Department of Pathology
Annual Report
2015

Paul G. Koles, MD, Chair Pathology
Associate Professor of Pathology and Surgery

For the period including
January 1, 2015 — December 31, 2015
1. Statement from the Chair

The Boonshoft School of Medicine Department of Pathology serves the university and community in three interwoven domains:

1. education of medical students, residents, faculty, and clinicians
2. research in translational and clinical sciences and medical education
3. diagnostic pathology services for patients and their physicians

Education
Our three pathologist-educators devote over 50% of their time to support the professional development of Boonshoft SOM students and residents. We focus on developing habits of self-directed inquiry and critical thinking skills in our students—essential characteristics of competent physicians. We strive to model and facilitate collaborative learning among students and faculty. Learning resources, modules of instruction, courses, and assessment tools are designed and delivered in cooperation with basic science and clinical faculty in an interdisciplinary manner. An experienced group of four additional fullfaculty and 32 clinically affiliated faculty engage our students and residents, enhancing the breadth and depth of education in core courses and elective experiences.

Research
Diverse research and scholarly activities characterize our faculty. Drs. Lauf, Boivin, and Dudley do basic and translational science, the latter two directing the animal research facility that serves all faculty of Wright State University. Our four pathologists focus on clinical and medical education research, often accomplished in collaboration with students and/or residents. Scholarship in medical education supports evidence-based analysis and implementation of best-practice teaching and learning strategies.

Diagnostic Pathology Services
Clinical services are provided by all faculty in the pathology department. Our full-time faculty specialize in dermatopathology (Dr. Krishnamurthy), clinical microbiology (Dr. Miler), pediatric pathology (Dr. Mirkin), and autopsy pathology (Dr. Koles). Our clinically affiliated faculty practice all aspects of anatomic and clinical pathology, including surgical pathology, cytopathology, forensic pathology, hematopathology, molecular diagnostics, transfusion medicine, clinical chemistry, and clinical microbiology.
2. Programs/Divisions

<table>
<thead>
<tr>
<th>Name of Division or Program</th>
<th>Director</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Animal Resources</td>
<td>Greg Boivin, DVM</td>
<td>2008-present</td>
</tr>
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</table>

3. Fully Affiliated Faculty

<table>
<thead>
<tr>
<th>Name and Academic Position</th>
<th>Clinical Interests</th>
<th>Research Interests</th>
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</thead>
<tbody>
<tr>
<td>Greg P. Boivin, MS, DVM Professor of Pathology</td>
<td>Laboratory animal medicine</td>
<td>Translational science, orthopedics</td>
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<tr>
<td>and Orthopaedic Surgery</td>
<td></td>
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<tr>
<td>Emily S. Dudley, DVM Assistant Professor of Pathology</td>
<td>Laboratory animal medicine</td>
<td>Education in animal model research and safety</td>
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<tr>
<td>Paul G. Koles, MD Associate Professor of Pathology and Surgery</td>
<td>Autopsy pathology</td>
<td>Medical education</td>
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<tr>
<td>Smita Krishnamurthy, MD Assistant Professor of Pathology and Dermatology</td>
<td>Dermatopathology</td>
<td>Dermatopathology, medical education</td>
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<tr>
<td>Peter K. Lauf, MD University Professor</td>
<td>n/a</td>
<td>Cell membrane physiology and biophysics</td>
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<tr>
<td>Professor of Pathology and Pharmacology/Toxicology</td>
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<tr>
<td>Professor and Chair Emeritus, Physiology and Biophysics</td>
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<tr>
<td>Kennon A. Miller, MD Assistant Professor of Pathology</td>
<td>Clinical microbiology</td>
<td>Clinical microbiology, medical education</td>
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<tr>
<td>L. David Mirkin, MD Professor of Pathology and Pediatrics</td>
<td>Pediatric anatomic and clinical pathology</td>
<td>Pediatric pathology</td>
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4. Teaching

**Baccalaureate** [any course for a bachelor’s degree]

**Dr. Dudley:**
Bio 3700 bioethics, use of animals in research; Bio 4010 animal physiology, introduction to immunology; Psy 4020, methods in animal research; faculty mentor for Robert Johnson, BS 2015

