

Division Photo



Left to Right (Seated): F. Smith, B. Lampkin; First Row: C. Joiner, E. Mullins, T. Kalfa, J. Palumbo, T. Cripe, S. Wells, B. Dasgupta, D. Adams, J. Perentesis, P. Malik; Second Row: R. Drissi, B. Weiss, A. Perumbeti, T. Hummel, L. Wagner, M. Jordan, R. Nagarajan, R. Gruppo

Division Data Summary

Research and Training Details

Number of Faculty	30
Number of Joint Appointment Faculty	6
Number of Research Fellows	4
Number of Research Students	1
Number of Support Personnel	187
Direct Annual Grant Support	\$4,384,421
Direct Annual Industry Support	\$142,754
Peer Reviewed Publications	91

Clinical Activities and Training

Number of Clinical Staff	5
Number of Clinical Fellows	13
Inpatient Encounters	1,326
Outpatient Encounters	15,210

Significant Publications

J Clin Oncol 26(22): 3749-55

Fouladi, M., M. Chintagumpala, D. Ashley, S. Kellie, S. Gururangan, T. Hassall, L. Gronewold, C. F. Stewart, D. Wallace, A. Broniscer, G. A. Hale, K. A. Kasow, T. E. Merchant, B. Morris, M. Krasin, L. E. Kun, J. M. Boyett and A. Gajjar (2008). "Amifostine protects against cisplatin-induced ototoxicity in children with average-risk medulloblastoma."

This study was the first to demonstrate that an agent, in this case, amifostine, administered before and during the cisplatin infusion can significantly reduce the risk of severe ototoxicity in patients with average-risk medulloblastoma receiving dose-intense chemotherapy.

Blood 112(10): 4284-91

Cohen, R. M., R. S. Franco, P. K. Khera, E. P. Smith, C. J. Lindsell, P. J. Ciralo, M. B. Palascak and **C. H. Joiner** (2008). "Red cell life span heterogeneity in hematologically normal people is sufficient to alter HbA1c."

Glycosylated hemoglobin (Hb A1c) is used to assess diabetic control for millions of American. This paper demonstrates that inter-individual variation in red blood cell lifespan can alter Hb A1c measurements sufficiently to affect clinical diabetic management.

Clin Immunol 132(1): 116-23

Marsh, R. A., J. Villanueva, **M. O. Kim**, K. Zhang, D. Marmer, K. A. Risma, **M. B. Jordan**, **J. J. Bleesing** and **A. H. Filipovich** (2009). "Patients with X-linked lymphoproliferative disease due to BIRC4 mutation have normal invariant natural killer T-cell populations."

We have observed that patients with XLP due to XIAP deficiency have normal populations of iNKT cell, thus differentiating them from patients with XLP due to SAP deficiency, and suggesting that XIAP is not a requirement for iNKT cell development as previously thought.

Blood 113(3): 696-704

Mullins, E. S., K. W. Kombrinck, K. E. Talmage, M. A. Shaw, D. P. Witte, J. M. Ullman, S. J. Degen, W. Sun, M. J. Flick and J. L. Degen (2009). "Genetic elimination of prothrombin in adult mice is not compatible with survival and results in spontaneous hemorrhagic events in both heart and brain."

This manuscript was the first report of a floxed soluble coagulation protein, prothrombin, and its necessity for maintenance of vascular integrity in the heart and central nervous system in adult mice. It was furthermore reported that prothrombin is essential in clearance of *S. aureus* from the peritoneum in an experimental setting of peritonitis.

Oncogene 27(35): 4798-808

Hoskins, E. E., R. W. Gunawardena, K. B. Habash, T. M. Wise-Draper, M. Jansen, E. S. Knudsen and **S. I. Wells** (2008). "Coordinate regulation of Fanconi anemia gene expression occurs through the Rb/E2F pathway."

This manuscript describes the transcriptional co-regulation of multiple components of the nuclear Fanconi anemia complex in synchrony with the cell cycle and through E2F/Rb pathways. Based on the data, transcriptional deregulation of individual FA genes - in addition to mutation - may contribute to the development of HPV-associated cancers.

Division Collaboration

Collaboration with Experimental Hematology & Cancer Biology; Pediatric & Thoracic Surgery; Developmental Biology-Students

Collaborating Faculty: J. Cancelas; T. Crombleholme; W. Baird

Tissue inhibitor of metalloproteinase-3 via oncolytic herpesvirus inhibits tumor growth and vascular progenitors. *Cancer Res* 68:1170-1179, 2008 (T. Cripe; Y. Mahller)

Collaboration with Translational Research Trials Office; Infectious Diseases; Immunobiology

Collaborating Faculty: R. Gillespie; N. Sawtell; D. Hildeman

Efficacy and safety of the oncolytic herpes simplex virus rRp450 alone and combined with cyclophosphamide. *Mol Ther* 16:879-885, 2008 (T. Cripe; M. Currier; Y. Mahller)

Collaboration with Biomedical Informatics; Developmental Biology-Students

Collaborating Faculty: B. Sakthivel; B. Aronow; W. Baird

Molecular analysis of human cancer cells infected by a multi-mutated oncolytic HSV-1 reveals a role for SOCS1 in virus replication. *Cancer Gene Therapy*, in press 2008 (T. Cripe; Y. Mahller)

Collaboration with Experimental Hematology & Cancer Biology; Pathology; Biostatistics & Epidemiology; Experimental Hematology & Cancer Biology

Collaborating Faculty: G. Johansson; M. Collins; K. Mi-Ok; N. Ratner

Effective in vivo targeting of the mTOR pathway in malignant peripheral nerve sheath tumors. *Mol Cancer Ther* 7:1237-1245, 2008. (T. Cripe; Y. Mahller; J. Perentesis)

