer through research.
- NCCI has similar outcomes and quality data as the top cancer programs in the country, and our US News rankings have been climbing steadily over the last 4 years.



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Leader in Pediatric Cancer Care

- NCCI has: Kentucky's only Pediatric Blood & Marrow Transplant program, accredited by the Foundation for the Accreditation of Cellular Therapy.
 - *Lead by Dr. William Tse, who brings a depth of experience in pediatric transplantation & cellular therapy.*
 - *Dr. Tse is also a FACT-inspector, focused on high-quality care and excellent patient outcomes*
- Kentucky's leading Pediatric Apheresis & Photopheresis programs
- Dedicated Blood & Marrow Transplant Laboratory staffed by certified, Medical Laboratory Scientists.



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Clinical Trials in Pediatric Cancer

- Children's Oncology Group
- Beat Childhood cancer consortium:
 - Dr. Huang's clinical trial in medulloblastoma is used in many children's hospitals in the country.
- North American Consortium For Histiocytosis
- Pediatric transplantation and cellular therapy consortium

Translational Research grants in Pediatric Cancer

- **Funded studies prior to July 2022: (Funded to approx. \$2.5 million by state)**
 - Anti-CD33/CD123 compound **CAR-T cells**, in **pediatric acute myeloid leukemia**. PI: William Tse, MD, PhD
 - Anti-GD2 **CAR-T cells** with intrinsic PD-1 checkpoint blockade, in **pediatric neuroblastoma** and brain tumors. PI: William Tse, MD, PhD
 - **Phase II Trial of Eflornithine/DFMO** as Maintenance Therapy for **Very High-Risk Medulloblastoma** PI: Michael Huang, MD
 - Role of the **Immunosuppressive Tumor Microenvironment** in Therapeutic Resistance in **Pediatric CNS Cancers** PI: Michael Huang, MD Co-PIs: Kavitha Yaddanapudi, Ph.D. and Howard Donninger, Ph.D. Sub-I: Luke Pearson, MD
 - **Statewide Molecular Tumor Board** for **Pediatric Brain Tumors**. Institutional PI: Mustafa Barbour, MD
 - The **Psychosocial Roadmap** for Operationalized **Treatment in Pediatric Cancer**. Principal Investigators: Sunnye Mayes, Ph.D. & Spencer Moorman, LCSW. Project Coordinator: Spencer Moorman, LCSW
- **Funded studies since July 2022: (Funded to approx. \$ 2.5 million by state)**
 - Developing **Phenotypically Defined CAR-T Therapies** for **High-Risk Pediatric malignancies**. PI: William Tse, MD
 - Molecular Classification and Deconvolution of the **Immune Microenvironment in Pediatric High-Grade CNS tumors**. PI: Michael Huang, MD
 - **Bifunctional radiolabeled Immunotherapy (BRIT)** for **Pediatric High-Grade Glioma**. PI: Michael Huang, MD
 - Molecular Targeted treatment of **Pediatric High-Grade Glioma** by **Novel Antimetabolite and Cellular Therapies**. PI: William Tse, MD
 - Deliver **high-quality fertility preservation** procedures to **young or prepubertal patients**. PI: Maggie Diggins, MD
 - **Trauma-Informed Procedural Pain Intervention (TIPPI)** PI: Sunnye Mayes, PhD
 - **Self-Assessment and Resilience Training (SMART)** among AYA patients with cancer, from diagnosis to survivorship. PI: Sunnye Mayes, PhD and Spencer Moorman, LCSW.

Fourteen LOIs were approved for funding to begin in July 2023.

Translational Research grants in Pediatric Cancer

(Funded studies for 2023)

- Kerry McGowan, MD, Kavitha Yaddanapudi, PhD, Gautam Gupta, PhD (M-PIs): Room Temperature Storage of Pediatric Cancer Biospecimens
- Michael Huang, MD, Kavitha Yaddanapudi, PhD and Howard Donninger, PhD (M-PIs): Targeting CCL2 as a Therapeutic Strategy for Pediatric Brain Cancer
- Ashok Raj, MD, Michael Huang, MD and Kavitha Yaddanapudi, PhD (M-PIs): Adenosine Deaminase as a Novel Immunotherapeutic Agent for Treatment of Pediatric Cancer
- William Tse, MD (PI): Developing Multiplex Immune Profiling and Target Discovery in Pediatric Solid Tumors
- Akshikumar Mistry, MD (PI): Integration of Existing Genomic Data to Map the Immune Landscape of Pediatric Brain Tumors (PBTs)
- Jun Cai, MD, PhD and William Tse, MD (M-PIs): Effects of Epigenomic Reprogramming by Environmental Cadmium Exposure on Tumor Immune Microenvironment and Response to CAR-T Cell Immunotherapy in Pediatric High-Grade Gliomas
- Yi Tan, PhD (PI): Non-mitogenic FGF1 Prevents Doxorubicin-induced Cardiotoxicity in Pediatric Cancer Survivors
- Michael Huang, MD and Haixun Guo, PhD (M-PIs): ImmunoPET Platform for In Vivo Immunohistochemistry of Pediatric Brain Tumor for Targeted Immunotherapy
- Esther Knapp, MD (PI): Evaluating Children with Cancer for Cancer Predisposition Syndromes: A Needs Assessment
- Spencer Moorman, MSSW, LCSW and Mustafa Barbour, MD (M-PIs): The Psychosocial Roadmap for Operationalized Treatment in Pediatric Cancer: A Standardized Approach for Provider and Patient
- Geoffrey Clark, MD and Sucheta Telang, MD (M-PIs): Novel Targeted Therapy for NF1 Loss Driven Pediatric Brain Cancers

