### Division Summary

#### RESEARCH AND TRAINING DETAILS

<table>
<thead>
<tr>
<th>Details</th>
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<tbody>
<tr>
<td>Number of Faculty</td>
<td>27</td>
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<tr>
<td>Number of Joint Appointment Faculty</td>
<td>3</td>
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<tr>
<td>Number of Research Fellows</td>
<td>7</td>
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<tr>
<td>Number of Support Personnel</td>
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<tr>
<td>Direct Annual Grant Support</td>
<td>$2,098,344</td>
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<td>Direct Annual Industry Support</td>
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<td>Peer Reviewed Publications</td>
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#### CLINICAL ACTIVITIES AND TRAINING

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<tr>
<td>Number of Staff Physicians</td>
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<tr>
<td>Number of Clinical Fellows</td>
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<tr>
<td>Number of Other Students</td>
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<tr>
<td>Inpatient Encounters</td>
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<tr>
<td>Outpatient Encounters</td>
<td>9,596</td>
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### Significant Publications


The multifunctional AMPK-activated protein kinase (AMPK) is an evolutionarily conserved energy sensor that plays an important role in cell proliferation, growth, and survival. It remains unclear whether AMPK functions as a tumor suppressor or a contextual oncogene. This is because although on one hand active AMPK inhibits mammalian target of rapamycin (mTOR) and lipogenesis—two crucial arms of cancer growth—AMPK also ensures viability by metabolic reprogramming in cancer cells. AMPK activation by two indirect AMPK agonists AICAR and metformin (now in over 50 clinical trials on cancer) has been correlated with reduced cancer cell proliferation and viability. Surprisingly, we found that compared with normal tissue, AMPK is constitutively activated in both human and mouse gliomas. Therefore, we questioned whether the antiproliferative actions of AICAR and metformin are AMPK independent. Both AMPK agonists inhibited proliferation, but through unique AMPK-independent mechanisms and both reduced tumor growth in vivo independent of AMPK. Importantly, A769662, a direct AMPK activator, had no effect on proliferation, uncoupling high AMPK activity from inhibition of proliferation. Metformin directly inhibited mTOR by enhancing PRAS40’s association with RAPTOR, whereas AICAR blocked the cell cycle through proteasomal degradation of the G2M phosphatase cdc25c. Together, our results suggest that although AICAR and metformin are potent AMPK-independent antiproliferative agents, physiological AMPK activation in glioma may be a response mechanism to metabolic stress and antancer agents.

The established association between inflammatory bowel disease and colorectal cancer underscores the importance of inflammation in colon cancer development. On the basis of evidence that hemostatic proteases are powerful modifiers of both inflammatory pathologies and tumor biology, gene-targeted mice carrying low levels of prothrombin were used to directly test the hypothesis that prothrombin contributes to tumor development in colitis-associated colon cancer (CAC). Remarkably, imposing a modest 50% reduction in circulating prothrombin in fII+-/ mice, a level that carries no significant bleeding risk, dramatically decreased adenoma formation following an azoxymethane/dextran sodium sulfate challenge. Similar results were obtained with pharmacologic inhibition of prothrombin expression or inhibition of thrombin proteolytic activity. Detailed longitudinal analyses showed that the role of thrombin in tumor development in CAC was temporally associated with the antecedent inflammatory colitis. However, direct studies of the antecedent colitis showed that mice carrying half-normal prothrombin levels were comparable to control mice in mucosal damage, inflammatory cell infiltration, and associated local cytokine levels. These results suggest that thrombin supports early events coupled to inflammation-mediated tumorigenesis in CAC that are distinct from overall inflammation-induced tissue damage and inflammatory cell trafficking. That prothrombin is linked to early events in CAC was strongly inferred by the observation that prothrombin deficiency dramatically reduced the formation of very early, precancerous aberrant crypt foci. Given the importance of inflammation in the development of colon cancer, these studies suggest that therapeutic interventions at the level of hemostatic factors may be an effective means to prevent and/or impede colitis-associated colon cancer progression.


Kaposiform hemangioendothelioma (KHE) is a rare, potentially life-threatening vascular tumor often associated with a coagulopathy known as Kasabach–Merritt phenomenon (KMP). Optimal therapy for KHE is not known, and despite well-published classification systems, physicians still confuse this entity with other vascular anomalies. In the interest of standardizing clinical practice across specialties and institutions and to establish a basis for the design of comparative effectiveness studies in vascular tumors, we have developed a consensus-derived standard of practice for the treatment of KHE with and without associated KMP.


Health related quality of life (HRQL) assessments during therapy for pediatric cancer are important. The
Division Publications


24. Liu X, Chhipa RR, Nakano I, Dasgupta B. **The AMPK inhibitor compound C is a potent AMPK-


Faculty, Staff, and Trainees

Faculty Members

John Perentesis, MD, FAAP, Professor

Leadership Deb Kleisinger Endowed Chair of Novel Cancer Treatments; Executive Co-Director, Cancer and Blood Diseases Institute; Director, Division of Oncology; Director, Leukemia/Lymphoma Program; Cincinnati Children's Principal Investigator, Children's Oncology Group (COG); Cincinnati Children's Principal Investigator, National Cancer Institute Pediatric Phase I Consortium

Research Interests New anticancer drug development; molecular oncogenesis and pharmacogenetics in high risk leukemia, lymphoma and pediatric cancers

Michael Absalon, MD, PhD, Assistant Professor

Leadership Director, Medical Education Program; Associate Director, Leukemia/Lymphoma Program

Research Interests New therapeutics; relapsed leukemia and lymphoma, post-transplant lymphoproliferative disease, T-cell lymphoma

Denise M. Adams, MD, Professor

Leadership Marjory J. Johnson Chair Vascular Tumor Translational Research; Medical Director, Comprehensive Hemangiomas and Vascular Malformation Clinic; Director, Hematology/Oncology Fellowship Program

