

# Division of Pathology and Laboratory Medicine

DIVISION PROFILE	
Number of Faculty	11
Number of Fellows	
Clinical Fellows	1
Number of Support Personnel	111
Annual Total Grant Support (direct)	\$57,073
Annual Total Industry Contracts (direct)	\$25,453
Number of Peer Reviewed Publications	26
Patient Encounters	
Outpatient	834,943
Inpatient	846,748

## FACULTY LISTING

**David P. Witte, MD**, Professor, Division Director

**Edgar T. Ballard, MD**, Associate Professor

**Kevin E. Bove, MD**, Professor

**Margaret H. Collins, MD**, Associate Professor, Director, Residency Training Program

**Gail H. Deutsch, MD**, Assistant Professor

**Lili Miles, MD**, Assistant Professor

**Michael Miles, PharmD**, Professor

**Joel Mortensen, MD**, Associate Professor, Director, Clinical Microbiology/Virology

**Paul E. Steele, MD**, Associate Professor, Medical Director, Clinical Lab

**Keith F. Stringer, MD**, Assistant Professor

**Peter Tang, MD**, Assistant Professor

## OVERVIEW

The Division of Pathology and Laboratory Medicine provides a full anatomic pathology and clinical laboratory diagnostic service to CCHMC patients as well as a regional and national diagnostic and consultation service. The anatomic pathology clinical service utilizes the traditional tools of anatomic pathology including standard light microscopy, histochemistry, immunohistochemistry and electron microscopy as well as applying new molecular technology including in situ hybridization and PCR analysis. During the past year the faculty staffing level in the anatomic diagnostic service has been expanded to broaden our areas of expertise including neuropathology, a newly established hematopathology service, diagnostic molecular testing technology, and perinatal and fetal pathology. The clinical laboratory utilizes state-of-the-art facilities, technology and technical expertise to provide a diagnostic testing service including microbiology, virology, serology, chemistry, special chemistry and hematology as well as a full service blood transfusion program in cooperation with the Hoxworth Regional Blood Center. During the past year, more than 1.8 million diagnostic tests were performed in our clinical lab service and the newly established clinical lab operation at the Bethesda Oak facility is fully operational and providing core support for the diagnostic laboratory services at the Cincinnati Center for Clinical Research. This clinical lab was established to perform laboratory studies in support of human clinical trials in accordance with FDA GLP quality standards. The Division of Pathology and Laboratory Medicine has a comprehensive, accredited fellowship training program in pediatric pathology, which has recently been re-certified by ACGME and expanded to include an additional training fellow per year. The division is an integral component of the University of Cincinnati department of pathology residency training program and provides a pediatric pathology learning experience for the pathology residents during rotations at CCHMC. The Division of Pathology and Laboratory Medicine has an active research program both at the clinical and basic science level. Ongoing clinical collaborative studies involve the Division of Gastroenterology and Nutrition for eosinophilic esophagitis, motility disorders and metabolic liver diseases. The basic research in the molecular pathology lab focuses on a better understanding of the molecular and biological mechanisms that contribute to the pathogenesis of developmental anomalies and childhood

diseases through a morphologic understanding of the processes that regulate and promote normal development during embryogenesis. The division also provides core morphology laboratory support for numerous NIH funded projects throughout the institution as well as investigators at the University of Cincinnati College of Medicine.



*Left to Right: (1<sup>st</sup> row) L. Miles, D. Witte, J. Mortensen, E. Ballard, J. Mo, (2<sup>nd</sup> row) P. Tang, G. Deutsch, K. Bove, K. Stringer, P. Steele, M. Miles*

## HIGHLIGHTS

The clinical laboratory under the leadership of Dr. Paul Steele has continued to expand and improve the clinical laboratory diagnostic services at CCHMC. New point of care testing includes automated urinalysis in the clinics, hemoglobin measurements at Batesville and Greensberg and expanded iSTAT support in the OR. Since the department opened the general service laboratory at Oak Street to support the Cincinnati Center for Clinical Research, this laboratory service has now become fully operational and has received a number of industry based contracts for clinical trials which have been activated as well as continuing to receive an increasing number of proposals for future clinical trials. One example is the contract with the 3M Corporation which will now be utilizing this laboratory service as a national pediatric clinical laboratory testing site for their clinical trials. The laboratory is GLP compliant and CAP accredited. It serves both as a laboratory site for independent laboratory contracts as well as a core lab function for the overall functions of the Cincinnati Center for Clinical Research under the direction of Gary Howell. During the past year CCHMC has now signed an affiliation agreement with the Shriner's Hospital which will result in a new relationship which includes Dr. Paul Steele providing leadership and medical director responsibilities of the clinical laboratory at the Shriner's Hospital. Finally, through an interdisciplinary program involving Drs. David Witte, Paul Steele, Ken Setchell, and Sander Vinks, the planning and development of an expanded and upgraded mass spectrometry core laboratory will provide a new platform for laboratory testing at CCHMC as well as the development of new diagnostic assays utilizing this powerful analytical platform. Two new tandem mass specs have been purchased and will be installed in the near future.