Collaboration with Endocrinology; Behavioral Medicine & Clinical Psychology

Collaborating Faculty: S. Rose;

A pilot study of oxandrolone in children with Fanconi Anemia and severe bone marrow failure (F. Smith)

Collaboration with Surgical Services

Collaborating Faculty: R. Azizkhan

COG, Surgery services for Oncology patients

Collaboration with UC Radiation Oncology

Collaborating Faculty: J. Breneman; Ruth Lavigne

Radiation Oncology clinical services for Hem/Onc patients; COG

Collaboration with Human Genetics

Collaborating Faculty: Liming Bao; T Smolarek

COG; Genetic services for HemOnc Patients

Collaboration with Pathology

Collaborating Faculty: M. Collins

COG; Pathology services

Collaboration with Behavioral Medicine and Clinical Psychology

Collaborating Faculty: D. Drotar; A. Pai

COG; Adherence Research

Collaboration with Radiology

Collaborating Faculty: M. Gelfand

COG; Cancer Nuclear Medicine services

Collaboration with Orthopaedics

Collaborating Faculty: CT Mehlman

COG; Brain Tumor research and clinical services

Collaboration with Experimental Hematology & Cancer Biology

Collaborating Faculty: J. Mulloy

Leukemia Research; COG

Collaboration with Endocrinology

Collaborating Faculty: S. Rose; M. Rutter

COG; FA research, NeuroOncology Research, Endocrinology services as part of clinic

Collaboration with University of Cincinnati

Collaborating Faculty: George Thomas

COG; Drug Development

Collaboration with Pediatric & Thoracic Surgery

Collaborating Faculty: G. Tiao

COG; Cancer Surgery

Collaboration with Clinical Pharmacology

Collaborating Faculty: A. Vinks

COG; Developmental Therapeutics research; Neurofibromatosis clinical research, New fellowship program in Developmental Therapeutics

Collaboration with Anesthesia

Collaborating Faculty: N. Weidner

COG; Palliative care and pain

Collaboration with PM&R

Collaborating Faculty: D. Pruitt

NeuroOncology Clinic

Collaboration with University of Cincinnati - Oncology

Collaborating Faculty: M Gerena-Lewis
Medical Oncology and NeuroOncology services

Collaboration with Experimental Hematology & Cancer Biology

Collaborating Faculty: P. Malik
Comprehensive Sickle Cell Center; Gene Transfer into Hematopoietic Stem Cells. (C. Joiner)

Collaboration with University of Cincinnati – Division of Hematology Oncology

Collaborating Faculty: Robert Franco, George Atweh
Comprehensive Sickle Cell Center; Sickle Cell pathophysiology, Fetal Hemoglobin Induction
Br. J Haematol. 146: 447 – 455, 2009. (C. Joiner)

Collaboration with University of Cincinnati – Division of Endocrinology

Collaborating Faculty: Robert Franco; Robert Cohen
Comprehensive Sickle Cell Center: Red Blood Cell Survival and hemoglobin glycosylation.
Blood. 2008;112(10):4284-91. Diabetes. 2008;57(9):2445-52. (C. Joiner)

Collaboration with Developmental Biology

Collaborating Faculty: Jay Degen
Hemophilia, Thrombophilia program: Role of coagulation programs in cancer metastasis (J. Palumbo)

Collaboration with Behavioral Medicine & Clinical Psychology

Collaborating Faculty: Monica Mitchell
Comprehensive Sickle Cell Center; Adherence to hydroxyurea therapy. (K. Kalinyak)

Collaboration with Developmental Biology

Collaborating Faculty: Dr. Jay Degen
Hemophilia, Thrombophilia program: Role of Prothrombin in inflammation. Blood. 2009 ;113(3):696-704. (E. Mullins)

Collaboration with Clinical Pharmacology ; Experimental Hematology & Cancer Biology

Collaborating Faculty: A. Vinks; P Malik
Comprehensive Sickle Cell Center; Zileuton therapy for sickle cell disease (K. Kalinyak, C. Joiner)

Collaboration with Experimental Hematology & Cancer Biology; Pulmonary Medicine

Collaborating Faculty: P. Malik; W. Hardie
Comprehensive Sickle Cell Center; Inflammation in Sickle Cell Disease. (K. Kalinyak)

Collaboration with Experimental Hematology & Cancer Biology; Cardiology; Pulmonary Medicine; Radiology

Collaborating Faculty: P. Malik; J. Towbin; W. Gottleibson; C. Kerschmar; R. Fleck
Comprehensive Sickle Cell Center; Cardiovascular Complications of Sickle Cell Disease. (K. Kalinyak, C. Joiner)

Collaboration with Experimental Hematology & Cancer Biology

Collaborating Faculty: Y. Zheng
Comprehensive Sickle Cell Center; Signaling pathways in red blood cells. (T. Kalfa)

Collaboration with Department of Anesthesia

Collaborating Faculty: D. Kurth
Hematology Program; Clinical evaluation of transcutaneous hemoglobin analysis. (K. Kalinyak, C. Joiner)

Collaboration with Radiology ; Neurosurgery; Pathology

Collaborating Faculty: A. Towbin; T. Maugans; H. Yin
Neuroblastoma program: Rayburg M, Towbin A, Yin H, Maugans T, Mauer, B, Nagarajan R, Weiss “Langerhans cell histiocytosis in a patient with stage 4 neuroblastoma receiving oral fenretinide.” In press, Pediatr Blood Cancer. (B. Weiss)

Collaboration with Surgery; Radiology; Pathology

Collaborating Faculty: M. Leonis; G. Tiao; F. Ryckman; A. Towbin; A. Gupta
Hepatoblastoma Working Group (L Wagner)

Collaboration with University of Cincinnati Genome Research Institute

Collaborating Faculty: G. Thomas
Correlative studies for COG trial chaired by Lars Wagner

