Department of Pathology
Annual Report
2016

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

For the period including
January 1, 2016 — December 31, 2016
1. Statement from the Chair

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

1. education of medical students, residents, faculty, and clinicians
2. longitudinal development and quality improvement of the curriculum
3. research in medical education, clinical science, and translational science
4. 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, residents, and peer faculty. We strive to develop habits of intellectual curiosity, self-directed inquiry and critical thinking in our students—essential characteristics of competent physicians. We strive to model those habits while facilitating collaborative learning among students and faculty. We have developed expertise in the creation of self-directed learning resources, modules of interactive instruction, management of entire courses, and assessment tools that measure both knowledge and professional behavior. These activities depend on close cooperation with basic science and clinical faculty, modeling an interdisciplinary approach to medical education. An experienced group of four additional full-time faculty and 32 clinically affiliated faculty enhance the breadth and depth of education in both required foundational science courses and elective experiences.

Development of Curriculum
The design and implementation of our new WrightCurriculum, launching in July, 2017, has occupied a large amount of our creative energy over the last three years (2014-2016). Drs. Krishnamurthy, Miller, and Koles have served in leadership and supportive roles throughout this process. We will continue our commitment to the continuous improvement of the new curriculum.

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 mainly on clinical and medical education research, often accomplished in collaboration with students, residents, or clinical faculty. Our scholarship in medical education is driven by evidence-based analysis of quantitative and qualitative data.

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. Miller), 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.

Paul G. Koles, MD
### 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>
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</tbody>
</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 and Orthopaedic Surgery</td>
<td>Laboratory animal medicine</td>
<td>Translational science, orthopedics, development of medical devices</td>
</tr>
<tr>
<td>Emily S. Dudley, DVM, Assistant Professor of Pathology</td>
<td>Laboratory animal medicine</td>
<td>Education in animal model research, including safety and ethics</td>
</tr>
<tr>
<td>Paul G. Koles, MD, Associate Professor of Pathology and Surgery</td>
<td>Autopsy pathology</td>
<td>Medical education; clinical pathology; supportive role in translational science</td>
</tr>
<tr>
<td>Smita Krishnamurthy, MD, Assistant Professor of Pathology and Dermatology</td>
<td>Dermatopathology</td>
<td>Dermatopathology, medical education</td>
</tr>
<tr>
<td>Peter K. Lauf, MD, University Professor, Professor of Pathology and Pharmacology/Toxicology, Professor and Chair Emeritus, Physiology and Biophysics</td>
<td>n/a</td>
<td>Cell membrane physiology and biophysics</td>
</tr>
<tr>
<td>Kennon A. Miller, MD, Assistant Professor of Pathology</td>
<td>Clinical microbiology</td>
<td>Clinical microbiology, medical education</td>
</tr>
<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 4010 animal physiology, introduction to immunology; Psy 4020, methods in animal research;

**Dr. Boivin:**

- Bio 370 bioethics, use of animals in research

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

**Dr. Boivin:**

- Graduate thesis committee, Mahesh Kodali MS 2015

**Dr. Dudley:**

- Microbiology Seminar, M&I 8000; Lecture: Scientific Misconduct in Animal Research

**Dr. Koles:**

- Graduate thesis committee, 2015-present, Denise Kramer, MS, 2015-2016, candidate for PhD

**Undergraduate medical education** [medical school]

**Dr. Dudley:**

- Principles of Disease (MS1); Zoonotic Diseases, Human Parasitology

**Dr. Krishnamurthy:**

- Principles of Disease (MS1); Pathobiology and Therapeutics, Digestive, Musculoskeletal and Integumen (course director), Endocrine, Reproductive, Cardiovascular, Respiratory, and Renal Systems (all MS2); elective in dermatopathology (MS4).

**Dr. Miller:**

- Principles of Disease (course director, MS1), Pathobiology and Therapeutics, Hematology, Digestive, Endocrine, Cardiovascular, and Renal Systems (all MS2)

**Dr. Mirkin:**

- Elective in pediatric pathology (MS4).

**Dr. Koles:**

- Principles of Disease (MS1), Pathobiology and Therapeutics, Medical Neuroscience, Mind (behavioral science), Hematology, 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 Colon and Anus with Clinical Correlations. Dept. of Surgery Grand Rounds, Boonshoft School of Medicine, Dayton, Ohio, February 20, 2016.

Other education
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.

5. Scholarly Activity

Funded Grants
Boivin G, PI: GLAS: Comparison of Physiologic Responses to Different Mouse Euthanasia Methods 7/1/15-6/15/17 Total Direct: $22,783

Boivin G, PI: Devicor Mammatome Biopsy Study 11/1/10-10/31/19. Total Direct: $210,000 (contract)

Publications
Papers in Refereed Journals, 2016 Only

Dr. Boivin:


Dr. Dudley:


Dr. Lauf:


Dr. Miller


PUBLISHED ABSTRACTS

Dr. Boivin:

Boivin GP*, Markert RJ. Factors Affecting the Vocational Calling of Laboratory Animal Care and Research Employees. AALAS Oct 30-Nov 3, 2016.