Advanced Sickle Cell disease program

- Morbidity and mortality data: amongst the best in the nation
- Remarkably low incidence of chronic pain and chronic opioid usage
- High utilization of sickle-directed therapies including early and aggressive use of hydroxyurea had led to more than a 50% reduction in hospitalization due to pain crisis
- Leading erythrocytapheresis program in the nation
- Engaged in regional educational activities (Project ECHO) through the HRSA program
- PCORI grant for the transition of patients from pediatric to adult care and the unique triad model (patient, provider, and community-based organization)
- Haplo-transplant program



Comprehensive Hemostasis and Thrombosis Program

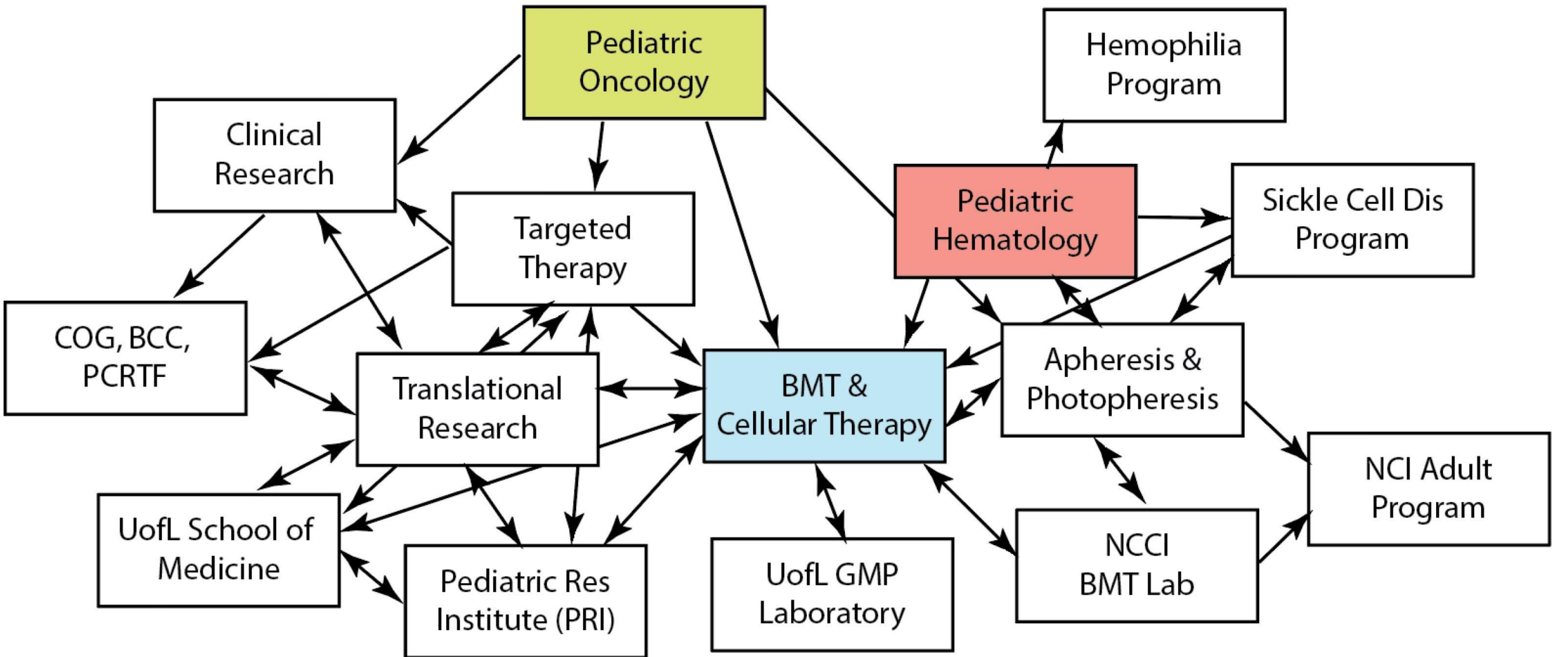
- Hemophilia:
 - All moderate and severe Hemophilia A patients are on nonfactor therapies, which are started in the neonatal period soon after the diagnosis is made and obviates the need for central lines
 - All moderate and severe Hemophilia B patients are on extended half-life products
 - Marked decrease in ED visits due to bleeding symptoms and annualized bleeding rates (ABR)

Advocacy

The Division of Pediatric Hematology/Oncology has led the way in advocacy:

- State grants:
 - \$ 5 million in the 2018 and 2020 budget.
 - Increased to \$12.5 million in the 2022 budget
 - NCCI gets the bulk of the grant monies
- Raise Red
- Emily's law for patients with sickle cell disease

Fruitful Interactions Among Hem-Onc Subunits



Hope and Promise

- **Development of a center for innovative pediatric cancer therapies**
- **Develop and participate in clinical trials of Chimeric Antigen Receptor (CAR) T cell therapy** for patients with high-risk leukemia and solid tumors.
- **Emphasis on excellent care of patients with Sickle Cell Disease**
- **Focus on excellent management of bleeding and clotting problems**
- **Develop improved outcome research**, tapping into our division's large patient base and vast clinical data will help improve the quality of clinical care and increase the visibility of our division.
- **Develop areas of clinical excellence** by supporting physicians to establish areas of expertise and reputation.
- **Further improve psychosocial support of our patients and families.**