Collaboration with Radiology; Pathology

Collaborating Faculty: A. Towbin; M. Collins; H. Yin

Chordoma in Children and Young Adults (R. Nagarajan)

Collaboration with University of Cincinnati Internal Medicine; Human Genetics; Physical Medicine and Rehabilitation; Endocrinology and Neuropsychology

Collaborating Faculty: M. Gerena-Lewis; D. Pruitt; S. Rose; M. Rutter

Clinical services for Cancer Survivor Center

Collaboration with Radiology; Nephrology; Urology

Collaborating Faculty: A. Towbin; J. Bissler; B. DeFoor

Characterization of Clinical Correlates in Children with Complex Renal Cysts. (J. Geller)

Collaboration with Nephrology; Pathology

Collaborating Faculty: J. Bissler; J. Mo

Translocation Renal Cell Carcinoma Associated with Immunosuppressive Therapy in Two Patients with Refractory Focal Segmental Glomerulosclerosis (J. Geller)

Collaboration with Pathology; General Pediatrics

Collaborating Faculty: A. Gupta; C. Ebens

Wilms Tumor, Aniridia, Genitourinary malformation, and Mental Retardation (WAGR Syndrome) associated with Congenital Extrahepatic Biliary Atresia. (J. Geller)

Collaboration with Nephrology; Human Genetics

Collaborating Faculty: J. Bissler; N. Leslie; T. Smolarek

Characterization of Constitutional 11p15 Abnormalities in Wilms' Tumor Predisposed Patients. (J. Geller)

Collaboration with Hepatology; Liver Transplant

Collaborating Faculty: J. Nathan; G. Tiao; F. Ryckman; M. Alonso; M. Leonis; J. Bucuvalas; K. Campbell

Early Chemotherapy Response and Identification of Liver Transplant Candidates in Patients with Unresectable Hepatoblastoma (J. Geller, L. Wagner)

Collaboration with Pathology

Collaborating Faculty: A. Gupta; M. Khalequzzaman; K. Bove

Well Differentiated Hepatocellular Neoplasms in Children: Are immunostains helpful? (J. Geller)

Collaboration with Hepatology; Liver Transplant

Collaborating Faculty: M. Leonis; G. Tiao

Hepatic Tumor Markers post-Liver Transplantation (J. Geller)

Collaboration with Ophthalmology (UC)

Collaborating Faculty: J. Augsburger

Topotecan in the treatment of relapsed/refractory intraocular retinoblastoma (J. Geller)

Collaboration with Ophthalmology (UC, CCHMC), ; Radiology; Pathology (UC)

Collaborating Faculty: J. Augsburger; R. North; B. Jones; Z. Correa

Topotecan, Vincristine and subconjunctival Carboplatin to treat recurrent/refractory intraocular retinoblastoma (J. Geller)

Collaboration with Interventional Radiology

Collaborating Faculty: J. Augsburger; T. Abruzzo

Intra-arterial chemotherapy in the treatment of retinoblastoma (J. Geller)

Collaboration with Radiology; Neurosurgery

Collaborating Faculty: B. Jones; F. Mangano

The Clinical Heterogeneity of Desmoplastic Infantile Ganglioglioma (J. Geller, T. Hummel)

Collaboration with Adolescent Medicine and Gynecology; General Surgery; Pathology

Collaborating Faculty: L. Ayensu-Coker; L. Breech; R. Dasgupta; R. McMasters

Management of Ovarian Masses at Cincinnati Children's Hospital Medical Center (J. Geller)

Faculty Members

Franklin O. Smith, MD, Professor ; *Marjory J. Johnson Endowed Chair; Director, Hematology/Oncology; Director, Hematology/Oncology Fellowship Program*

Research Interests: Acute myeloid leukemia

Michael Absalon, MD, PhD, Assistant Professor Clinical

Research Interests: New therapeutics; ataxia telangiectasia; DNA damage response mechanisms

Denise M. Adams, MD, Associate Professor Clinical ; *Inpatient Clinical Director; Medical Director of Comprehensive Hemangiomas and Vascular Malformation Clinic;*

Research Interests: Research in angiogenesis, endothelial cell proliferation, vascular anomalies.

Jacob Bleesing, MD, PhD, Associate Professor Clinical

Research Interests: Clinical Investigation of Primary Immunodeficiency Disorders, with emphasis on disorders of immunodysregulation and B-cell disorders

Karen Burns, MD, Assistant Professor Clinical

Research Interests: Outcomes following cancer therapy and outcomes following bone sarcomas

Timothy Cripe, MD, PhD, Professor ; *Director, Musculoskeletal Tumor Comprehensive Clinic; Director, Translational Research Trials Office*

Research Interests: Transcriptional regulation; genetic perturbations in cancer; gene therapy of cancer; gene transfer; transcriptional targeting; antiangiogenesis; viral oncolysis; viral oncogenesis

Stella M. Davies, MBBS, PhD, MRCP, Professor ; *Jacob G. Schmidlapp Endowed Chair; Director, Blood and Marrow Transplant Program*

Rachid Drissi, PhD, Assistant Professor

Research Interests: Examine telomere disruption signaling to DNA damage pathway

Alexandra Filipovich, MD, Professor ; *Ralph J. Stolle Chair in Clinical Immunology; Director, Immunodeficiency and Histiocytosis Program; Medical Director, Diagnostic Laboratory*

Research Interests: Immunoreconstitution Following Pediatric Stem Cell Transplantation

Maryam Fouladi, MD, FRCP, Associate Professor Clinical ; *Director, Neuro-Oncology Program*

Research Interests: Developing novel drugs for the treatment of children with recurrent or poor prognosis brain tumors