Dr. Krishnamurthy


Dr. Lauf:


SIGNIFICANT PRESENTATIONS

Dr. Boivin:


Dr. Dudley:


Dr. Lauf:

Invited Lecture: Role of Bcl-2 Proteins and the NA/K Pump ATPase in the Cell’s Fate. February 12, 2016, 6th Annual Conference of the Puerto Rico Physiological Society, University of Puerto Rico Medical Sciences Campus.


Dr. Koles:

Designing a TBL Module and Creating Effective Application Exercises; faculty development workshops (6 hours). United Arab Emirates University, Sept. 28-29, 2016, Al Ain, United Arab Emirates.

Designing Effect Modules for Team-Based Learning; Facilitation Skills for Team-Based Learning. Faculty development workshops, 6 hours, College of Osteopathic Medicine, Touro University, June 1-2, 2016, Vallejo, California


6. Summary of Service Activities

STUDENT ADVISING

Dr. Krishnamurthy
- academic counseling and study strategies, years 1 and 2
- planning intramural and extramural electives, residency/career in pathology and dermatology
- faculty advisor, pathology career interest group

Dr. Koles
- academic counseling and study strategies, years 1 and 2
- USMLE steps 1 and 2, preparation and mentoring
- remedial mentoring for students failing USMLE step 1 or step 2 CK
- planning intramural and extramural electives, residency/career in pathology

Dr. Miller
- academic counseling and study strategies, years 1 and 2
- planning intramural and extramural electives, residency/career in pathology

COMMITTEE MEMBERSHIP/OFFICER

A. Boonshoft School of Medicine

Dr. Boivin
Research Committee, chair, 2014-current

Dr. Koles:

<table>
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<th>Committee</th>
<th>Position</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Wright Curriculum Steering Committee</td>
<td>voting member</td>
<td>2011-present</td>
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<tr>
<td>Foundations Clinical Medicine subcommittee</td>
<td>co-chair</td>
<td>2014-2015</td>
</tr>
<tr>
<td>Student Promotions Committee</td>
<td>voting member</td>
<td>2012-2016</td>
</tr>
<tr>
<td>Faculty Curriculum Committee</td>
<td>voting member</td>
<td>2010-2016</td>
</tr>
<tr>
<td>Executive Committee</td>
<td>voting member</td>
<td>2009-present</td>
</tr>
<tr>
<td>Origins I Module Steering Committee, WCSC</td>
<td>member</td>
<td>2015-present</td>
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<tr>
<td>Assessment and Evaluation Committee, WCSC</td>
<td>member</td>
<td>2016-present</td>
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Dr. Krishnamurthy
- Faculty Curriculum Committee, 10/2014-present
- Student Promotions Committee, 2016-present
- Staying Alive Cardiovascular, Pulmonary, Renal Module Committee, 6/2015-present
- Problem Based Learning Case Writing Committee, 8/2015-present
- LCME Self-Study Subcommittee 6, Co-Chair, 12/2015-2016

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

C. Wright State Physicians
   Dr. Koles:
   Board of Directors, voting member, 2010-present

D. Hospital or Affiliated Institution
   Dr. Dudley:
   Dayton Veterans Affairs, Institutional Animal Care and Use Committee, Member, 2015 – present

E. 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
   Editorial Board: Journal of 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, member 2011-2014
     Co-chair, Pathology and Genetics Item Writing Committee, 2015-2016
     Item Review Committee, Step 1 USMLE exam, 2015-2016
   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:
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)

8. Honors and awards [Faculty or staff]

Dr. Dudley:
Board certification, American College of Animal Welfare, 2016

Dr. Krishnamurthy:
Certification, trainer-consultant in team-based learning, Team-Based Learning Collaborative, March, 2016

Dr. Koles:
Teaching Excellence in Pre-Clinical Curriculum, 2016, Boonshoft School of Medicine Faculty Mentor Award, 2016, Boonshoft School of Medicine

9. Hosted events [CME, etc.]

Fourth Annual Visiting Professorship in Pathology: John R Goldblum, MD, Chair of Anatomic Pathology, Cleveland Clinic Foundation. Ancillary Diagnostic Techniques in the Diagnosis of Soft Tissue Tumors: A Pattern-Based Approach (afternoon lecture). Inflammatory Bowel Disease and IBD-Related Dysplasia: One Pathologist’s Perspective (evening lecture). April 19, 2016.