Pathology and Laboratory Medicine

Division Photo


Division Data Summary

<table>
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<th>Research and Training Details</th>
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<tbody>
<tr>
<td>Number of Faculty</td>
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<tr>
<td>Direct Annual Grant Support</td>
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<td>Direct Annual Industry Support</td>
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<tr>
<td>Peer Reviewed Publications</td>
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<tr>
<th>Clinical Activities and Training</th>
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<tr>
<td>Number of Clinical Fellows</td>
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<tr>
<td>Inpatient Encounters</td>
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<tr>
<td>Outpatient Encounters</td>
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Division Collaboration

Collaboration with Gastroenterology, Hepatology and Nutrition
Collaborating Faculty: Mitchel Cohen MD; Jorge Bezerra MD; Xiaonan Han PhD; Noah Shroywer PhD
Digestive Health Center. Integrated morphology core lab, provides technical and profession support to members of the DHC involved in basic translational research in gastrointestinal tract.

Collaboration with Gastroenterology, Hepatology and Nutrition
Collaborating Faculty: James Heubi MD; John Bucuvalas MD; Jorge Bezerra MD; Kathleen Campbell MD
Director of Pathology Core for multicenter BARC and CLIC studies on biliary atresia and other chronic liver disorders in children.

Collaboration with Division of Immunobiology
Collaborating Faculty: Marsha Wills-Karp PhD; Fred Finkelman PhD
Morphology core lab, provides technical and professional support for PPG focused on IL13

Collaboration with Division of Allergy and Immunology
Collaborating Faculty: Marc Rothenberg MD; Pablo Abonia MD
Providing professional support for the Cincinnati Center for Eosinophilic Disorders program and related research

Collaboration with Division of Hematology/Oncology
Collaborating Faculty: Maryam Fouladi MD; Richard Drissi PhD
Providing pathology professional and technical support for multicenter referral service for the High Grade Glioma program and basic research program.

Collaboration with Division of Heme/Onc Research
Collaborating Faculty: Yi Zeng PhD; James Mulloy PhD; Jose Cancelas PhD
Collaborating Faculty: Hai Cheng PhD; David R Levine PhD
Collaboration with Department of Pediatrics; Division of Hematology/Oncology
Collaborating Faculty: Yi Zeng PhD; James Mulloy PhD; Jose Cancelas PhD
Joint development of Leukemia Biology program at CCHMC
Collaboration with Department of Surgery; Division of Hem/Onc
Collaborating Faculty: Denise Adams MD; Richard Azizkhan MD; Anusua Dasgupta MD
Hemangioma/Vascular malformation clinical program. Providing professional diagnostic and technical pathology support for multidisciplinary patient care program.
Collaboration with Division of Human Genetics
Collaborating Faculty: Greg Grabowski MD
Providing technical support for research programs involving development of animal models of metabolic disease
Collaboration with Cardiovascular Institute
Collaborating Faculty: Jeffery Molkentin PhD
Providing technical support for cardiovascular research program.
Collaboration with Division of Rheumatology
Collaborating Faculty: Susan Thompson PhD; Sherri Thornton PhD
P30 grant, providing interpretation and technical support for research programs related for the "Integrative Cell Phenotyping and Morphology Core."

Faculty Members

David Witte, MD, Professor; Division Director
Kevin E Bove, MD, Professor
J. Todd Boyd, DO, Assistant Professor
Margaret H Collins, MD, Professor
Anita Gupta, MD, Assistant Professor
Richard L McMasters, MD, Assistant Professor
Lili Miles, MD, Associate Professor
Michael Miles, PharmD, Professor Clinical
Jun Q Mo, MD, Assistant Professor
Joel E Mortensen, PhD, Associate Professor
Kenneth D Setchell, PhD, Professor
Jerzy W Stanek, MD, Professor
Paul E Steele, MD, Associate Professor
Keith F Stringer, MD, Assistant Professor
Peter Tang, PhD, Assistant Professor
Kathryn Wikenheiser-Brokamp, MD, Assistant Professor
Hong Yin, MD, Assistant Professor

Trainees
- Rachel Sheridan, MD, PGY-V, University of Cincinnati
- Md Khalequzzaman, MD, PGY-V, Howard University Hospital

Significant Accomplishments

Cancer Biology Research Program
As our reputation for diagnosing and treating children with malignancies of the hematopoietic system continues to gain national recognition, we are building an equally strong research program in cancer biology to support our clinical program.