James I. Geller, MD, Assistant Professor Clinical

Research Interests: Solid and brain tumors, with a specific interest in new drug development. Leads renal, liver and retinoblastoma initiative

Ralph A Gruppo, MD, Professor Clinical ; *Director, Hemophilia Thrombosis Center*

Research Interests: Coagulation; hemophilia; thrombosis

Richard E. Harris, MD, Professor Clinical

Research Interests: Transplantation for children with bone marrow failure syndromes and aplastic anemia

Trent Hummel, MD, Instructor Clinical

Sonata Jodele, MD, Assistant Professor Clinical

Research Interests: Phase I clinical trials; new anticancer drug development; stem cell transplantation; high risk pediatric malignancies; childhood neuroblastoma

Clinton H. Joiner, MD, PhD, Professor ; *Interim Director, Hematology Program*

Research Interests: Sickle cell disease and other hemoglobinopathies

Theodosia Kalfa, MD, PhD, Assistant Professor

Research Interests: study of erythropoiesis and red blood cell structural membrane biology

Karen Ann Kalinyak, MD, Professor Clinical ; *Hematology Clinical Director*

Research Interests: Hematology; bone marrow failure; sickle cell anemia; hemoglobinopathy

Beatrice Lampkin, MD, Professor Emerita ; *Jacob G. Schmidlapp Endowed Chair*

Thomas Leemhuis, PhD, Associate Professor

Rebecca Marsh, MD, Instructor Clinical

Parinda Mehta, MD, Assistant Professor

Research Interests: Blood and Marrow Transplant, Fanconi anemia, Pharmacogenetics and Pharmacokinetics

Eric Mullins, MD, Instructor Clinical

Rajaram Nagarajan, MD, Assistant Professor Clinical

Research Interests: Outcomes following cancer therapy and outcomes following bone sarcomas

Joseph S. Palumbo, MD, Research Assistant Professor

Research Interests: Interactions between the hemostatic system and innate immunity effecting tumor progression

John Perentesis, MD, Professor ; *Deb Kleisinger Endowed Chair and Professor of Pediatrics; Director, Oncology Program*

Research Interests: Recombinant cancer therapeutics and molecular mechanisms for drug action

Janos Sumegi, MD, PhD, Professor

Research Interests: Lymphoproliferative disease, Hemphagocytic Lymphohisstiocytosis, Usher syndrom

Lars Wagner, MD, Associate Professor Clinical

Research Interests: Treatment of neuroblastoma, sarcomas, and brain tumors

Brian D. Weiss, MD, Assistant Professor Clinical

Research Interests: Targeted Agents for Neurofibromatosis Type 1-Related Malignancies (including plexiform neurofibromas, optic pathway gliomas, and Juvenile Myelomonocytic Leukemia)

Susanne Wells, PhD, Associate Professor

Research Interests: Papillomavirus biology, molecular mechanisms of cellular growth and senescence

Joint Appointment Faculty Members

Michael Jordan, MD, Assistant Professor

Immunobiology

Regulation of the immune response; immunotherapy of cancer

Mi-Ok Kim, PhD, Assistant Professor

Center for Epidemiology and Biostatistics

Punam Malik, MD, Associate Professor

Experimental Hematology and Cancer Biology

Ahna Pai, PhD, Assistant Professor

Adherence Psychology

Sualius Sumanas, PhD, Assistant Professor

Developmental Biology

Mary Sutton, MD, Assistant Professor

Neurology

Clinical Staff Members

- **Sarita Joshi, MBBS, MD**
- **Ernest Lawhorn, MD**
- **Anna Pesok, MD**
- **Philip Roehrs, MD**
- **Gregory Wallace, DO**

Trainees

- **Kathleen Dorris, MD**, PL-IV, Children's Memorial Hospital, Northwestern University
- **Teresa Finke, MD**, PL-IV, IU School of Medicine Combined Medicine & Pediatrics
- **Sarah Fitzgerald, MD**, PL-IV, Rainbow Babies & Children's Hospital/University of Cleveland
- **Alex George, MD, PhD**, PL-IV, Cincinnati Children's Hospital Medical Center
- **Adrienne Hammill, MD, PhD**, PL-V, Cincinnati Children's Hospital Medical Center
- **Theodore Johnson, MD, PhD**, PL-V, Medical College of Georgia
- **Sabine Mellor-Heineke, MD**, PL-VI, Staedtisches Klinikum Braunschweig
- **Benjamin Mizukawa, MD**, PL-V, Cincinnati Children's Hospital Medical Center
- **Kasiani Myers, MD**, PL-V, Cincinnati Children's Hospital Medical Center
- **Ajay Perumbeti, MD**, PL-VII, Upstate Medical University
- **Christine Phillips, MD**, PL-VI, Children's Memorial Hospital Chicago

- **Jennifer Pope, MD**, PL-IV, Medical College of Wisconsin
- **Melissa Rayburg, MD**, PL-VI, University of Texas Health Science Center

Significant Accomplishments

Oncology Program: New Translational Therapies for Brain Tumors

Our approach to brain tumors includes innovative surgical techniques, such as intra-operative magnetic resonance imaging (MRI), advanced “focused” radiosurgical techniques, and clinical research emanating from our laboratories using molecularly-targeted therapies and, in high dose chemotherapy applications – chemoprotection medications. These initiatives are led by CCHMC oncology faculty Drs. Maryam Fouladi and Trent Hummel with studies based at CCHMC, or extended to other pediatric centers by virtue of leadership roles in national consortia. One such protocol is an institutional pilot study for patients with newly diagnosed high-grade gliomas and diffuse intrinsic brain stem gliomas. This protocol incorporates a promising antiangiogenic agent with standard therapy and is also asking several important questions regarding the biology of these tumors, quality of life and functional outcome of patients with these poor-prognosis tumors.