Research efforts include a series of collaborative efforts with investigators in the Division of Developmental Biology and numerous clinical divisions at CCHMC using a combined morphologic based approach with molecular based technology to characterize and detail gene expression patterns of important developmentally regulated genes in the normal developing embryo as well as documenting the impact on embryogenesis in the events of either experimentally induced disruption or naturally acquired abnormalities in the function of these critical developmental genes. The Pathology Division has a well established core lab with a long history of supporting these studies and has significantly expanded during the past year in part based on NIH funding

in collaboration with a number of investigators at CCHMC. Two NIH funded core labs now exist within the Division of Pathology. One is a joint program under the direction of Mitch Cohen, MD in the Division of Gastroenterology and Nutrition which established the Cincinnati Center for Growth and Development. Under this support the lab provides extensive morphology and pathologic support for a number of investigators, mostly at CCHMC, with research focused on various aspects of pediatric digestive diseases and intestinal development. A second core lab has been recently funded in collaboration with the Division of Immunobiology and the Division of Allergy and Immunology. This grant under the direction of Dr. Marsha Wills-Karp, will involve a multidisciplinary approach to study the role of interleukin 13 in experimental asthma. The Division has continued to improve its accessibility and availability to the investigators at CCHMC in an effort to meet their rapidly growing demands. In response to these growing needs of the institution, the division has a web based data base system which was developed in collaboration with the Division of Bioinformatics. This system provides mechanisms for submitting, accessioning, tracking, and data reporting to the investigators on a more timely basis. Since this system has been implemented the Division of Pathology has logged in and processed more than 1,000 projects from CCHMC investigators. At the national level the division makes significant contributions to the subspecialty area of pediatric pathology through the activities of the Society for Pediatric Pathology. During the past year the Division of Pathology and Laboratory Medicine at CCHMC sponsored the fall meeting for the Society for Pediatric Pathology. This was a successful meeting which attracted pediatric pathologists from all over the nation and international institutions and resulted in one of the largest turn-outs for this annual meeting compared to many previous years. The division has many members active at a variety of levels in the Society for Pediatric Pathology including representatives who are on the council for the Society, multiple committee chairs, and committee memberships. The new editor for the Society for Pediatric Pathology newsletter is currently Dr. Margaret Collins in the Division of Pathology at CCHMC.

## TRAINING

Jun Mo, MD P-VI Zhejiang Medical University

## GRANTS, CONTRACTS AND INDUSTRY AGREEMENTS

### Grant and Contract Awards Annual Direct/Project Period Direct

Witte, D

#### **APOJ: A Protective Protein in Vascular Cell Formation**

National Institutes of Health (University of Cincinnati subcontract)  
R01 HL 67965 08/01/02 – 07/31/07 \$39,033/\$202,464

#### **Peptide Gene Vaccination in Lupus**

National Institutes of Health (University of Cincinnati subcontract)  
R01 AR 47322 08/15/01 – 05/31/05 \$18,040/\$191,331

**Current Year Direct \$57,073**

### Industry Contracts

Miles, M

Tishcon Corporation \$24,098

UCB Pharma Inc. \$1,155

**Current Year Direct Receipts \$25,453**

**TOTAL \$82,526**

## Funded Collaborative Efforts

Witte, D

Hlx in Enteric Mesenchymal and Neuronal Development National Institutes of Health PI: Bates	02/01/02 – 01/31/06	5%
The Role of Arginase in Allergic Airway Inflammation National Institutes of Health PI: Rothenberg	03/01/03 – 02/28/06	5%
Cincinnati DDRG: Center for Growth and Development (CGD) National Institutes of Health PI: Cohen	04/01/03 – 03/31/08	5%
Geneware System Large Scale Biology Corp PI: Grabowski	02/16/04 – 08/01/05	15%