The focus is to dissect hematopoietic and cancer cell signaling networks at the molecular level. We have joined with the research team of the Division of Hematology/Oncology, under the direction of Yi Zheng, PhD, to build a more comprehensive program of research in leukemia and stem cell biology.

To this end, we added two new research faculty this year. Gang Huang, PhD, will study genetic and epigenetic changes that progressively drive normal cells to become highly malignant. Muhammad Azam, PhD, will study the molecular mechanisms underlying chemotherapy resistance. With a grant from the V Foundation, Azam will also develop enhanced therapeutic strategies to treat BCR/ABL associated leukemia.

Pulmonary Tumor Research Program
Kathryn Wikenheiser-Brokamp, MD, PhD, studies pleuropulmonary blastoma (PPB), a rare pediatric lung tumor that arises during fetal development and is part of an inherited cancer syndrome. Wikenheiser-Brokamp and a colleague from the Children’s National Medical Center in Washington, DC, have identified germline loss of function in DICER1 mutations in families with PPB. Their data shows that DICER1 protein is specifically lost in the PPB-associated epithelium but not in the malignant mesenchymal component. They are currently developing a conditional DICER1-deficient mouse model to identify the developmental stages when DICER1 function is required. These studies will identify the role of DICER1 in
lung development and result in a clinically relevant model for explaining molecular events underlying PPB pathogenesis. The research is supported by agencies including the NIH, American Cancer Society, St. Baldrick’s Foundation and the Society for Pediatric Pathology.

Pathology Clinical Developments
Our division faced a number of challenges with the H1N1 swine flu this year. We designed and validated a PCR-based assay for the virus prior to clinicians seeing active cases in the community. Ours was the only local lab facility to offer this test in the community. During the peak of the season, we performed more than 1,500 assays and typically ran them twice a day, providing weekend coverage with 24-hour turnaround support for hospitals throughout our region.

Division Publications

1.

Grants, Contracts, and Industry Agreements

<table>
<thead>
<tr>
<th>Grant and Contract Awards</th>
<th>Annual Direct / Project Period Direct</th>
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<tbody>
<tr>
<td>Azam, M</td>
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<tr>
<td>Molecular and Therapeutic Analysis of Human Leukemia Using Human Induced Pluripotent Cells</td>
<td>12/01/09 - 11/30/11 $100,000 / $200,000</td>
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<td>Simpson, D</td>
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<td>Role of Rb/p16 Pathway in Pulmonary Progenitor Cell Regulation</td>
<td>08/11/09 - 08/10/13 $32,621 / $153,370</td>
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<td>Wikenheiser-Brokamp, K</td>
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<tr>
<td>Mouse Models to Elucidate Mechanisms of Pleuropulmonary Blastoma Initiation</td>
<td>07/01/09 - 06/30/10 $50,000 / $50,000</td>
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<tr>
<td>Role of RB Family in Lung Epithelial Response to Injury</td>
<td>04/01/10 - 03/31/14 $250,000 / $1,000,000</td>
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<tr>
<td>Role of RB Family in Lung Epithelial Response to Injury</td>
<td>07/01/09 - 06/30/10 $56,215 / $56,215</td>
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Current Year Direct $488,836

Industry Contracts

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<tr>
<th>Industry Contracts</th>
<th>Current Year Direct Receipts</th>
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<tr>
<td>Mortensen, J</td>
<td>$19,913</td>
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<td>Microbiology Research</td>
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<td>Witte, D</td>
<td>$462</td>
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<td>Ception Therapeutics Inc</td>
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Current Year Direct Receipts $20,375

Total $509,211