A. Highlights of the Year

Our department’s faculty is active in four domains: teaching, research, clinical practice, and service to the community. Activities in these domains are detailed in sections 2-4 of this report. The following selected accomplishments of our full-time faculty are noteworthy, representing new directions in research or significant innovations in education.

- Greg Boivin, D.V.M., director of animal laboratory resources, obtained grant funding from Devicor for $100,000 as PI for a Mammatome Biopsy study. Dr. Boivin has not previously investigated biopsy devices.

- Osvaldo Lopez, Ph.D., immunologist and co-director of the Principles of Disease course for first-year medical students, transformed the immunology curriculum by implementing 23 hours of active learning in class, using peer-to-peer and team-based strategies to engage his students. He is analyzing students’ performance on examination questions pre-and post-innovations to assess whether these changes impact academic performance.

- David Mirkin, M.D., chair of pathology at Children’s Medical Center, mentored fourth-year medical student Joanna Hurrell to co-author a manuscript that has been accepted for publication: Pediatric obesity and hepatic steatosis: a study from Children’s Medical Center. Pediatric Forum (in press)


- Peter Lauf, M.D, University Professor and emeritus professor pathology, while officially “retired” from service to the university, continues to do research and published a paper investigating aquaporin-mediated water transport, a new area of research for him.

- B. Laurel Elder, Ph.D., clinical microbiologist and co-director of the Principles of Disease course for first-year medical students, became a member of the National Board of Medical Examiners item-writing committee in microbiology and immunology.

- Paul Koles, M.D., pathologist & chair, designed and delivered 25 hours of extramural faculty development workshops for medical educators in four settings: annual meetings of the Group for Research in Pathology Education and the Team-Based Learning Collaborative, Kent State University, and West Virginia School of Osteopathic Medicine.
B. Clinical Activities

1. Dr. Mirkin completes 25th year as chairman of pathology and laboratory medicine at Childrens' Medical Center. He practices surgical pathology, cytopathology, and autopsy, with annual departmental workload of 115,000 laboratory tests, 4,500 surgical specimens, 230 cytologic specimens, 50 frozen section consultations, and 4 autopsies.

2. Dr. Koles' Wright State University Regional Postmortem Service performed autopsies and generated final reports for 9 patients, serving families and physicians in southwestern Ohio. Most prosections were done with 3-4 medical students, reviewing normal gross anatomy, pathologic anatomy, and clinical-pathologic correlations.

3. Dr. Dudley performs postmortem examinations on animals in the laboratory animal resources facility.

C. Educational Activities

1. Pathology education involves 6 full-time faculty (Drs. Elder, Lopez, Dudley, Boivin, Mirkin, and Koles) and 19 active clinically affiliated volunteer faculty. Undergraduate, graduate, and postgraduate medical education is provided by our faculty. The bulk of undergraduate medical education occurs in the second year of the BSOM curriculum, during which pathology is fully integrated with physiology, pharmacology, and clinical management in a systems-based curriculum. In 2011, approximately thirty 4th-year students participated in specialized pathology electives supervised by our faculty.

2. Boonshoft School Of Medicine pre-clinical courses and participating faculty

   a. Principles of Disease: Drs. Elder and Lopez, co-course directors; Dr. Paul Gibbs (clinically affiliated), Dr. Dudley, Dr. Boivin, Dr. Koles
   b. Pathobiology and Therapeutics: Dr. Koles, co-course director; Drs. Richard Marsh, Yvonne Dowdy, and Brian Casto (clinically affiliated)
   c. Medical Neuroscience: Drs. M. Gregory Balko, Gordon Murphy, and Pamela Sequeira (clinically affiliated), Dr. Koles
   d. The Mind (behavioral science and psychiatry): Dr. M. Gregory Balko (clinically affiliated), Dr. Koles
   e. Hematology: Drs. Linda Chu, M. Atef Shrit, Ghada Khalife (clinically affiliated), Dr. Koles
   f. Musculoskeletal System and Integument: Dr. Koles
   g. Cardiovascular System: Dr. Chris Rolitsky (clinically affiliated), Dr. Koles
   h. Respiratory System: Dr. Robert Stewart (clinically affiliated), Dr. Elder, Dr. Koles
   i. Urinary Tract System: Dr. Kent Harshbarger (clinically affiliated), Dr. Koles
   j. Endocrine System: Dr. Benjamin McCalip (clinically affiliated), Dr. Koles
   k. Reproductive System: Drs. Patricia McDowell, Scott Arnold, Benjamin McCalip (clinically affiliated); Dr. Koles
   l. Gastrointestinal System, including liver, bile ducts, and pancreas: Drs. Daniel Hood and Ejaz Ahmad (clinically affiliated), Dr. Elder, Dr. Koles
3. **Fourth-year electives in pathology and participating faculty**