**Dr. Boivin:**
Bio 3700 bioethics, use of animals in research; faculty mentor for Honoree’ Brewton and Aliane Kubwimana, 2015 (WSU STREAMS)

**Graduate students, including thesis supervision** [master’s, doctor’s post-doctoral]

**Dr. Boivin:**
PTX 775, integrative pharmacology/toxicology research methods, graduate thesis committee member for Nicole Mason PhD 2008, Amanda Huber PhD 2010, Nathaniel Dyment MS 2010, Hari Somineni MS 2013, Mahesh Kodali MS 2015

**Dr. Dudley:**
PTX 775, integrative pharmacology/toxicology research methods, aseptic surgery technique, pain and distress in laboratory animals; M&I 8000, graduate microbiology seminar, scientific misconduct in animal research. graduate thesis committee for Amie Schroder, MPH 2007

**Dr. Lauf:**
graduate thesis committee: Ameet Chimote, Ph.D 2009, Michael Lepera MS 2011 (director), Nagendra Ravilla MS 2013, Neelima Sharma, Ph.D. 2014 (co-advisor)

**Dr. Koles:**
graduate thesis committee for Nathan Weir PhD 2012

**Undergraduate medical education** [medical school]

**Dr. Boivin:**
Principles of Disease (MS1)

**Dr. Dudley:**
Principles of Disease (MS1)

**Dr. Krishnamurthy:**
Principles of Disease (MS1); Pathobiology and Therapeutics, Digestive, Musculoskeletal and Integument, Endocrine, Reproductive, Cardiovascular, Respiratory, and Renal Systems (all MS2); elective in dermatopathology (MS4).

**Dr. Miller:**
Principles of Disease (course director, MS1), Pathobiology and Therapeutics, Hematologic, Digestive, Endocrine, and Cardiovascular Systems (all MS2)

**Dr. Mirkin:**
effective in pediatric pathology (MS4).

**Dr. Koles:**
Principles of Disease (MS1), Pathobiology and Therapeutics, Medical Neuroscience, Mind (behavioral science), Hematologic, Digestive, Musculoskeletal and Integument, Endocrine, Reproductive, Cardiovascular, Respiratory, and Renal Systems (all MS2); electives in thyroid cytopathology and medical education research (MS4)
Graduate medical education [residents, fellows]

Dr. Krishnamurthy:  
histopathology of skin diseases, BSOM dermatology residency, 2012-present

Dr. Mirkin:  
elective in pediatric pathology, BSOM pediatrics residency  
Continuing medical education at Childrens Medical Center (grand rounds, teaching conferences)

Dr. Koles:  
Surgical Pathology of the Gallbladder and Extrahepatic Bile Ducts with Clinical Correlations.  

Other

Dr. Dudley:  
Training Provided to Faculty, Staff, and Students (WSU)  
Laboratory Animal Techniques Laboratory  2014-present  
Aseptic Surgery Technique  2011-present  
Pain Assessment in the Rat  2010-present  
Pain Assessment in the Mouse  2009-present  
Controlled Substance Use in Research Animals  2008-present  
Introductory Course in Laboratory Animal Care and Use  2007-present  
Anesthesia Monitoring and Record Keeping  2007-present

Dr. Boivin:  
Pathway to Health Professions, Annual Invited presentation on Veterinary Medicine Careers,  
Wright State University For high school students, 2011-2016.

Dr. Koles:  
introduction to pathology career, Horizons in Medicine for Dayton high school students, 2012-present.

5. Scholarly Activity

Funded Grants

Boivin G, PI:  
GLAS:  Comparison of Physiologic Responses to Different Mouse Euthanasia Methods 7/1/15-12/15/16  (Principal Investigator) Total Direct: $22,783  
Boivin G, PI:  
Devicor Mammothome Biopsy Study 11/1/10-10/31/16. Total Direct: $180,000 (contract)

Publications

Papers in refereed journals

Dr. Boivin:  


Boivin GP, Wyatt C, Dudley ES, Bottomley M, Grobe N. Physiologic, behavioral, and histologic response to different CO\textsubscript{2} chamber replacement rates in C57BL/6N male mice. JAALAS In Press, 2015.

