

Experimental Hematology

Division Details

RESEARCH AND TRAINING DETAILS

Faculty	23
Joint Appointment Faculty	14
Research Fellows and Post Docs	25
Research Graduate Students	21
Total Annual Grant Award Dollars	\$15,508,116
Total Annual Industry Award Dollars	\$76,488



Row 1: D Pan, M Xin, M-D Filippi, E Boscolo, N Ratner, L Privette-Vinnedge, P Malik

Row 2: T Kalfa, R Lu, J Wu, R Drissi, S Wells, C Lutzko, K Komurov, Y Zheng

Row 3: M Azam, N Nassar, R Waclaw, Q Pang, D Starczynowski, J Cancelas, M Flick, B Dasgupta, G Huang, B Seibel, D Reynard

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Division Publications

1. Dombi E; Baldwin A; Marcus LJ; Fisher MJ; Weiss B; Kim A; Whitcomb P; Martin S; Aschbacher-Smith LE; Rizvi TA. **Activity of Selumetinib in Neurofibromatosis Type 1-Related Plexiform Neurofibromas.** *The New England journal of medicine.* 2016; 375:2550-2560.
2. Kesarwani M; Kincaid Z; Gomaa A; Huber E; Rohrabough S; Siddiqui Z; Bousso MF; Latif T; Xu M; Komurov K. **Targeting c-FOS and DUSP1 abrogates intrinsic resistance to tyrosine-kinase inhibitor therapy in BCR-ABL-induced leukemia.** *Nature Medicine.* 2017; 23:472-482.
3. Fang J; Liu X; Bolanos L; Barker B; Rigolino C; Cortelezzi A; Oliva EN; Cuzzola M; Grimes HL; Fontanillo C. **A calcium- and calpain-dependent pathway determines the response to lenalidomide in myelodysplastic syndromes.** *Nature Medicine.* 2016; 22:727-734.
4. Cabezas-Wallscheid N; Buettner F; Sommerkamp P; Klimmeck D; Ladel L; Thalheimer FB; Pastor-Flores D; Roma LP; Renders S; Zeisberger P. **Vitamin A-Retinoic Acid Signaling Regulates Hematopoietic Stem Cell Dormancy.** *Cell.* 2017; 169:807-823.e19.