a. forensic pathology, Montgomery County Coroners' Office: Dr. Lee Lehman, director; Drs. Kent Harshbarger, Bryan Casto, and Susan Allen
b. hospital-based pathology, Kettering Medical Center: Dr. Patricia McDowell, director, and Dr. Yvonne Dowdy
c. hospital-based pathology, Miami Valley Hospital: Dr. Daniel Hood, director; Drs. Benjamin McCalip, M. Atef Shrit, Paul Gibbs, and Luke Wibowo.
d. pediatric pathology, Childrens' Medical Center: Dr. David Mirkin, director
e. cytopathology, Boonshoft School of Medicine: Dr. Paul Koles, director
f. extramural electives in pathology: coordinated by Dr. Paul Koles

4. **Undergraduate education, Wright State University**

a. Dr. Elder teaches microbiology in the clinical laboratory science program
b. Dr. Koles teaches clinical microscopy in the clinical laboratory science program
c. Dr. Lopez lectures on the immune response against pathogens in the college of science and mathematics
d. Dr. Boivin lectures on bioethics (use of animals for research) in the college of science and mathematics

5. **Graduate school education, Wright State University**

a. Dr. Lopez teaches immunology in two graduate school courses, mentored Richard Chou to complete his master’s thesis (Peptides for personalized therapy against chronic lymphocytic leukemia), is currently mentoring Amber Braddock’s in the master of science program (Role of IgG2 in the rapid immune response against pathogens), serves on masters’ thesis committee for Jayharsh Panchal (Department of Pharmacology and Toxicology), and is a member of the PhD thesis committee for Poornina Narayan (Department of Biology).
b. Dr. Elder mentors graduate students working in Dr. Larry Arlian’s lab
c. Dr. Koles served on Nathan Weir’s PhD thesis committee (Role of Angiotensin Converting Enzyme 2 (ACE2) in a Murine Model of Insulin Resistance and Albuminuria.)
d. Dr. Dudley teaches integrative research methods in the department of pharmacology and toxicology. She provides training for faculty and students in the following areas: Introductory Course in Laboratory Animal Care and Use 2007-present; Anesthesia Monitoring and Record Keeping 2007-present; Controlled Substance Use in Research Animals 2008-present; Pain Assessment in the Mouse 2009-present; Pain Assessment in the Rat 2010-present; Aseptic Surgery Technique 2011-present
e. Dr. Boivin teaches murine comparative anatomy (lecture and laboratory) and served on thesis committees for Amanda Huber (PhD) and Nathaniel Dyment (MS).
f. Dr. Lauf teaches cell physiology in the graduate school: cellular ion and volume homeostasis, physiology and pharmacology of vascular cells, library research II for graduate students. He currently serves as co-advisor and committee member for PhD student Neelima Sharma. He mentored Michael Lepera for completion of his MS thesis in 2011 and currently mentors Nagendra Ravilla for the MS thesis.

6. Postgraduate medical education

a. Dr. Koles teaches in the BSOM department of surgery by providing two focused reviews in surgical pathology per year at grand rounds.
b. Dr. Elder gives lectures on clinical microbiology to residents and fellows on the infectious disease service at Miami Valley Hospital
c. Dr. Lopez gave invited presentations for the BSOM departments of internal medicine at Miami Valley Hospital and the Dayton Veterans' Affairs Medical Center
d. Dr. Mirkin is adjunct faculty for the Ball Memorial Hospital residency in pathology, Muncie, Indiana.

D. Faculty (full-time)


2. Emily Dudley, D.V.M. assistant professor of pathology and clinical veterinarian, animal resource facility.

3. B. Laurel Elder, Ph.D, associate professor of pathology; clinical microbiologist. Research interests: immunomodulation of scabies infection; clinical microbiology

4. Peter Lauf, M.D., emeritus professor of pathology; research physiologist. Research interests: cell membrane physiology and biochemistry, with clinical applications to human disease

5. Osvaldo Lopez, Ph.D., associate professor of pathology; immunologist. Research interests: immune response to viral infection; immunologic mechanisms and predictors of prognosis in chronic lymphocytic leukemia

6. L. David Mirkin, M.D., professor of pathology and pediatrics; pediatric pathologist. Research interests: pediatric surgical pathology

7. Paul Koles, M.D., chair pathology, associate professor of pathology and surgery; autopsy and cytopathology; Research interests: medical education (assessment, teaching and learning strategies, professionalism)
E. Faculty (clinical affiliated faculty contributing and supervising pathology education)