Hematology Program: Sickle Cell Disease Clinical Research Network

Clinton H. Joiner, MD, PhD, was appointed Director of the Hematology Program. Dr. Joiner will continue as director of the Comprehensive Sickle Cell Center, which he has led since 1995.

Comprehensive Sickle Cell Center received a grant from the National Heart, Lung, and Blood Institute (NHLBI) to participate in the Sickle Cell Disease Clinical Research Network. The Center leads a consortium that includes University of Cincinnati, Ohio State University, and Nationwide Children’s Hospital of Columbus that will conduct clinical trials of new treatments for sickle cell disease.

Blood and Marrow Transplantation Program: Genetic Studies

Researchers in the Blood and Marrow Transplant program are the first researchers in the US to investigate the clinical consequences of mutation in the gene BIRC4. Children with this genetic disorder have a lymphoproliferative disorder, with markedly increased risk of lymphoma and a defective immune system. The CCHMC researchers, lead by Drs. Lisa Filipovich and Rebecca Marsh have described a new diagnostic test for this disorder and are describing the clinical and immunological changes seen in this disorder. Many children with the BIRC4 gene defect have come to CCHMC for a bone marrow transplant to treat this disorder, and Dr. Marsh has received an NIH grant for more mechanistic studies to determine why the gene abnormalities lead to malfunction in the immune system.

Division Publications

1. Gulick J, Robbins J. [Cell-type-specific transgenesis in the mouse](#). *Methods Mol Biol.* 2009; 561: 91-104.
2. Acehan D, Khuchua Z, Houtkooper RH, Malhotra A, Kaufman J, Vaz FM, Ren M, Rockman HA, Stokes DL, Schlame M. [Distinct effects of tafazzin deletion in differentiated and undifferentiated mitochondria](#). *Mitochondrion.* 2009; 9: 86-95.
3. Wu X, Chang B, Blair NS, Sargent M, York AJ, Robbins J, Shull GE, Molkentin JD. [Plasma membrane Ca²⁺-ATPase isoform 4 antagonizes cardiac hypertrophy in association with calcineurin inhibition in rodents](#). *J Clin Invest.* 2009; 119: 976-85.
4. Maloyan A, Osinska H, Lammerding J, Lee RT, Cingolani OH, Kass DA, Lorenz JN, Robbins J. [Biochemical and mechanical dysfunction in a mouse model of desmin-related myopathy](#). *Circ Res.* 2009; 104: 1021-8.
5. Nicolaou P, Rodriguez P, Ren X, Zhou X, Qian J, Sadayappan S, Mitton B, Pathak A, Robbins J, Hajjar RJ, Jones K, Kranias EG. [Inducible expression of active protein phosphatase-1 inhibitor-1 enhances basal cardiac function and protects against ischemia/reperfusion injury](#). *Circ Res.* 2009; 104: 1012-20.
6. Dhandapany PS, Sadayappan S, Xue Y, Powell GT, Rani DS, Nallari P, Rai TS, Khullar M, Soares P, Bahl A, Tharkan JM, Vaideeswar P, Rathinavel A, Narasimhan C, Ayapati DR, Ayub Q, Mehdi SQ, Oppenheimer S, Richards MB, Price AL, Patterson N, Reich D, Singh L, Tyler-Smith C, Thangaraj K. [A common MYBPC3 \(cardiac myosin binding protein C\) variant associated with cardiomyopathies in South Asia](#). *Nat Genet.* 2009; 41: 187-91.
7. Konopatskaya O, Gilio K, Harper MT, Zhao Y, Cosemans JM, Karim ZA, Whiteheart SW, Molkentin JD, Verkade P, Watson SP, Heemskerk JW, Poole AW. [PKC \$\alpha\$ regulates platelet granule secretion and thrombus formation in mice](#). *J Clin Invest.* 2009; 119: 399-407.
8. Liu Q, Busby JC, Molkentin JD. [Interaction between TAK1-TAB1-TAB2 and RCAN1-calcineurin defines a signalling nodal control point](#). *Nat Cell Biol.* 2009; 11: 154-61.
9. Molkentin JD, Robbins J. [With great power comes great responsibility: using mouse genetics to study cardiac](#)