5. Lin S; Luo RT; Ptasinska A; Kerry J; Assi SA; Wunderlich M; Imamura T; Kaberlein JJ; Rayes A; Althoff MJ. **Instructive Role of MLL-Fusion Proteins Revealed by a Model of t(4;11) Pro-B Acute Lymphoblastic Leukemia.** *Cancer Cell.* 2016; 30:737-749.
6. Niederkorn M; Starczynowski DT. **GMP- ing to Spatial Conclusions about Emergency and Leukemic Myelopoiesis.** *Cell Stem Cell.* 2017; 20:579-581.
7. Fang J; Bolanos LC; Choi K; Liu X; Christie S; Akunuru S; Kumar R; Wang D; Chen X; Greis KD. **Ubiquitination of hnRNPA1 by TRAF6 links chronic innate immune signaling with myelodysplasia.** *Nature Immunology.* 2017; 18:236-245.
8. Wu LMN; Wang J; Conidi A; Zhao C; Wang H; Ford Z; Zhang L; Zweier C; Ayee BG; Maurel P. **Zeb2 recruits HDAC-NuRD to inhibit Notch and controls Schwann cell differentiation and remyelination.** *Nature Neuroscience.* 2016; 19:1060-1072.
9. He D; Wang J; Lu Y; Deng Y; Zhao C; Xu L; Chen Y; Hu YC; Zhou W; Lu QR. **lncRNA Functional Networks in Oligodendrocytes Reveal Stage-Specific Myelination Control by an IncOL1/Suz12 Complex in the CNS.** *Neuron.* 2017; 93:362-378.
10. Itkin T; Kumari A; Schneider E; Gur-Cohen S; Ludwig C; Brooks R; Kollet O; Golan K; Khatib-Massalha E; Russo CM. **MicroRNA-155 promotes G-CSF-induced mobilization of murine hematopoietic stem and progenitor cells via propagation of CXCL12 signaling.** *Leukemia.* 2017; 31:1247-1250.
11. Du W; Amarachintha S; Wilson A; Pang Q. **The immune receptor Trem1 cooperates with diminished DNA damage response to induce preleukemic stem cell expansion.** *Leukemia.* 2017; 31:423 -433.
12. Varney ME; Choi K; Bolanos L; Christie S; Fang J; Grimes LH; Maciejewski JP; Inoue JI; Starczynowski DT. **Epistasis between TIFAB and miR-146a: neighboring genes in del(5q) myelodysplastic syndrome.** *Leukemia.* 2017; 31:491-495.
13. Chandrakasan S; Jayavaradhan R; Ernst J; Shrestha A; Loberg A; Dexheimer P; Jordan M; Pang Q; Aronow B; Malik P. **KIT blockade is sufficient for donor hematopoietic stem cell engraftment in Fanconi anemia mice.** *Blood.* 2017; 129:1048-1052.
14. Byrnes JR; Wilson C; Boutelle AM; Brandner CB; Flick MJ; Philippou H; Wolberg AS. **The interaction between fibrinogen and zymogen FXIII-A(2)B(2) is mediated by fibrinogen residues gamma 390-396 and the FXIII-B subunits.** *Blood.* 2016; 128:1969-1978.
15. Shaw MA; Kombrinck KW; McElhinney KE; Sweet DR; Flick MJ; Palumbo JS; Cheng M; Esmon NL; Esmon CT; Brill A. **Limiting prothrombin activation to meizothrombin is compatible with survival but significantly alters hemostasis in mice.** *Blood.* 2016; 128:721-731.
16. Barry DM; Koo Y; Norden PR; Wylie LA; Xu K; Wichaidit C; Azizoglu DB; Zheng Y; Cobb MH; Davis GE. **Rasip1-Mediated Rho GTPase Signaling Regulates Blood Vessel Tubulogenesis via Nonmuscle Myosin II.** *Circulation Research.* 2016; 119:810-826.
17. Deng Y; Wu LMN; Bai S; Zhao C; Wang H; Wang J; Xu L; Sakabe M; Zhou W; Xin M. **A reciprocal regulatory loop between TAZ/YAP and G-protein G alpha s regulates Schwann cell proliferation and myelination.** *Nature Communications.* 2017; 8:15161-15161.
18. Hinge A; Xu J; Javier J; Mose E; Kumar S; Kapur R; Srour EF; Malik P; Aronow BJ; Filippi MD. **p190-B RhoGAP and intracellular cytokine signals balance hematopoietic stem and progenitor cell self-renewal and differentiation.** *Nature Communications.* 2017; 8:14382-14382.
19. Jiang M; Liu L; He X; Wang H; Lin W; Wang H; Yoon SO; Wood TL; Lu QR. **Regulation of PERK-eIF2 alpha signalling by tuberous sclerosis complex-1 controls homeostasis and survival of myelinating oligodendrocytes.** *Nature Communications.* 2016; 7:12185-12185.
20. Schreck C; Istvánffy R; Ziegenhain C; Sippenauer T; Ruf F; Henkel L; Gärtner F; Vieth B; Florian MC; Mende N. **Niche WNT5A regulates the actin cytoskeleton during regeneration of hematopoietic stem cells.** *The Journal of Experimental Medicine.* 2017; 214:165-181.
21. Kopec AK; Joshi N; Cline-Fedewa H; Wojcicki AV; Ray JL; Sullivan BP; Froehlich JE; Johnson BF; Flick MJ; Luyendyk JP. **Fibrin(ogen) drives repair after acetaminophen- induced liver injury via leukocyte alpha(M)beta(2) integrin-dependent**

upregulation of Mmp12. *Journal of Hepatology.* 2017; 66:787-797.