Research Interests Angiogenesis, endothelial cell proliferation, vascular anomalies, mTOR inhibition as a therapeutic approach to complex vascular anomalies

Karen Burns, MD, Assistant Professor

Leadership Clinical Director, Cancer Survivor Center
Research Interests Childhood cancer survival; fertility preservation and outcomes; adolescent and young adult outcomes and quality of life

Lionel Chow, MD, Assistant Professor
  Leadership St. Baldrick's Foundation Scholar
  Research Interests Molecular genetics of pediatric high-grade glioma, animal models of brain tumors, translational therapeutics for gliomas

Biplab Dasgupta, PhD, Assistant Professor
  Research Interests Brain development, energy metabolism, brain cancer

Mariko DeWire, MD, Assistant Professor
  Research Interests Developmental therapeutics in pediatric brain tumors

Rachid Drissi, MD, Assistant Professor
  Research Interests Replicative senescence, telomere disruption signaling to DNA damage pathways

Maryam Fouladi, MD, FRCP, Professor
  Leadership Marjory J. Johnson Chair of Brain Tumor Translational Research; Medical Director, Neuro-Oncology Program; Cincinnati Children's Principal Investigator, Collaborative Ependymoma Research Network (CERN)
  Research Interests Novel drug development for the treatment of children with recurrent or poor prognosis brain tumors

James I. Geller, MD, Associate Professor
  Leadership Medical Director, Kidney and Liver Tumors Program; Co-Medical Director, Retinoblastoma Program
  Research Interests Developmental therapeutics for pediatric solid tumors, especially liver and kidney tumors and retinoblastoma

Adrienne Hammill, MD, Assistant Professor
  Research Interests New approaches to the assessment and treatment of hemangiomas and vascular malformations

Trent Hummel, MD, Assistant Professor
  Research Interests New therapeutics in neuro-oncology; diffuse intrinsic pontine glioma, neurofibromatosis type 1 and 2 related tumors, biomarker development

Beatrice Lampkin, MD, Professor Emerita
  Research Interests Blood and bone marrow morphology and the significance thereof in relationship to patients' case histories

Benjamin Mizukawa, MD, Instructor
  Research Interests Pediatric leukemia and lymphoma; role of small Rho GTPases in leukemogenesis and leukemic stem cell biology and their potential as therapeutic targets in acute myeloid leukemia

Rajaram Nagarajan, MD, Assistant Professor
  Leadership Outpatient and Inpatient Clinical Director; Director of Cancer Control and Outcomes Research, Cancer Survivor Center
  Research Interests Bone tumors; functional and quality of life outcomes following cancer therapy

Maureen O'Brien, MD, Assistant Professor
Leadership  Associate Director, Leukemia/Lymphoma Program

Research Interests  High-risk acute lymphoblastic leukemia; novel therapies for relapsed leukemia and lymphoma; complications of leukemia therapy

Christine Phillips, MD, Assistant Professor

Research Interests  Developmental therapeutics for acute myeloid leukemia; pharmacogenomics of cytarabine and other chemotherapeutic agents

Lisa Privette, PhD, Instructor

Research Interests  Molecular mechanisms of tumorigenesis and chemotherapeutic drug resistance in breast cancer, with a particular interest in breast cancer stem cells

Brian Turpin, DO, Instructor

Research Interests  Developmental therapeutics in pediatric brain tumors

Brian D. Weiss, MD, Associate Professor

Leadership  Associate Director for Safety and Compliance, Cancer and Blood Diseases Institute; Medical Director, Neuroblastoma Program; Cincinnati Children’s Principal Investigator, New Approaches to Neuroblastoma Therapy Consortium (NANT)

Research Interests  Targeted agents for neurofibromatosis type 1-related malignancies (including plexiform neurofibromas, optic pathway gliomas, and juvenile myelomonocytic leukemia); chemotherapy safety

Susanne Wells, PhD, Associate Professor

Leadership  Director, Epithelial Carcinogenesis and Stem Cell Program

Research Interests  Epithelial malignancies, human papillomavirus biology and new targets of the HPV E6/E7 oncogenes, the role of epithelial stem cells in carcinogenesis

Joint Appointment Faculty Members

Ahna Pai, PhD, Associate Professor (Adherence Psychology)

Saulius Sumanas, PhD, Assistant Professor (Developmental Biology)

Mary Sutton, MD, Associate Professor (Neurology)

Clinical Staff Members

  - Carina Braeutigam, MD
  - Vasudha Narayanaswamy, MD

Trainees

  - Andrew Bukowinski, MD, PGYIV, Children’s Hospital of Pittsburg
  - Christopher Dandoy, MD, PGYVI, Miami Children’s Hospital
  - Kathleen Dorris, MD, PGYVII, Children’s Memorial Hospital, Northwestern University
  - Anne Hladik, MD, PGYV, Baylor College of Medicine, Houston
  - Dawn Pinchasik, MD, PGYVI, Children’s Hospital of Pittsburgh
  - Ralph Salloum, MD, PGYVI, Detroit Medical Center/Wayne State University
  - Jennifer Williams, MD, PGYVI, T.C. Thompson Children's Hospital/University of Tennessee

Division Collaboration
Scholar Training Program in Cancer Survivorship, funded by the Hyundai Hope on Wheels Foundation (John Perentesis, MD, FAAP, Karen Burns, MD, Rajaram Nagarajan, MD)

**Adolescent Medicine** » Leslie Ayeneu-Coker, MD

**Behavioral Medicine and Clinical Psychology** » Dennis Drotar, PhD

**Biostatistics and Epidemiology** » Mi-Ok Kim, PhD

**Human Genetics** » Robert Hopkin, MD and Sara Knapke, MD, CGC

**Neurology** » Mary Sutton, MD

**Physical Medicine and Rehabilitation** » David Pruitt, MD

University of Cincinnati Cancer Center Research Steering Committee (John Perentesis, MD, FAAP, Yi Zheng, PhD)