- [hypertrophy and failure](#) . *J Mol Cell Cardiol*. 2009; 46: 130-6.
10. Wang S, Ware SM. [Use of FOXJ1CreER2T mice for inducible deletion of embryonic node gene expression](#) . *Genesis*. 2009; 47: 132-6.
 11. Hsu S, Nagayama T, Koitabashi N, Zhang M, Zhou L, Bedja D, Gabrielson KL, Molkentin JD, Kass DA, Takimoto E. [Phosphodiesterase 5 inhibition blocks pressure overload-induced cardiac hypertrophy independent of the calcineurin pathway](#) . *Cardiovasc Res*. 2009; 81: 301-9.
 12. Carneiro LA, Travassos LH, Soares F, Tattoli I, Magalhaes JG, Bozza MT, Plotkowski MC, Sansonetti PJ, Molkentin JD, Philpott DJ, Girardin SE. [Shigella induces mitochondrial dysfunction and cell death in nonmyeloid cells](#) . *Cell Host Microbe*. 2009; 5: 123-36.
 13. Scruggs SB, Hinken AC, Thawornkaiwong A, Robbins J, Walker LA, de Tombe PP, Geenen DL, Buttrick PM, Solaro RJ. [Ablation of ventricular myosin regulatory light chain phosphorylation in mice causes cardiac dysfunction in situ and affects neighboring myofilament protein phosphorylation](#) . *J Biol Chem*. 2009; 284: 5097-106.
 14. Diwan A, Matkovich SJ, Yuan Q, Zhao W, Yatani A, Brown JH, Molkentin JD, Kranias EG, Dorn GW, 2nd. [Endoplasmic reticulum-mitochondria crosstalk in NIX-mediated murine cell death](#) . *J Clin Invest*. 2009; 119: 203-12.
 15. Lorts A, Schwanekamp JA, Elrod JW, Sargent MA, Molkentin JD. [Genetic manipulation of periostin expression in the heart does not affect myocyte content, cell cycle activity, or cardiac repair](#) . *Circ Res*. 2009; 104: e1-7.
 16. Yang YJ, Chen W, Edgar A, Li B, Molkentin JD, Berman JN, Lin TJ. [Rcan1 negatively regulates Fc epsilonRI-mediated signaling and mast cell function](#) . *J Exp Med*. 2009; 206: 195-207.
 17. Donaldson C, Eder S, Baker C, Aronovitz MJ, Weiss AD, Hall-Porter M, Wang F, Ackerman A, Karas RH, Molkentin JD, Patten RD. [Estrogen attenuates left ventricular and cardiomyocyte hypertrophy by an estrogen receptor-dependent pathway that increases calcineurin degradation](#) . *Circ Res*. 2009; 104: 265-75, 11p following 275.
 18. Baines CP, Molkentin JD. [Adenine nucleotide translocase-1 induces cardiomyocyte death through upregulation of the pro-apoptotic protein Bax](#) . *J Mol Cell Cardiol*. 2009; 46: 969-77.
 19. Waggoner JR, Ginsburg KS, Mitton B, Haghghi K, Robbins J, Bers DM, Kranias EG. [Phospholamban overexpression in rabbit ventricular myocytes does not alter sarcoplasmic reticulum Ca transport](#) . *Am J Physiol Heart Circ Physiol*. 2009; 296: H698-703.
 20. Mohapatra B, Casey B, Li H, Ho-Dawson T, Smith L, Fernbach SD, Molinari L, Niesh SR, Jefferies JL, Craigen WJ, Towbin JA, Belmont JW, Ware SM. [Identification and functional characterization of NODAL rare variants in heterotaxy and isolated cardiovascular malformations](#) . *Hum Mol Genet*. 2009; 18: 861-71.
 21. Sadayappan S, Gulick J, Klevitsky R, Lorenz JN, Sargent M, Molkentin JD, Robbins J. [Cardiac myosin binding protein-C phosphorylation in a {beta}-myosin heavy chain background](#) . *Circulation*. 2009; 119: 1253-62.
 22. Kogan JM, Miller E, Ware SM. [High resolution SNP based microarray mapping of mosaic supernumerary marker chromosomes 13 and 17: delineating novel loci for apraxia](#) . *Am J Med Genet A*. 2009; 149A: 887-93.
 23. Ware SM, El-Hassan N, Kahler SG, Zhang Q, Ma YW, Miller E, Wong B, Spicer RL, Craigen WJ, Kozel BA, Grange DK, Wong LJ. [Infantile cardiomyopathy caused by a mutation in the overlapping region of mitochondrial ATPase 6 and 8 genes](#) . *J Med Genet*. 2009; 46: 308-14.
 24. Zhong H, Sia GM, Sato TR, Gray NW, Mao T, Khuchua Z, Haganir RL, Svoboda K. [Subcellular dynamics of type II PKA in neurons](#) . *Neuron*. 2009; 62: 363-74.
 25. Ito K, Akazawa H, Tamagawa M, Furukawa K, Ogawa W, Yasuda N, Kudo Y, Liao CH, Yamamoto R, Sato T, Molkentin JD, Kasuga M, Noda T, Nakaya H, Komuro I. [PDK1 coordinates survival pathways and beta-adrenergic response in the heart](#) . *Proc Natl Acad Sci U S A*. 2009; 106: 8689-94.
 26. Fuller SJ, Pikkarainen S, Tham el L, Cullingford TE, Molkentin JD, Cornils H, Hergovich A, Hemmings BA, Clerk A, Sugden PH. [Nuclear Dbp2-related protein kinases \(NDRs\) in isolated cardiac myocytes and the myocardium: activation by cellular stresses and by phosphoprotein serine-/threonine-phosphatase inhibitors](#) . *Cell Signal*. 2008; 20: 1564-77.
 27. Moga MA, Nakamura T, Robbins J. [Genetic approaches for changing the heart and dissecting complex syndromes](#) . *J Mol Cell Cardiol*. 2008; 45: 148-55.
 28. Pattison JS, Robbins J. [Protein misfolding and cardiac disease: establishing cause and effect](#) . *Autophagy*. 2008; 4: 821-3.
 29. Conway SJ, Molkentin JD. [Periostin as a heterofunctional regulator of cardiac development and disease](#) . *Curr Genomics*. 2008; 9: 548-55.
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Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

CRIFE, T

Oncolytic HSV Cancer Therapy in Immunocompetent Sarcoma Models

National Institutes of Health

R01 CA 114004 07/01/06 - 05/31/11 \$172,353 / \$887,500

Virotherapy for Neuroblastoma Stem Cells

National Institutes of Health

R21 CA 133663 08/01/08 - 07/31/10 \$112,500 / \$247,500

Cincinnati NF1 Preclinical Testing Center

The Children's Tumor Foundation

06/01/08 - 05/31/11 \$216,364 / \$720,000

Cincinnati Center for Neurofibromatosis Research - Core B

National Institutes of Health

P50 NS 057531 09/15/08 - 06/30/13 \$100,525 / \$502,625

CTSA: Pilot and Collaborative Studies

National Institutes of Health (University of Cincinnati)

UL1 RR 026314 04/03/09 - 03/31/14 \$24,238 / \$24,238

DAVIES, S

Predictors of Adult Leukemia

National Institutes of Health (University of Minnesota)