Grobe N, Bottomley M, Dudley ES, Wyatt CN, Boivin GP. Physiological, Behavioral, and Histological Responses to Different CO\textsubscript{2} Chamber Replacement Rates in C57BL/6 Male Mice. Journal of the American Association of Laboratory Animal Science (in press).

Dr. Dudley:


Dr. Krishnamurthy:


Dr. Lauf:


Dr. Koles:


BOOKS, CHAPTERS, REVIEWS

Dr. Boivin:

Boivin GP. Update on transgenic animal technology. Lab Anim (NY). 44(6)209, 2015. PMID: 25989553

Dr. Lauf:

K\textsuperscript{+}-Cl cotransporters, cell volume homeostasis and neurological disease. Kristopher T. Kahle\textsuperscript{1,2#}, Arjun R. Khanna, Seth L. Alper, Norma C. Adragna, Peter K. Lauf, Dandan Sun, and Eric Delpire. Frontiers in Cellular Neurosciences, 2015, TRMOME
PUBLISHED ABSTRACTS

Dr. Boivin:


Boivin GP*, Grobe N. Physiologic effects of common procedures in male C57BL/6 mice. AALAS Nov 1-5, 2015.


Boivin GP*, Bottomley M, Grobe N. Physiologic, behavioral, and histologic response to different CO2 chamber replacement rates in C57BL/6N male mice. AALAS Nov 1-5, 2015.


Dr. Lauf:


Chandra Maharjan, Norma C. Adragna and Peter K Lauf. Demonstration of the interaction between the Na+/K+ ATPase pump and Bcl-2 proteins Mcl-1 and Bax by coimmunoprecipitation and immunocytochemical colocalization. 2015, Ohio Valley Society of Toxicology 2015 Summer meeting. Chandra Maharjan, Norma C. Adragna and Peter K Lauf.

SIGNIFICANT PRESENTATIONS

Dr. Boivin:

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Dr. Lauf:
Invited Lecture: The Na/K ATPase-Bcl-2 Protein Relationship: Oligomeric Biosensor in the Cell’s Destiny? May 18, 2015, University of Cincinnati, Dept. of Molecular and Cellular Physiology.

Dr. Koles:

Koles P: Creating Effective Application Exercises. Faculty development workshop, 3 hours, Liberty University, College of Medicine, Oct. 2, 2015, Lynchburg, Virginia.


Koles P, Smith A: Facilitation Skills for Team-Based Learning. Faculty development workshop, Unaizah College of Medicine, Qassim University, September 6, 2015, Unaizah, Saudi Arabia

Koles P: Team-Based Learning, How and Why It Works and Designing Effective Modules for Team-Based Learning, faculty development workshops (6 hours). University of Connecticut School of Medicine, June 9, 2015, Farmington, Connecticut.


Koles P, Burns C: Peer Feedback and Evaluation: All About Accountability, 2 hour workshop. Team-Based Learning Collaborative 14th annual conference, March 5-7 2015, St. Petersburg, Florida.

Dr. Krishnamurthy:

Schloemer J, Dundon S, Krishnamurthy S, Shamma HN, Rubin M. “A case of lymphomatoid papulosis masked by atopic dermatitis.” 10/15 at the Ohio Dermatological Association meeting, Columbus, OH.

6. Summary of Service Activities

STUDENT ADVISING

Dr. Krishnamurthy

• academic counseling and study strategies, years 1 and 2
• planning intramural and extramural electives, choosing a residency, careers in pathology
• faculty advisor, pathology career interest group

Dr. Koles

• academic counseling and study strategies, years 1 and 2
• USMLE steps 1 and 2 preparation
• remedial mentoring for students failing USMLE step 1 or step 2
• planning intramural and extramural electives, choosing a residency, careers in pathology
COMMITTEE MEMBERSHIP/OFFICER