**Adolescent Medicine** » Frank Biro, MD

**University of Cincinnati Cancer Cell Biology - Environmental Sciences** » Jun-Lin Guan, PhD, Shuk-Mei Ho, PhD, and Susan Pinney, PhD

**Comprehensive Lung Cancer Center** » John Morris, MD

Pediatric Cancer Pain/Palliative Care & Research Initiative (John Perentesis, MD, FAAP, Denise Adams, MD, Rajaram Nagarajan, MD, Maryam Fouladi, MD, MSc, Brian Weiss, MD, James Geller, MD, Michael Absalon, MD, PhD, Maureen O’Brien, MD, Karen Burns, MD, Christine Phillips, MD, Mariko DeWire, MD, Jennifer Mangino, MD, Brian Turpin, DO, Lionel Chow, MD, PhD, Benjamin Mizukawa, MD, Trent Hummel, MD, Adrienne Hammill, MD, PhD, Jennifer Davis, DO, Jordan Wright, MD, Suzanne Wells, PhD, Lisa Privette-Vennedge, PhD, William Seibel, PhD, Rachid Drissi, PhD, Biplab DasGupta, PhD)

**Anesthesia** » Mark Meyer, MD, Rachel Thienprayoon, MD, and Norbert Weidner, MD

Hemangioma and Vascular Malformation Center, clinical services and clinical research, including a clinical trial of rapamycin and sirolimus for complicated vascular anomalies, a vascular tumor registry, and a vascular anomaly tissue repository. (Denise Adams, MD, Adrienne Hammill, MD, PhD)

**Anesthesia** » Norbert Weidner, MD

**Cardiology** » Russel Hirsch, MD

**Dermatology** » Anne Lucky, MD, Kara Shah, MD, PhD, and Marty Visscher, PhD

**Gastroenterology** » Ajay Kaul, MD

**Human Genetics** » Robert Hopkin, MD, Derek Neilson, MD, and Katherine Wusik-Healy, LGC

**Neurology** » J. Michael Taylor, MD and Mary Sutton, MD

**Neurosurgery** » Kerry Crone, MD

**Ophthalmology** » Anita Gupta, MD and Michael Yang, MD

**Orthopaedics** » James McCarthy, MD and Joel Sorger, MD

**Otolaryngology** » Ravindru Elluru, MD, PhD and Michael Rutter, MD

**Pain Management and Palliative Care** » Kenneth Goldschneider, MD, FAAY

**Pathology** » Anita Gupta, MD

**Plastic Surgery** » Ann Schwentker, MD and Kevin Yakuboff, MD, FACS

**Pulmonary Medicine** » Raouf Amin, MD, Michael Seid, PhD, and Robert Wood, MD, PhD

**Radiology** » Todd Abruzzo, MD, William Ball, MD, Patel Manish, DO, Carl Merrow, MD, and Andrew Zbojniewicz, MD

**Surgical Services** » Richard Azizkhan, MD

**Surgery** » Belinda Hsi Dickie, MD, PhD
Multidisciplinary clinical services for patients with neurofibromatosis type 2; clinical research related to neurofibromatosis type 2, including national trial of VEGF inhibitor for NF2 patients with vestibular schwannomas. (Trent Hummel, MD)

Audiology » Ravi Samy, MD, FACS and Gayle Riemer, MA, CCC-A, F-AAA
Human Genetics » Robert Hopkin, MD and Elizabeth Schorry, MD
Neurosurgery » Francesco Mangano, DO, FACS, FACOS
Pathology » Lili Miles, MD
Physical Medicine and Rehabilitation » David Pruitt, MD
Radiology » James Leach, MD

Leukemia/Lymphoma Program clinical multidisciplinary care. (John Perentesis, MD, FAAP, Michael Absalon, MD, PhD Karen Burns, MD, Maureen O’Brien, MD, Christine Phillips, MD).

Behavioral Medicine and Clinical Psychology » Michelle Ernst, PhD
Human Genetics » Liming Bao, MD, PhD and Teresa Smolarek, PhD
Neurology; » Mary Sutton, MD
Pathology » Richard McMasters, MD
Physical Medicine and Rehabilitation » David Pruitt, MD
Radiology » Michael Gelfand, MD

Adherence research; "Promoting Treatment Adherence in Adolescent Leukemia" NIH (John Perentesis, MD, FAAP)

Behavioral Medicine » Dennis Drotar, PhD
Clinical Psychology » Ahna Pai, PhD

Scholar Training Program in Pediatric Oncology Developmental Therapeutics and Clinical Pharmacology (John Perentesis, MD, FAAP, Maryam Fouladi, MD, MSc)

Biomedical Informatics » Bruce Aronow, PhD
Biostatistics and Epidemiology » Mi-Ok Kim, PhD
Clinical Pharmacology » Alexander Vinks, PharmD, PhD, FCP
Pathology » David, Witte, MD
Radiology » Michael Gelfand, MD and Alexander Towbin, MD

Down syndrome leukemia research: etiology and risk factors, pharmacogenetics of therapy and outcomes. (John Perentesis, MD, FAAP)

Biomedical Informatics » Bruce Aronow, PhD
Biostatistics and Epidemiology » Mi-Ok Kim, PhD
Developmental and Behavioral Pediatrics » David Schonfeld, MD
Human Genetics » Teresa Smolarek, PhD

Pediatric Cancer Drug Development – Genomics, Pharmacology & Drug Discovery/Bioinformatics (John Perentesis, MD, FAAP, Denise Adams, MD, Rajaram Nagarajan, MD, Maryam Fouladi, MD, MSc, Brian Weiss, MD, James Geller, MD, Michael Absalon, MD, PhD, Maureen O’Brien, MD, Karen Burns, MD, Christine Phillips,
Biomedical Informatics » Bruce Aronow, PhD, Rebekah Kams, PhD, Mayur Sarangdhar, PhD, and Imre Solti, MD, PhD
Clinical Pharmacology » Alexander Vinks PharmD, PhD, FCP and Kana Mizuno, PhD