R01 CA 107143 04/01/05 - 03/31/10 \$11,712 / \$56,904

Antileukemic Effect of NK Cells in HCT for Pediatric AML

National Institutes of Health (St. Jude's Children's Hospital)

R01 CA 120583 08/01/07 - 06/30/12 \$8,686 / \$43,580

Childhood Cancer Survivor Study

National Institutes of Health (St. Jude's Children's Hospital)

U54 CA 055727 12/01/05 - 11/30/10 \$50,000 / \$643,729

Mechanisms of RET, PTC Rearrangements in Thyroid Center

National Institutes of Health (University of Pittsburgh)

R01 CA 088041 03/01/09 - 02/28/10 \$6,399 / \$6,399

The Children's Oncology Group Chairs Grant

National Institutes of Health (National Childhood Cancer Foundation)

U10 CA 098543 03/01/08 - 02/28/10 \$11,956 / \$23,619

HSCT-CHESS to Enhance Hematopoietic Transplant Recovery

National Institutes of Health (New England Medical Center)

R01 CA119196 06/01/08 - 05/31/10 \$24,330 / \$34,330

HSCT-CHESS to Enhance Hematopoietic Transplant Recovery - Per Patient

National Institutes of Health (New England Medical Center)

R01 CA119196 06/01/08 - 05/31/10 \$6,801 / \$12,000

DRISSI, R**Decreasing Side Effects of Radiation Therapy for Cancer Patients**

Cancer Free Kids

06/01/09 - 05/31/10 \$36,000 / \$36,000

FILIPOVICH, L**Laboratory Diagnosis and Immunologic Characterization Conference Grant**

National Institutes of Health

R13 AI 081379 11/01/08 - 10/31/09 \$3,000 / \$3,000

Hypoxia and Potassium Channel Activity in T Lymphocytes

National Institutes of Health (University of Cincinnati)

R01 CA095286 06/01/2009 - 04/30/2013 \$19,190 / \$80,284

FOULADI, M**Children's Oncology Group Phase I Consortium 17197**

National Institutes of Health (National Childhood Cancer Foundation)

U01 CA 097452 08/01/07 - 01/31/09 \$11,267 / \$32,000

The Pediatric Brain Tumor Consortium

National Institutes of Health (St. Jude's Children's Hospital)

U01 CA 081457 04/01/08 - 03/31/10 \$14,920 / \$26,047

A Study of Radiotherapy and Concurrent Bevacizumab

The Cure Starts Now Foundation

01/01/09 - 12/31/09 \$50,000 / \$50,000

Study of Radiotherapy and Concurrent Bevacizumab

Jeffrey Thomas Hayden Foundation

05/01/09 - 04/30/10 \$25,000 / \$25,000

Molecular Profiling of High-Grade Gliomas in Children

Cancer Free Kids

06/01/09 - 05/31/10 \$36,000 / \$36,000

GRUPPO, R**Hemophilia Prevention Network**

Centers for Disease Control and Prevention (Hemophilia Foundation of Michigan)

U01 DD 000203 10/01/97 - 09/29/09 \$21,000 / \$155,771

Molecular and Clinical Biology of VWD

National Institutes of Health (Medical College of Wisconsin)

P01 HL 081588 06/01/09 - 06/30/09 \$2,000 / \$2,000

Hemophilia and Thrombosis Center

Cascade Hemophilia Consortium (Hemophilia Foundation of Michigan)

06/01/03 - 05/31/10 \$58,200 / \$297,658

Hemophilia Comprehensive Care and Prevention Core Center for Bleeding Disorders

Maternal and Child Health Bureau (Hemophilia Foundation of Michigan)

5H30MC0015

10/01/97 - 05/31/10

\$14,500 / \$138,690

JOINER, C**Cincinnati Comprehensive Sickle Cell Center**

National Institutes of Health

U54 HL 070871

06/15/08 - 03/31/12

\$1,019,258 / \$4,067,809

Mitchell, M

Project 3

108,644

Joiner, C

Project 4

302,751

Malik, P

Project 5

389,734

Joiner, C

Scholar

105,000

Joiner, C

Admin Core

103,681

Joiner, C

Clinical

9,448

Cincinnati Sickle Cell Project

Ohio Department of Health

31-6-006-1-CC-08

07/01/08 - 06/30/09

\$117,363 / \$117,368

Ohio Sickle Cell Alliance for Research

National Institutes of Health (New England Research Institute)

U10 HL 083721

03/01/09 - 03/31/10

\$86,114 / \$172,230

KALFA, T**RAC1 and RAC2 Guanosine Triphosphatases in Erythroid Function and Differentiation**

National Institutes of Health

K08 HL 088126

02/11/08 - 11/30/12

\$119,125 / \$595,625

KALINYAK, K**Silent Cerebral Infarct Multi-Center Clinical Trial**

National Institutes of Health (Washington University)

U01 NS 042804

09/30/03 - 06/30/10

\$1,776 / \$502,371

Stroke with Transfusions Changing to Hydroxyurea

National Institutes of Health (St. Jude's Children's Hospital)

U01 HL 078787

04/01/06 - 06/30/11

\$29,631 / \$138,180

MARSH, R**Investigations into XIAP-Deficient X-linked Lymphoproliferative Disease**

National Institutes of Health

R03 AI 079797

09/15/08 - 08/31/10

\$50,000 / \$100,000

The Pathogenesis of XILP Due to XIAP Deficiency

Histiocytosis Association of America

01/01/09 - 12/31/09

\$50,000 / \$50,000

MIZUKAWA, B**Pediatric Physician Scientist Program Award**

National Institutes of Health (Yale University School of Medicine University School of Medicine)

K12 HD 000850

07/01/08 - 06/30/10

\$94,750 / \$195,250

MORREALE, R**Training Program with Regulations of Cellular Growth and Differentiation**