22. Guidi N; Sacma M; Ständker L; Soller K; Marka G; Eiwien K; Weiss JM; Kirchhoff F; Weil T; Cancelas JA. **Osteopontin attenuates aging-associated phenotypes of hematopoietic stem cells.** *The EMBO Journal.* 2017; 36:840-853.
23. Ratner N; Brodeur GM; Dale RC; Schor NF. **The "Neuro" of Neuroblastoma: Neuroblastoma as a Neurodevelopmental Disorder.** *Annals of Neurology.* 2016; 80:13-23.
24. McNally JP; Millen SH; Chaturvedi V; Lakes N; Terrell CE; Elfers EE; Carroll KR; Hogan SP; Andreassen PR; Kanter J. **Manipulating DNA damage-response signaling for the treatment of immune-mediated diseases.** *Proceedings of the National Academy of Sciences of the United States of America.* 2017; 114:E4782-E4791.
25. Bakeer N; James J; Roy S; Wansapura J; Shanmukhappa SK; Lorenz JN; Osinska H; Backer K; Huby AC; Shrestha A. **Sickle cell anemia mice develop a unique cardiomyopathy with restrictive physiology.** *Proceedings of the National Academy of Sciences of the United States of America.* 2016; 113:E5182-E5191.

Grants, Contracts, and Industry Agreements

Annual Grant Award Dollars

Investigator	Title	Sponsor	ID	Dates	Amount
Nancy Ratner, PhD	Ras Proteins in Nerve Tumorigenesis	National Institutes of Health	R37 NS083580	04/01/2014 - 03/31/2019	\$390,000
FuKun Guo, PhD	Novel Signaling Function of Cdc42 GTPase In Vivo	National Institutes of Health	R01 GM108661	05/01/2014 - 02/28/2018	\$273,000
Qing Richard Lu, PhD	The Establishment of Schwann Cell Polarity and the Inflation of Myelination	National Institutes of Health (The Univ of California, San Francisco)	R01 NS062796	05/01/2014 - 04/30/2019	\$122,850
Nancy Ratner, PhD	Disordered Regulation of Wnt/beta-catenin Signaling in MPNST Development and Maintenance	National Institutes of Health (University of Minnesota)	R01 NS086219	08/15/2014 - 06/30/2019	\$274,835
Yi Zheng, PhD	Targeting Cdc42 for Bone Marrow Transplant Therapies	National Institutes of Health	R01 CA193350	05/01/2015 - 04/30/2020	\$356,850
Nancy Ratner, PhD	Brain Dysfunction in Neurofibromatosis	National Institutes of Health	R01 NS091037	04/01/2015 - 03/31/2020	\$309,792
Kakajan Komurov, PhD	Exploiting Proteotoxic Stress in Therapy-refractory HER2+ Breast Cancers	National Institutes of Health	R01 CA193549	05/01/2015 - 04/30/2020	\$356,850
Elisa Boscolo, PhD	Venous Malformations (VM): A Murine Model to Identify Therapies to Target Aberrant Venous Development	National Institutes of Health	R01 HL117952	08/07/2014 - 04/30/2018	\$351,000