Pediatric Cancer Drug Development – Clinical Trial Biostatistics (John Perentesis, MD, FAAP, Denise Adams, MD, Rajaram Nagarajan, MD, Maryam Fouladi, MD, MSc, Brian Weiss, MD, James Geller, MD, Michael Absalon, MD, PhD, Maureen O’Brien, MD, Karen Burns, MD, Christine Phillips, MD, Mariko DeWire, MD, Jennifer Mangino, MD, Brian Turpin, DO, Lionel Chow, MD, PhD, Benjamin Mizukawa, MD, Trent Hummel, MD, Adrienne Hammill, MD, PhD, Jennifer Davis, DO, Jordan Wright, MD, Suzanne Wells, PhD, Lisa Privette-Vinnedge, PhD, William Seibel, PhD, Rachid Drissi, PhD, Biplab DasGupta, PhD)

Biostatics & Epidemiology » Lin Fei, PhD

Cancer Metabolism. (Biplab DasGupta, PhD)
Bone Marrow Transplantation & Immune Deficiency » Ashish Kumar, MD, PhD
Experimental Hematology and Cancer Biology » Kakajan Komurov, PhD and Nancy Ratner, PhD
Human Genetics » Gregory Grabowski, MD

Studies in DEK in Hematopoietic stem cells. (Suzanne Wells, PhD)
Bone Marrow Transplantation & Immune Deficiency » Stella Davies, MBBS PhD MRCP and Parinda Mehta, MD
Experimental Hematology and Cancer Biology » Nicolas Nassar, PhD
Pathology » Kathryn Wikenheiser-Brokamp and David Witte, MD
UC Environmental Health » Shuk-Mei Ho, PhD
UC Hematology/Oncology » El Mustapha M. Bahassi, PhD
UC Molecular Genetics » Peter Stambrook, PhD
UC Otolaryngology » Keith Casper, MD, Yash Patil, MD, and Keith Wilson, MD

Bone Marrow Derived HSCs in hPAP Patients (Michael Absalon, MD, PhD)
Bone Marrow Transplantation & Immune Deficiency » Michael Grimley, MD and Ashish Kumar, MD, PhD
Neonatology and Pulmonology » Bruce Trapnell, MD, MS

Screening strategy and Library design for identification of inhibitors of NSD2. (William Seibel, PhD)
Cancer Pathology » Gang Huang, PhD

Cardiac function in children with hepatoblastoma. (James Geller, MD, Rajaram Nagarajan, MD)
Cardiology » John Jeffries, MD, MPH, FAAP, FACC and Thomas Ryan, MD, PhD

A Phase I/Pilot Study of CPX-351 for Children, Adolescents and Young Adults with Recurrent or Refractory Hematologic Malignancies (Michael Absalon, MD, PhD, John Perentesis, MD, FAAP)
Cardiology » John Lynn Jeffreies, MD, MPH, FAAP, FACC and Ryan Thomas, MD, PhD
Biostatistics and Epidemiology » Mi-Ok Kim, PhD
Local and Systemic Responses and Epi-Genetic Influences on Preterm Birth among Hispanic Women. (Rachid Drissi, PhD)

Center for Professional Excel Research & EBP » Rita Pickler, PhD

Post-Transplant Lymphoproliferative Disease Working Group. (Michael Absalon, MD, PhD)

Cardiology » Chesney Castleberry, MD and Ryan Thomas, MD, PhD
Gastroenterology » John Bucuvalas, MD
Hepatology and Nutrition » Alexander Miethke, MD
Nephrology » Jens Goebel, MD
Pathology » David Witte, MD
Radiology and Medical Imaging » Alan Brody, MD

Multidisciplinary clinical services for patients with neurofibromatosis; clinical research related to neurofibromatosis, including national clinical trial of mTOR inhibition to treat NF1-related plexiform neurofibromas. (Brian Weiss, MD, John Perentesis, MD, FAAP, Trent Hummel, MD)

Clinical Pharmacology » Alexander Vinks, PhamD, PhD, FCP
Human Genetics » Robert Hopkin, MD and Elizabeth Schorry, MD
Neurology » Mary Sutton, MD,
Neurosurgery » Kerry Crone, MD
Ophthalmology » Constance West, MD
Orthopaedic Surgery UC » Alvin Crawford, MD
Pathology » Margaret Collins, MD
Physical Medicine and Rehabilitation » David Pruitt, MD
Radiology » Michael Gelfand, MD, Susan Sharp, MD, and Alexander Towbin, MD

Liver transplantation clinical services and clinical research activities for hepatoblastoma patients. (James Geller, MD)

Developmental Biology » Kenneth Campbell, PhD
Gastroenterology, Hepatology and Nutrition » John Bucuvalas, MD and Michael Leonis, MD, PhD
Pathology » Kevin Bove, MD, Anita Gupta, MD, Rachel Sheridan, MD, and Mikako Warren, MD
Radiology » Alexander Towbin, MD
Surgery » Maria Alonso, MD, Jaimie Nathan, MD, Frederick Ryckman, MD, and Gregory Tiao, MD

Myelination (Biplab DasGupta, PhD)

Developmental Biology » Yoshida Yutaka, PhD
Pain Management » Michael Jankowski, PhD

Endocrinology services for oncology patients; Children’s Oncology Group and other clinical research activities (John Perentesis, MD, FAAP, Maryam Fouladi, MD, MSc, Karen Burns, MD)

Endocrinology » Susan Rose, MD and Meilan Rutter, MD

Cdc42 inhibition for xenograft conditioning and mobilization. (Benjamin Mizukawa, MD, John Perentesis, MD, FAAP)