National Institutes of Health (University of Cincinnati)

T32 CA 059268

08/01/07 - 07/31/09

\$38,976 / \$75,972

MULLINS, E**Thrombin and Thrombin Targets in Allergen Airway Inflammation**

NAGARAJAN, R**Genetic Epidemiology of Osteosarcoma**

National Institutes of Health (University of Minnesota)

U01 CA 122371

05/01/07 - 04/30/11

\$9,283 / \$36,607

PALUMBO, J**Mechanisms Linking Metastasis to Tumor Procoagulant and Innate Immunity**

National Institutes of Health

R01 HL 085545

07/20/06 - 06/30/11

\$242,750 / \$1,250,000

PERENTESIS, J**Children's Oncology Group New Publication Committee**

National Institutes of Health (National Childhood Cancer Foundation)

U01 CA 097452

09/01/06 - 07/31/09

\$11,928 / \$22,818

Children's Oncology Group Phase I Consortium (Per Patient)

National Institutes of Health (National Childhood Cancer Foundation)

U01 CA 097542

08/01/07 - 07/31/09

\$35,931 / \$80,000

Children's Oncology Group Phase I Consortium

National Institutes of Health (National Childhood Cancer Foundation)

U01 CA 097542

08/01/07 - 07/31/09

\$21,888 / \$43,138

Chairman's Award Children's Oncology Group

National Institutes of Health (National Childhood Cancer Foundation)

U10 CA 098543

03/01/03 - 02/28/13

\$23,913 / \$208,335

Chairman's Award Children's Oncology Group(Per Patient)

National Institutes of Health (National Childhood Cancer Foundation)

U10 CA 098543

03/01/08 - 02/28/13

\$148,730 / \$250,000

Cincinnati Center for Neurofibromatosis Research - Project 1

National Institutes of Health

P50 NS 057531

09/15/08 - 06/30/13

\$304,308 / \$1,521,540

PHILLIPS, C**Host Polymorphism and Acute Myelogenous Leukemia**

Bear Necessities Pediatric Cancer Fdn

07/01/08 - 06/30/09

\$40,000 / \$40,000

Pharmacogenetics in AML

Hyundai Hope on Wheels

01/15/09 - 01/14/10

\$50,000 / \$50,000

SHOOK, L**Cincinnati Sickle Cell Newborn Screening Network**

Health Resources and Services Administration

H46 MC 009233

06/01/08 - 05/31/11

\$185,000 / \$555,000

SMITH, F.**The Children's Oncology Group Chairs Grant**

National Institutes of Health (National Childhood Cancer Foundation)

U10 CA 098543

03/01/03 - 02/28/10

\$111,275 / \$313,395

SUMEGI, J**Search for Growth Inhibitory Genes in Ewing's Sarcoma**

La Fondation des Gouverneurs de l'espoir (University of Nebraska Medical Center)

01/01/08 - 12/31/09

\$30,031 / \$90,351

Functional Identification of Genes Mutated in FHLH

National Institutes of Health

R21 AI 079759 07/15/08 - 06/30/10 \$142,667 / \$275,000

Revisiting the Candidate Regions for Familial Hemophagocytic Lymphohistiocytosis (FHLH)
Histiocytosis Association of America

01/01/09 - 12/31/09 \$50,000 / \$50,000

WAGNER, L.

Children's Oncology Group Phase I ADVL0414 Study Chair

National Institutes of Health (National Childhood Cancer Foundation)

U01 CA 097452 08/01/07 - 01/31/09 \$10,430 / \$30,681

WELLS, S.

Role and Regulation of the Human DEK Proto-Oncogene

National Institutes of Health

R01 CA 116313 04/01/06 - 02/28/11 \$172,353 / \$887,500

HPV Replication and Transformation in FA Squamous Cell

Fanconi Anemia Research Foundation

03/01/09 - 02/28/11 \$100,000 / \$200,000

Current Year Direct \$4,384,421

Industry Contracts

Kalinyak, K

Novartis Pharmaceuticals \$ 7,979

Geller, J

ArQule, Inc \$ 11,696

Gruppo, R

Grifols, Inc. \$ 6,314

Novo Nordisk Pharmaceuticals \$ 11,519

Wyeth Pharmaceuticals \$ 9,291

Harris, R

Alexion Pharmaceuticals, Inc. \$ 5,582

CHLA \$ 7,916

Mehta, P

Astellas Pharma US, Inc. \$ 4,928

Smith, F

Clinical Trials Office \$ 53,686

Wagner, L

Amgen, Inc \$ 9,324

Current Year Direct Receipts \$142,754

Funded Collaborative Efforts

Blessing, J

Cincinnati Multidisciplinary Clinical Research Center

National Institutes of Health

Glass, David 08/18/08 - 07/31/13 3 %

Filipovich, L

Gene Expression in Pediatric Arthritis - Project 4

National Institutes of Health

Glass, David 07/01/03 - 06/30/09 5 %

Kalinyak, K

Role of Placenta Growth Factor in Sickle ACS

National Institutes of Health

Malik, Punam

09/01/06 - 05/31/09

5 %

Perentesis, J

Neurobehavioral Late-Effects in Pediatric Brain Tumors

National Institutes of Health

Ris, Douglas

07/01/05 - 06/30/10

3 %

Perentesis, J

Promoting Treatment Adherence in Adolescent Leukemia

National Institutes of Health

Drotar, Dennis

09/28/07 - 07/31/12

3 %

Perentesis, J

NF Consortium Development Infrastructure

UAB/DOD

Schorry, Elizabeth

07/01/08 - 06/30/10

5 %

Weiss, B

NF Consortium Development STOPn

UAB/DOD

Schorry, Elizabeth

07/01/08 - 06/30/10

8.5 %

Total **\$**
4,527,175