Ronald R Waclaw, PhD	Signaling Pathways Regulating Oligodendrocyte Development and Function	National Institutes of Health	R01 NS088529	04/01/2015 - 02/29/2020	\$341,250
Qing Richard Lu, PhD	Molecular Mechanisms of Oligodendrocyte Differentiation and Myelination	National Institutes of Health	R01 NS072427	09/20/2015 - 08/31/2020	\$466,702
Damien Reynaud, PhD	Investigating the Mechanisms of Leukemia Initiation in the Context of Obesity	Department of Defense Army	W81XWH1510344	09/01/2015 - 08/31/2018	\$187,200
Daniel T. Starczynowski, PhD	Investigating Genetic and Molecular Determinants of Myelodysplastic Syndromes	The Leukemia and Lymphoma Society	133416	07/01/2015 - 06/30/2020	\$110,000
Carolyn Lutzko, PhD	CS1 Chimeric Antigen Receptor-Based Immunotherapy for Multiple Myeloma	American Cancer Society National (Ohio State University Comprehensive Canc)	RSG1424301LIB	01/01/2015 - 12/31/2018	\$30,000
Marie-Dominique Filippi, PhD	Hypoxia and Potassium Channel Activity in T Lymphocytes	National Institutes of Health (University of Cincinnati)	R01 CA095286	07/01/2015 - 06/30/2018	\$9,185
Matthew Flick, PhD	Novel Anti-fibrotic Mechanisms in Chemical- induced Liver Injury	National Institutes of Health (Michigan State University)	R01 ES017537	08/01/2015 - 06/30/2020	\$35,407
Marie-Dominique Filippi, PhD	Molecular Regulation of Neutrophil Transcellular Migration	National Institutes of Health	R01 GM112792	07/01/2015 - 06/30/2019	\$308,100
Jose Cancelas-Perez Carolyn Lutzko, PhD	G-CSF in Human Severe Congenital Neutropenia	National Institutes of Health	R01 GM110628	07/01/2015 - 06/30/2019	\$308,100
Marie-Dominique Filippi, PhD Punam Malik, MD	Regulation of Hematopoietic Stem Cell Self-renewal by GTPase Activating Protein Signaling	National Institutes of Health	R01 DK102890	07/01/2015 - 06/30/2020	\$420,349
Yi Zheng, PhD	Cdc42, Hematopoietic Stem Cell Polarity and Cell Fate	National Institutes of Health	R01 DK104814	12/15/2015 - 11/30/2019	\$496,716
Navneet Kumar Singh, PhD	Modelling and Targeting of Oncogenic Liability in Drug- Resistant Breast Cancer	Department of Defense Army	W81XWH1610028	03/01/2016 - 02/28/2019	\$191,081
Hartmut Geiger, PhD	Novel t-MDS Predisposing Genes and Pathways	Edward P. Evans Foundation	BSR2015	09/01/2015 -	\$200,000

				08/31/2017	
Mei Xin, PhD	Hippo Signaling in Heart Development and Repair	National Institutes of Health	R01 HL132211	04/01/2016	\$390,000
				-	
				03/31/2021	
Yi Zheng, PhD Hartmut Geiger	Blood Stem Cell Aging and Biomarker Studies	National Institutes of Health	R01 HL134617	08/01/2016	\$780,000
				-	
				05/31/2020	
Jonathan Fletcher	Cytokine Signaling in Neurofibroma Development	National Institutes of Health	F30 NS096796	03/01/2016	\$40,176
				-	
				02/28/2018	
Molly Smith	Aberrant Ubiquitin Editing in the Pathogenesis of Myeloid Malignancies	National Institutes of Health	F31 HL132420	09/01/2016	\$36,557
				-	
				08/31/2020	
Mark Althoff	Scribble in Hematopoietic Stem Cell Activity	National Institutes of Health	F31 HL132468	04/01/2016	\$36,036
				-	
				03/31/2019	
Jianqiang Wu, MD	miR-155 and RUNX Function in Neurofibroma Tumorigenesis and Therapy	National Institutes of Health	R01 NS097233	07/01/2016	\$341,250
				-	
				06/30/2021	
James Mulloy, PhD	The Role of Hedgehog Signaling in Gastric Tissue Repair and Regeneration	National Institutes of Health (University of Cincinnati)	R01 DK083402	07/01/2016	\$43,235
				-	
				04/30/2021	
Jose Cancelas-Perez	Multiscale Modeling of Myelodysplastic Syndromes	National Institutes of Health (Virginia Commonwealth University)	R01 HL128173	08/03/2016	\$103,256
				-	
				03/31/2020	
Nancy Ratner, PhD	Targeting Tumors with NF1 Loss	National Institutes of Health (Trustees of Dartmouth)	R01 NS095411	09/30/2015	\$222,286
				-	
				07/31/2020	
Qing Richard Lu, PhD	Chd7 Chromatin Remodeller Function in Myelination and Remyelination	National Multiple Sclerosis Society (Inserm Délégation Régionale Paris 6)	RG150102851	10/01/2015	\$90,360
				-	
				09/30/2018	
Yi Zheng, PhD	Targeting TET1 Signaling to Treat Acute Myeloid Leukemia	National Institutes of Health (University of Cincinnati)	R01 CA211614	01/01/2017	\$68,640
				-	
				12/31/2021	
Lilith Reeves	Disseminating Curative Biological Therapies for Rare Pediatric Diseases	Natl. Ctr for Advancing Translational Sc (Children's Hospital Boston)	U01 TR001814	09/01/2016	\$132,350
				-	
				08/31/2021	
Mark Wunderlich	Therapeutic Insights through Patient Derived Leukemia Xenografts	National Institutes of Health	R50 CA211404	09/15/2016	\$172,232
				-	
				08/31/2021	