Experimental Hematology and Cancer Biology » Yi Zheng, PhD
Design and Contract Synthesis of Inhibitors of cdc42. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Yi Zheng, PhD

Design and Contract Synthesis of Inhibitors of RAS-SOS1 Interactions. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Yi Zheng, PhD

Design and Contract Synthesis of Inhibitors of NF1 mutant MPNST Cell Lines. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Nancy Ratner, PhD

Oversight of development of High Throughput Screen for inhibitors of Fibrin and MAC-1 binding. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Jay Degen, PhD

Medicinal Chemistry Consultation and supply of compounds targeting inhibition of STS1 Phosphatase. (William Seibel, PhD, John Perentesis, MD, PhD, FAAP)

*Experimental Hematology and Cancer Biology* » Nicolas Nassar, PhD

Medicinal Chemistry Consultation and supply of compounds targeting inhibition of RAS. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Nicolas Nassar, PhD

Medicinal Chemistry Consultation and supply of compounds modulating of RAS-VAV3 binding. (William Seibel, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Jose Cancelas, MD, PhD

Cancer (Biplab DasGupta, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Daniel Starczynowski, PhD

Provide technical services with flow cytometry and intellectual input on identifying cancer stem cells. (Lisa Privette-Vinnedge, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Jose Cancelas, MD, PhD

Facilitating cell culture and murine model experiments for his studies while assisting with bioinformatics and data mining for projects. (Lisa Privette-Vinnedge, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Kakajan Komurov, PhD

Breed mice for stem cell studies. (Lisa Privette-Vinnedge, PhD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Hartmut Geiger, PhD

Cdc42 inhibition for stem cell mobilization and hematopoietic cell transplant conditioning (Benjamin Mizukawa, MD, Ahmad Rayes, MD, John Perentesis, MD, FAAP)

*Experimental Hematology and Cancer Biology* » Yi Zheng, PhD
Targeting the endoplasmic reticulum stress pathways in drug-resistant breast cancers. This project aims to identify molecular and chemical methods of inhibiting triple negative breast cancers (Lisa Privette-Vinnedge, PhD, John Perentesis, MD, FAAP)

**Experimental Hematology and Cancer Biology** » Kakajan Komurov, PhD

The role of DEK in murine hematopoiesis. This project identifies and examines the hematopoietic defects, and cause of anemia, in Dek deficient mice (Lisa Privette-Vinnedge, PhD, John Perentesis, MD, FAAP)

**Experimental Hematology and Cancer Biology** » Jose Cancelas, MD, PhD, Hartmut Geiger, PhD, and Yi Zheng, PhD

**Hematology** » Theodosia Kalfa, MD, PhD

**Immunology** » Julio Aliberti, MS, PhD

Brain Development. (Biplab DasGupta, PhD, John Perentesis, MD, FAAP)

**Experimental Hematology and Cancer Biology;** » Ronald Waclaw, PhD and Qishen Pang, PhD

**Human Genetics** » Rolf Stottmann, PhD

Cincinnati Center of Neurofibromatosis Research (P50). (John Perentesis, MD, FAAP)

**Experimental Hematology and Cancer Biology** » Nancy Ratner, PhD

**Pathology** » Margaret Collins, MD

**University of Cincinnati Department of Cancer and Cell Biology** » Sara Kozma, PhD and George Thomas, PhD

High Risk Pediatric Cancer Genetics/Genomics Research (John Perentesis, MD, FAAP, Denise Adams, MD, Rajaram Nagarajan, MD, Maryam Fouladi, MD, MSc, , Brian Weiss, MD, James, Geller, MD, Michael Absalon, MD, PhD, Maureen O’Brien, MD, Karen Burns, MD, Christine Phillips, MD, Mariko DeWire, MD, Jennifer Mangino, MD, Brian Turpin, DO, Lionel Chow, MD, PhD, Benjamin Mizukawa, MD, Trent Hummel, MD, Adrienne Hammill, MD, PhD, Jennifer Davis, DO, Jordan Wright, MD, Suzanne Wells, PhD, Lisa Privette-Vinnedge, PhD, William Seibel, PhD, Rachid Drissi, PhD, Biplab DasGupta, PhD)

**Human Genetics** » Jennifer Holle, PhD, Sara Knapke, PhD, and Erin Mundt, PhD

Genetic services for oncology patients; Children's Oncology Group clinical research activities (John Perentesis, MD, FAAP)

**Human Genetics** » Liming Bao, MD, PhD and Teresa Smolarek, PhD

Molecular (FISH, SNP) characterization of TFE (translocation-type) Renal Cell Carcinoma. (James Geller, MD)

**Human Genetics** » Lisa Dyer, PhD and Teresa Smolarek, PhD

Characterization and Genetic Counseling Practices for Patients with Retinoblastoma at Cincinnati Children's Hospital Medical Center (James Geller, MD)

**Human Genetics** » Nancy Leslie, MD

Pediatric Hereditary Cancer Predisposition Clinic (James Geller, MD)

**Human Genetics** » Sara Knapke, LGC and Nancy Leslie, MD

Clinic for patients with intracranial vascular malformations, congenital and acquired, to provide comprehensive
Multidisciplinary clinical services for patients with neurofibromatosis type 2; clinical research related to neurofibromatosis type 2, including local trial of MEK inhibition to treat NF2-related central nervous system tumors. (Trent Hummel, MD, Maryam, Fouladi, MD, MSc, Mariko DeWire, MD Lionel Chow, MD, PhD)

Human Genetics » Robert Hopkin, MD and Elizabeth Schorry, MD
Neurology » Francesco Mangano, DO, FACS, FACOS
Otolaryngology » Ravi Samy, MD
Pathology » Manish Patel, DO
Radiology » Ross Ristagno, MD

HHT Clinic - providing comprehensive evaluation and treatment for individuals and families with Hereditary Hemorrhagic Telangiectasia (HHT). Working on Center of Excellence certification - in process of submitting application (Adrienne Hammill, MD, PhD)