- Wright State University Boonshoft School of Medicine

  **Dr. Koles:**
  - Boonshoft SOM Committee
  - Wright Curriculum Steering Committee, voting member, 2011-present
  - Student Promotions Committee, voting member, 2012-present
  - Faculty Curriculum Committee, voting member, 2010-present
  - Executive Committee, voting member, 2009-present
  - Biennium 1 subcommittee of FCC, member (appointed), 2002-present

  **Dr. Krishnamurthy**
  - Faculty Curriculum Committee (10/2014-present)
  - Staying Alive Cardiovascular, Pulmonary, Renal Integrated Module Leadership Committee (6/2015-present)
  - Problem Based Learning Case Writing Committee (8/2015-present)
  - LCME Self-Study Subcommittee 6, Co-Chair (12/2015-present)

  **Dr. Mirkin:**
  - Admissions Committee, 2010-present

- Wright State University

  **Dr. Dudley:**
  - WSU Institutional Animal Care and Use Committee, Alternate Member, 2006-present
  - WSU Institutional Biosafety Committee, Member, 2007-2009, 2010-present

- Wright State Physicians

  **Dr. Koles:**
  - Voting member, WSP Board of Directors, 2010-present

- Hospital or affiliated institution [name]

  **Dr. Dudley:**
  - Dayton Veterans Affairs, Institutional Animal Care and Use Committee, Member, 2015 – present

- National

  **Dr. Dudley:**
  - Ad hoc Manuscript Reviewer, Macedonian Veterinary Review, 2015
Dr. Boivin:
Editor-in-Chief: Journal of Contemporary Orthopaedic Research 2013-current
Editorial Board: Comparative Medicine 2001-current
American College of Laboratory Animal Medicine Foundation:
Board Member 2000-2015;
Scientific Director 2005-2015;
Chairman 2009-2015;
Editorial Board: Journal of the American Association for Laboratory Animal Science 2001-current

Dr. Lauf:
Editorial Board: Cellular Physiology & Biochemistry. Karger. Switzerland.

Dr. Koles:
Reviewer: Academic Medicine, Advances in Physiology Education, Teaching and Learning in Medicine, MedEdPortal (AAMC)
National Board of Medical Examiners
▪ multiple roles, 2009-present
▪ Pathology and Genetics Item Writing Committee, 2012-present
▪ Co-chair, Pathology and Genetics Item Writing Committee, 2015-present
▪ Item Review Committee, Step 1 USMLE exam, 2015-present
Team-Based Learning Collaborative
▪ multiple roles, 2007-present
▪ Chair, Training and Certification Committee, 2012-present
International Association of Medical Science Educators
▪ membership committee, 2012-present

Dr. Krishnamurthy:
External Reviewer, AAMC 2015 National Medical Education Meeting Submissions, 4/2015 (5 research and emerging concepts abstracts reviewed)
Peer Reviewer, AAMC 2016 Medical Education Meeting & Central Group on Educational Affairs Regional Meeting, 11/2015-1/2016
Peer Reviewer, MedEdPORTAL publications: AAMC online medical education resource; 4/17/14-present.
Service to Community

Dr. Boivin:
Pathway to Health Professions, Annual Invited presentation on Veterinary Medicine Careers, 2011-present

Dr. Dudley:
Member, Greene County 4-H Poultry Committee, 2011-present
Secretary, Greene County 4-H Poultry Committee, 2013-present
Judge, Bellbrook Middle School Science Fair

Dr. Koles:
Volunteer, Blessings in a Bag food supplement program for children in Miamisburg City Schools

Dr. Krishnamurthy:
Ohio Responds Medical Reserve Corps Volunteer: 3/2013 to present
American Red Cross, Dayton Chapter, Volunteer, 2/15 to present (2 hours/month)
American Red Cross, Save a Life Saturday, Citizen CPR Instructor, 3/28/15 (3 hours)

8. Honors and awards [Faculty or staff]

Dr. Krishnamurthy:
Teaching Excellence in Pre-Clinical Curriculum, 2015, Boonshoft School of Medicine

Dr. Koles:
Teaching Excellence in Pre-Clinical Curriculum, 2004-2014 (eleven consecutive years),
Boonshoft School of Medicine

9. Hosted events [CME, etc.]