## PUBLICATIONS

1. **Collins MH**. Gist one of those things? *Pediatr Blood Cancer* 2004;42(2):184-5.
2. Garrett JK, Jameson SC, Thomson B, **Collins MH**, Wagoner LE, Freese DK, Beck LA, Boyce JA, Filipovich AH, Villanueva JM, Sutton SA, Assa'ad AH, Rothenberg ME. Anti-interleukin-5 (mepolizumab) therapy for hypereosinophilic syndromes. *J Allergy Clin Immunol* 2004;113(1):115-9.
3. Halsted MJ, Perry LA, Cripe TP, **Collins MH**, Jakobovits R, Benton C, Halsted DG. Improving patient care: the use of a digital teaching file to enhance clinicians' access to the intellectual capital of interdepartmental conferences. *AJR Am J Roentgenol* 2004;182(2):307-9.
4. Bates MD, **Deutsch GH**. Molecular insights into congenital disorders of the digestive system. *Pediatr Dev Pathol* 2003;6(4):284-98.
5. Wooldridge JL, **Deutsch GH**, Sontag MK, Osberg I, Chase DR, Silkoff PE, Wagener JS, Abman SH, Accurso FJ. NO pathway in CF and non-CF children. *Pediatr Pulmonol* 2004;37(4):338-50.
6. Anderson KM, Perez-Montiel D, **Miles L**, Allen CM, Nuovo GJ. The histological differentiation of oral condyloma acuminatum from its mimics. *Oral Surg Oral Med Oral Pathol Oral Radiol Endodon* 2003;96(4):420-428.
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8. **Miles MV, Tang PH**, Ryan MA, Grim SA, Fakhoury TA, Strawsburg RH, DeGrauw TJ, Baumann RJ. Feasibility and limitations of oxcarbazepine monitoring using salivary monohydroxycarbamazepine (MHD). *Ther Drug Monit* 2004;26(3):300-4.
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10. Ryan M, Grim SA, **Miles MV, Tang PH**, Fakhoury TA, Strawsburg RH, deGrauw TJ, Baumann RJ. Correlation of lamotrigine concentrations between serum and saliva. *Pharmacotherapy* 2003;23(12):1550-7.
11. Tennison M, Ali I, **Miles MV**, D'Cruz O, Vaughn B, Greenwood R. Feasibility and acceptance of salivary monitoring of antiepileptic drugs via the US Postal Service. *Ther Drug Monit* 2004;26(3):295-9.
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14. **Steele PE, Tang PH**, DeGrauw AJ, **Miles MV**. Clinical laboratory monitoring of coenzyme Q10 use in neurologic and muscular diseases. *Am J Clin Pathol* 2004;121 Suppl:S113-20.
15. Thullen TD, Ashbaugh AD, Daly KR, Linke MJ, **Steele PE**, Walzer PD. New rat model of Pneumocystis pneumonia induced by anti-CD4(+) T-lymphocyte antibodies. *Infect Immun* 2003;71(11):6292-7.
16. Thullen TD, Ashbaugh AD, Daly KR, Linke MJ, **Steele PE**, Walzer PD. Sensitized splenocytes result in deleterious cytokine cascade and hyperinflammatory response in rats with Pneumocystis pneumonia despite the presence of corticosteroids. *Infect Immun* 2004;72(2):757-65.
17. **Tang PH, Miles MV, Miles L**, Quinlan J, Wong B, Wenisch A, **Bove K**. Measurement of reduced and oxidized coenzyme Q9 and coenzyme Q10 levels in mouse tissues by HPLC with coulometric detection. *Clin Chim Acta* 2004;341(1-2):173-84.
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20. Flick MJ, Du X, **Witte DP**, Jirouskova M, Soloviev DA, Busuttill SJ, Plow EF, Degen JL. Leukocyte engagement of fibrin(ogen) via the integrin receptor alphaMbeta2/Mac-1 is critical for host inflammatory response in vivo. *J Clin Invest* 2004;113(11):1596-606.
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26. Xu YH, Quinn B, **Witte D**, Grabowski GA. Viable mouse models of acid beta-glucosidase deficiency: the defect in Gaucher disease. *Am J Pathol* 2003;163(5):2093-101.