Human Genetics » Katherine Wusik-Healy, LGC
Otolaryngology » Ravindra Elluru, MD, PhD and Charles Myer, IV, MD
Radiology » Manish Patel, DO
University of Cincinnati Interventional Radiology » Ross Ristagno, MD

Gardner fibroma: clinical and histopathologic implications of germline APC mutation association. (James Geller, MD)

Human Genetics » Nancy Leslie, MD
Pathology » Amy Sheil, MD
Radiology » Andrew Zbojniewicz, MD

Clinical services and research activities for kidney tumor patients. (James Geller, MD)

Human Genetics » Lisa Dyer, PhD and Teresa Smolarek, PhD
Pathology » Kevin Bove, MD and Mikako Warren, MD
Radiology » Eric Crotty, MD and Andrew Trout, MD
Surgery » Jaimie Nathan, MD and Gregory Tiao, MD

Phase I trial of HSV1716. (James Geller, MD)

Infectious Diseases » Beverly Connelly, MD
Investigational Pharmacy » Denise Lagory, RPh
Radiology » John Racadio, MD and Alexander Towbin, MD

Design and Contract Synthesis of Inhibitors of Midkine Expression. (William Seibel, PhD)

Neonatology and Pulmonary Biology » Yutaka Maeda, DVM, PhD and Jeffrey Whitsett, MD

Study ADVL1315 - Biomarkers of renal injury during anti-angiogenic therapy. (James Geller, MD)
Urinary Biomarkers of Acute Kidney Injury in Children with Cancer receiving Nephrotoxic Chemotherapy. (Maureen O’Brien, MD)

Visual pathway research for children with retinal or optic pathway tumors. (James Geller, MD)

Vincristine morbidity in children with hepatoblastoma. (James Geller, MD)

Culture and xenografts of pediatric brain tumors. (Lionel Chow, MD, PhD)

Prognostic Role of Telomerase Expression in Pediatric High-Grade Gliomas. Telomerase Activity and hTERT mRNA Expression Predict Shorter Progression-free and Overall Survival in Pediatric Medulloblastoma. (Rachid Drissi, PhD, Maryam Fouladi, MD, MSc, Kathleen Dorris, MD)

A Pilot Study of SAHA in combination with 13-cis-retinoic acid for high risk medulloblastoma/PNET following craniospinal irradiation therapy and high dose chemotherapy with stem cell rescue, A phase II study of SAHA in combination with 13-cis-retinoic acid in recurrent/refractory medulloblastoma/PNET, ATRT, ependymoma, high grade glioma. (Mariko DeWire, MD, Rachid Drissi, PhD, Maryam Fouladi, MD, MSc)

Fertility Consultation Service for oncology patients. (Karen Burns, MD)

Locoregional therapy (intra-arterial and intravitreal chemotherapy) for Retinoblastoma. (James Geller, MD)

Hemangioma & Vascular Malformation Clinic Effective of Knee surgery for children with vascular malformation of the knee. (Denise Adams, MD, Adrienne Hammill, MD, PhD, Biplab DasGupta, PhD)
Evaluation of sentinel node biopsies (Rajaram Nagarajan, MD, Brian Turpin, DO, Biplab DasGupta, PhD)

Orthopedics Surgery » Joel Sorger, MD

Multidisciplinary clinical services for patients with musculoskeletal sarcoma (Rajaram Nagarajan, MD Brian Turpin, DO, James Geller, MD)

Orthopaedic Surgery » Joel Sorger, MD
Pathology » Amy Shiel, MD
Radiology » Neil Johnson, MD and Tal Laor, MD
Rehabilitation Medicine » David Pruitt, MD
University of Cincinnati Radiation Oncology » John Brenneman, MD and Luke Pater, MD

Molecular characteristics of Angiosarcoma (Lionel Chow, MD, PhD).

Pathology » Anita Gupta, MD

ACNS0822: a randomized phase II/III study of suberoylanilide hydroxamic acid (SAHA) (IND# 71976) and local irradiation or temozolomide and local irradiation or arsenic trioxide and local irradiation followed by maintenance bevacizumab (IND# 7921) and irinotecan in children with newly diagnosed high-grade glioma. (Maryam Fouladi, MD, MSc, James Geller, MD, Rachid Drissi, PhD)

Pathology » Lili Miles, MD

Characterization of mouse glioma models. (Lionel Chow, MD, PhD)

Pathology » Lili Miles, MD

hTERTExpression Predicts Shorter Progression-Free and Overall Survival in Pediatric Medulloblastoma(Rachid Drissi, PhD, Maryam Fouladi, MD, MSc, Kathleen Dorris, MD)

Pathology » Lili Miles, MD

Pathology services for oncology patients; Children’s Oncology Group clinical research activities (John Perentesis, MD, FAAP)

Pathology » Margaret Collins, MD, Richard McMasters, MD, Lili Miles, MD, and David Witte, MD

Cincinnati Children’s to develop an assay for High-grade patents eligibility. (Rachid Drissi, PhD)

Pathology » David Witte, MD

Molecular characterization of tumor tissue and cells derived from patients with Brain tumors (Rachid Drissi, PhD)

Pathology » Lili Miles, MD
Neurosurgery » Charles Stevenson, MD

Clinical services for neuroblastoma patients; clinical research related to neuroblastoma. (John Perentesis, MD, FAAP, Brian Weiss, MD)

Pathology » David Witte, MD
Radiology » Michael Gelfand, MD, Susan Sharp, MD, and Alexander Towbin, MD

Rehabilitation services for oncology patients; Children’s Oncology Group and other clinical research activities (John Perentesis, MD, FAAP)
Physical Medicine and Rehabilitation » David Pruitt, MD

Pediatric Cancer Psychology & Family Wellness Research & Clinical Program (John Perentesis, MD, FAAP)