Nancy Ratner, PhD	An Innovative NF1 Drug Discovery Pipeline for Preclinical Development of Novel Drugs Quickly, Safely, and Effectively	The Children's Tumor Foundation (The Children's Tumor Foundation)	CTF	10/15/2015 - 06/30/2018	\$75,891
Daniel T. Starczynowski, PhD	Rational Design of Dual IRAK1/4 Inhibitors as a New Therapy for MDS	The Leukemia and Lymphoma Society	651117	10/01/2016 - 09/30/2019	\$200,000
Damien Reynaud, PhD	Hematopoietic Stem Cells in Obesity	National Institutes of Health	R56 HL131861	09/01/2016 - 08/31/2017	\$390,000
Marie-Dominique Filippi, PhD	Identifying Novel Therapeutic Targets for Pediatrics Leukemia	Cancer Free Kids	Filippi, Marie, CFK	07/01/2016 - 06/30/2017	\$50,000
Robert A Coover, PhD	Overcoming Signaling Deficiencies in MPNST	Cancer Free Kids	Cover, Robert, CFK	07/01/2016 - 06/30/2018	\$42,500
Laura Barreyro, PhD	Inhibition of UBE2N as a Therapeutic Approach in Pediatric Acute Myeloid Leukemia	Cancer Free Kids	Barreyro, Laura, CFK	07/01/2016 - 06/30/2018	\$50,000
Chris Richard Evelyn, PhD	RasGRP1 Inhibitor as a Novel Treatment Strategy for Childhood T-Cell Acute Lymphoblastic Leukemia (T-ALL)	Cancer Free Kids	Evelyn, Chris, CFK	07/01/2016 - 06/30/2018	\$30,000
Daniel T. Starczynowski, PhD	Decoding Innate Immune Signaling in Normal and Myelodysplastic Hematopoiesis	National Institutes of Health	R35 HL135787	01/10/2017 - 12/31/2023	\$788,750
Qing Richard Lu, PhD	Molecular and Signaling Mechanisms of Peripheral Nerve Sheath Tumorigenesis	National Institutes of Health	R37 NS096359	09/30/2016 - 08/31/2020	\$529,965
Laura Barreyro, PhD	Environmental Carcinogenesis and Mutagenesis Training Grant	National Institutes of Health (University of Cincinnati)	T32 ES007250	09/30/2015 - 09/29/2018	\$38,340
Marie-Dominique Filippi, PhD	Role of Viral Chemokine Receptors in Cytomegalovirus Latency	National Institutes of Health (Louisiana State University)	R01 AI087683	11/11/2016 - 06/30/2017	\$3,048
Cindy LF Hochstetler	Impact of Abnormal Bone Marrow Endothelial Niche on Hematopoiesis	National Institutes of Health	F31 HL136229	03/01/2017 - 02/29/2020	\$37,176
Qing Richard Lu, PhD	Functional Analysis of	CHARGE Syndrome	Lu, Qing, CHARGE	07/01/2016	\$50,000