**Psychiatry** » Mark Johnson, MD
**Behavioral Medicine and Clinical Psychology** » Ahna Pai, PhD

Nuclear medicine services for oncology patients; Children's Oncology Group clinical research activities (John Perentesis, MD, FAAP)

**Radiology** » Michael Gelfand, MD and Alexander Towbin, MD

FDG-PET imaging of translocation renal cell carcinoma. (James Geller, MD)

**Radiology** » Andrew Trout, MD

Director: Multidisciplinary Solid Tumor Board - a weekly educational session pertaining to solid tumors, for all levels of care providers. (James Geller, MD)

**Radiology** » Alexander Towbin, MD
**Pathology** » Kevin Bove, MD
**Thoracic Surgery** » Daniel von Allmen, MD

Protocol Chair: CCHMC IARB1 – (IND# 111358) - A Pilot Study of Intra-Ophthalmic Artery Topotecan Infusion for the Treatment of Retinoblastoma. (James Geller, MD)

**Radiology** » Todd Abruzzo, MD
**Ophthalmology** » James Augsburger, MD

Advancement of High Frequency Ultrasound (HIFU) for pediatric oncology patients. (James Geller, MD)

**Radiology** » Brian Cooley, MD, Charles Dumoulin, PhD, Daniel Podberesky, and John Racadio, MD
**Thoracic Surgery** » Daniel von Allmen, MD

Pediatric Liver Cancer Genomics & Biology (John Perentesis, MD, FAAP, James Geller, MD)

**Surgery** » Nikolai Timchenko, PhD

Surgical services for oncology patients; Children's Oncology Group clinical research activities (John Perentesis, MD, FAAP)

**Surgical Services** » Richard Azizkhan, MD
**Surgery** » Gregory Tiao, MD

Cincinnati Children’s Hospital Medical Center Particle Beam/Proton Research Initiative (John Perentesis, MD, FAAP, Yi Zheng, PhD)

**University of Cincinnati – Barrett Cancer Center Radiation Oncology** » Luke Pater, MD
**Cancer & Cell Biology** » Jun-Lin Guan, PhD, Peter Stambrook, MD, Susan Waltz, PhD, and Michael Lamba, MD
**College of Arts & Sciences/Physics** » Kay Kinoshita, MD
**College of Design, Architecture, Art & Planning** » Craig Vogel, MID
**Engineering, Radiation Physics** » David Mast, PhD and Mark Schulz, PhD
Medicinal Chemistry Consultation and supply of compounds Stabilizing PCNA trimerization. (William Seibel, PhD)

**University of Cincinnati Cancer and Cell Biology** » Zhongyun Dong, MD, PhD

Medicinal Chemistry Consultation and supply of compounds inhibiting PKCio. (William Seibel, PhD)

**University of Cincinnati Cancer and Cell Biology** » Ken Greis, PhD

Medicinal Chemistry Consultation and supply of compounds related to Prolactin antagonist activity. (William Seibel, PhD)

**University of Cincinnati Cancer and Cell Biology** » Nira Ben-Jonathan, PhD and Eric Hugo, PhD

Provide technical services with murine models of breast cancer, intellectual input, career mentoring. (Lisa Privette-Vinnedge, PhD)

**University of Cincinnati Cancer and Cell Biology** » Susan Waltz, PhD

Molecular functions of the DEK oncogene in breast cancer pathogenesis (Lisa Privette-Vinnedge, PhD, Suzanne Well, PhD)

**University of Cincinnati Cancer and Cell Biology** » Susan Waltz, PhD

Pediatric Cancer Metabolomics & Biology (John Perentesis, MD, FAAP, Suzanne Wells, PhD)

**University of Cincinnati Cancer and Cell Biology** » Kenneth Greis, PhD

Developing a novel RNA nanoparticle for the simultaneous imaging and treatment of breast cancer (Lisa Privette-Vinnedge, PhD)

**University of Cincinnati Cancer and Cell Biology** » Xiaotling Zhang, PhD

**University of Cincinnati Environmental Health** » Pheruza Tarapore, PhD

**University of Cincinnati Hematology/Oncology** » Trisha Wise-Draper, MD, PhD

**University of Cincinnati Radiation Oncology** » Kris Huang, MD and William Porter, MD

**University of Cincinnati Radiation & Nuclear Medicine** » Mariano Fernandez-Ulloa, MD

**University of Cincinnati Surgical Oncology** » Syed Ahmad, MD

Pediatric leukemia, solid tumor, and brain tumor drug discovery screening. (John Perentesis, MD, FAAP, Brian Weiss, MD, Michael Absalon, MD, PhD, Maureen O’Brien, MD)

**University of Cincinnati Drug Discovery Center** » Ruben Papoian, PhD

Provide shared reagents and intellectual input regarding hormone studies, co-mentor and co-author. (Lisa Privette-Vinnedge, PhD)

**University of Cincinnati Environmental Health** » Shuk-Mei Ho, PhD

Gene targets of steroid hormone signaling in breast cancer (Lisa Privette-Vinnedge, PhD)

**University of Cincinnati Environmental Health** » Shuk-Mei Ho, PhD

Cancer – Role of AMPK in autophagy. Autophagy in TFE (Translocation-type) RCC. (James Geller, MD)

**University of Cincinnati Hematology/Oncology** » Maria F. Czyzyk-Krzeska, M.D., PhD

Examining the clinical relevance of DEK as a clinical biomarker of progression and potential therapeutic target in
solid tumors (Lisa Privette-Vinnedge, PhD)

University of Cincinnati Hematology/Oncology » Elyse Lower, MD and Trisha Wise-Draper, MD, PhD

Cheminformatics library analysis and supply of compounds. (William Seibel, PhD)

University of Cincinnati Hematology/Oncology » James Driscoll, MD, PhD

University of Cincinnati Pharmacology & Cell Biophysics » Terry Kirley, PhD

Cheminformatics library analysis and supply of compounds. (William Seibel, PhD)

University of Cincinnati Pharmacology & Cell Biophysics » Terry Kirley, PhD

Next Generation Cancer Survivorship – Internal Medicine Education Program (John Perentesis, MD, FAAP, Karen Burns, MD, Rajaram Nagarajan, MD)

University of Cincinnati Internal Medicine » Jonathan Tolentino, MD

Providing reagents and samples for analysis. (Lisa Privette-Vinnedge, PhD)

University of Cincinnati College of Pharmacy » Pankaj Desai, PhD and Georg Weber, MD, PhD

GBM Model in rat. Preclinical testing of aromatase inhibitor in glioma. (Lionel Chow, MD, PhD)

University of Cincinnati College of Pharmacy » Pankaj Desai, PhD

Radiation oncology clinical services for oncology patients; Children’s Oncology Group clinical research activities (John Perentesis, MD, FAAP)

University of Cincinnati Division of Radiation Oncology » John Breneman, MD and Ruth Lavigne, MD

Grants, Contracts, and Industry Agreements

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<tr>
<th>Grant and Contract Awards</th>
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<td>Ohio State University Comprehensive Cancer Center</td>
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<td>Molecular Targeting of High-Grade Astrocytoma</td>
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<td>The Sontag Foundation</td>
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<td>Molecular Targeting of Pediatric High-Grade Glioma</td>
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<td>Regulation of Forebrain Neurogenesis by the Energy Sensor AMP Kinase</td>
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FOULADI, M

**NIH COG Study Chair**  
National Institutes of Health (Children's Hospital of Philadelphia)  
U10 CA 098543  
04/13/13-02/28/15  
$11,550

**Establishment of an International Diffuse Intrinsic Pontine Glioma (DIPG) Registry**  
The Cure Starts Now Foundation  
01/01/12-12/31/14  
$205,000

**The Pediatric Brain Tumor Consortium - Per Patient**  
National Institutes of Health (St. Jude Children's Hospital)  
U01 CA 08155  
04/01/11-03/31/15  
$23,195

**The Pediatric Brain Tumor Consortium**  
National Institutes of Health (St. Jude Children's Hospital)  
UM1 CA 081457  
04/01/11-03/31/19  
$121,496

GELLER, J

**NIH COG Phase 1 Study Chair**  
National Institutes of Health (Children's Hospital of Philadelphia)  
UM1 CA 097452  
08/01/12-07/31/17  
$11,550

**Epigenetic and Clinical Impact of SMARCB1 Loss in Cancer**  
National Institutes of Health (Children's Memorial Hospital)  
07/01/12-06/30/14  
$6,954

LEE, J

**Proliferation Control of DIPG Cells by AMP Linase Inhibition**  
Joshua's Wish  
06/01/14-05/31/15  
$5,000

MIZUKAWA, B

**Targeted Inhibition of Cdc42 GTPase in the Acute Myeloid Leukemia Stem Cell**  
St. Baldrick's Foundation  
07/01/13-06/30/16  
$110,000

PERENTESIS, J

**Children's Oncology Group Chair - Workload Intensity**  
National Institutes of Health (Children's Hospital of Philadelphia)  
U10 CA 098543  
03/01/12-02/28/17  
$27,797

**Children's Oncology Group Chair - per patient**  
National Institutes of Health (Children's Hospital of Philadelphia)  
U10 CA 098543  
03/01/12-02/28/17  
$144,883

**CHOP/COG ADVL0921**  
Millennium Pharmaceuticals (Children's Hospital of Philadelphia)  
01/01/14-12/31/16  
$3,080
COG Supplemental Reimbursement
St. Baldrick's Foundation (Children's Hospital of Philadelphia)
03/01/12-02/18/17 $46,970

CHOP/COG AALL0932
National Institutes of Health (Children's Hospital of Philadelphia)
HHSN261200800001E 03/30/12-06/30/15 $4,620

Pediatric Phase I - Pilot Consortium (per case)
National Institutes of Health (Children's Hospital of Philadelphia)
UM1 CA 097452 07/24/12-05/31/15 $12,320

Pediatric Phase I Scientific Leadership
National Institutes of Health (Children's Hospital of Philadelphia)
UM1 CA 097452 09/26/12-07/31/15 $11,501

COG ADVL1213
Morphotek (Children's Hospital of Philadelphia)
01/01/14-12/31/16 $8,778

COG Community Clinical Oncology Program
National Institutes of Health (Children's Hospital of Philadelphia)
U10 CA 095861 08/01/13-07/31/16 $808

COG Cancer Trial Support Unit
National Institutes of Health (Children's Hospital of Philadelphia)
03/01/14-02/28/17 $9,240

COG AALL1131
National Institutes of Health (Children's Hospital of Philadelphia)
01/01/14-12/31/16 $3,080

COG AALL1121
Amgen (Children's Hospital of Philadelphia)
05/01/12-04/30/15 $9,269

PHILLIPS, C

Genetic Model of Cytarabine Sensitivity in Children with AML
American Association for Cancer Research
07/01/12-06/30/14 $50,000

PRIVETTE, L

Cincinnati Interdisciplinary Women's Health Research Career Training Grant
National Institutes of Health (University of Cincinnati)
K12 HD 051953 07/01/12-06/30/14 $82,385

Defining the Role of the DEK Oncogene in Breast Cancer Stem Cell Tumorigenicity And Pre-Clinical Testing of Therapeutic DEK Targeting Strategies
Ride Cincinnati Foundation
06/01/14-05/31/15 $40,000

RAYES, A

Mobilization with CASIN as a Preparative Regimen in Bone Marrow Transplant Therapy
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<td><strong>ETV2 Role in Tumor-Induced Lymphangiogenesis, A Putative Therapeutic Target</strong></td>
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**Current Year Direct Receipts** $293,647

**Total** $2,391,991