	CHARGE Syndrome-related Chromatin Remodelers in CNS Myelination	Foundation		-	06/30/2017	
Punam Malik, MD	Cincinnati Center of Excellence in Hemoglobinopathies Research	National Institutes of Health	U01 HL117709	06/01/2016	\$1,784,042	- 05/31/2018
Tomoya Muto, PhD	Cooperative Effect of Innate Immune Pathway Activation and Concurrent Epigenetic Mutations in Myelodysplastic Syndrome Stem Cells	Ohio State University Comprehensive Cancer	fellow	04/19/2016	\$47,268	- 04/19/2018
James Mulloy, PhD	Instructive Role of MLL Fusion Proteins in Lineage Determination and Leukemogenesis	National Institutes of Health (The University of Chicago)	R01 CA215504	04/01/2017	\$354,278	- 03/31/2022
James Mulloy, PhD	Molecular and Cellular Mechanisms of Chronic Myelomonocytic Leukemia (CMML)	National Institutes of Health (University of Wisconsin-Madison)	R01 CA152108	03/01/2017	\$39,000	- 02/28/2019
Qing Richard Lu, PhD	Targeting Tumor-Initiating Cells in Primary and Recurrent Medulloblastoma	University of Cincinnati	Lu, Qing, UC	07/01/2016	\$25,000	- 06/30/2017
Robert A Coover, PhD	Aberrant Purinergic Signaling in Neurofibromatosis Type 1	The Ohio State University Research Fnd	Coover, Robert, OSU	10/01/2016	\$47,844	- 09/30/2018
Punam Malik, MD	The Phase/II Pilot Study on Gene Transfer Therapy for Sickle Cell Disease	National Institutes of Health (Social & Scientific Systems, Inc.)	HHSN26800005	10/01/2016	\$1,849,839	- 05/31/2018
Matthew Flick, PhD	Thrombin-dependent Mechanisms of Pancreatic Ductal Adenocarcinoma Disease	National Institutes of Health	R01 CA211098	06/19/2017	\$431,067	- 05/31/2022
Qing Richard Lu, PhD	Identification of Clinically Targetable Pathways for the Treatment of Diffuse Intrinsic Pontine Glioma and High-grade Glioma through Chemical Genetic Screens	University of Cincinnati (Mayfield Education and Research Foundati)	Lu, Qing, merf	11/01/2016	\$50,000	- 10/31/2017
Yi Zheng, PhD	Activated Protein C Peptides for Radio-mitigation	National Institutes of Health (P2D Bioscience)	R43 AI127065	04/14/2017	\$69,078	- 03/31/2018
Katelyn Melgar	Novel Mechanisms and	National Institutes of	F31 CA217140	05/01/2017	\$36,256	

	Therapeutic Strategies of Refractory Leukemia	Health		-	04/30/2020	
Ashley E Cochran, PhD	Environmental Carcinogenesis and Mutagenesis Training Grant	National Institutes of Health (University of Cincinnati)	T32 ES007250	12/01/2016	\$28,672	
				-	11/30/2018	
Dao Pan, PhD	Gaucher Disease:Treatment of Neurodegenerative Disease	National Institutes of Health	R01 NS086134	06/01/2016	\$414,457	
				-	05/31/2018	
Timothy M Chlon, PhD	Modeling Tissue-specific Effects of Fanconi Anemia using Human iPSC	American Society of Hematology	2016ASHSCHOLAR	07/01/2016	\$50,000	
				-	06/30/2018	
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Annual Industry Award Dollars

Investigator	Industry Sponsor	Amount
Matthew Flick, PhD	Fibriant, B.V.	\$76,488
Total Annual Industry Award Dollars		\$76,488