1. Paul Gibbs, M.D., assistant clinical professor, Miami Valley Hospital, Department of Pathology
2. Richard Marsh, M.D., associate clinical professor, Coroner of Clark County
3. Yvonne Dowdy, M.D., hematopathologist, Kettering Medical Center, Department of Pathology
4. Brian Casto, M.D., assistant clinical professor, forensic pathologist, Montgomery County Coroner’s Office
5. Susan Allen, M.D., forensic pathologist, Montgomery County Coroner’s Office
6. Lee Lehman, M.D., Ph.D., associate clinical professor, forensic pathologist, Montgomery County Coroner’s Office
7. Greg Balko, M.D., associate clinical professor; independent consultant in neuropathology and forensic pathology
8. Pamela Sequeira, M.D., assistant clinical professor, neuropathologist, Good Samaritan Hospital – Cincinnati, Department of Pathology
9. Gordon Murphy, M.D., associate clinical professor, forensic pathologist (retired)
10. Atef Shrit, M.D., associate clinical professor, hematopathologist, Miami Valley Hospital, Department of Pathology
11. Linda Chu, M.D., Ph.D., associate clinical professor, surgical pathologist and cytopathologist, Kettering Medical Center, Department of Pathology
12. Ghada Khalife, M.D., assistant clinical professor, transfusion medicine specialist, Community Blood Center of Dayton
13. Chris Rolitsky, M.D., assistant clinical professor, surgical pathologist, Miami Valley Hospital, Department of Pathology
14. Robert Stewart, M.D., associate clinical professor, surgical pathologist and forensic pathologist, Springfield Regional Medical Center, Department of Pathology
15. Kent Harshbarger, M.D., assistant clinical professor, forensic pathologist, Coroner of Montgomery County
16. Scott Arnold, M.D., assistant clinical professor, surgical pathologist, Kettering Medical Center, Department of Pathology
17. Patricia McDowell, M.D., Ph.D., associate clinical professor, surgical pathologist, Kettering Medical Center, Department of Pathology
18. Daniel Hood, M.D., associate clinical professor, hematopathologist, Miami Valley Hospital, Department of Pathology
19. Ejaz Ahmad, M.D., assistant clinical professor, hematopathologist, Good Samaritan Hospital Department of Pathology

F. Academic Scholarly Activity

1) Presentations and abstracts:


h. Boivin GP*, Gayton JC, Rich MM, Rubino LJ. Rabbit supraspinatus motor endplates are unaffected by a rotator cuff tear. AALAS National Meeting, poster #240; October 2, 2011.


2) Publications in peer-reviewed journals


3) **Publications:** books, book chapters, letters, and non-peer reviewed articles

G) **Extramural workshops and educational activities**

**B. Laurel Elder**
   Elder BE, Koles P: Team Based Learning Workshops (Principles and Practices of Team-Based Learning; Development of Team-Based Learning Modules). GRIPE (Group for Research in Pathology Education) Annual Meeting, Huntington, West Virginia, Jan. 16-18, 2011.

**Peter Lauf** Lake Cumberland Biological Transport Group, 2011.

**Osvaldo Lopez**

**Paul Koles**
   1. Koles P: faculty workshops, 10 hours. Team-Based Learning: How and Why It Works; Designing Effective Modules for Team-Based Learning; Team-Based Learning and Course Design. West Virginia School of Osteopathic Medicine, May 24-25, 2011.
   2. Koles P: faculty workshops, 5 hours. Fundamental Principles of Team-Based Learning; Designing and Implementing Team-Based Learning Modules. Kent State University, Kent, Ohio; March 16-17, 2011.
   5. Elder BE, Koles P: Principles and Practice of Team-Based Learning; Development of Team-Based Learning Modules. Group for Research in Pathology Education Annual Meeting, Huntington, West Virginia, Jan. 16-18, 2011.

**H. Journal Reviews**

**Greg Boivin:** Acta Biomaterialia, Physiology & Behavior, Comparative Medicine, Journal of Orthopaedic Research, Journal of the American Association for Laboratory Animal Science, Contemporary Topics in Laboratory Animal Science.
Peter Lauf: Editorial Board Member, Journal Cellular Physiology and Biochemistry


I. Consultantships

Emily Dudley: Consulting Veterinarian, Central State University’s Institutional Animal Care and Use Committee.

Paul Koles: Consultant in Faculty Development, Team-Based Learning Collaborative.

J. Recognitions, Awards, Honors

Paul Koles: Teaching Excellence, Pre-Clinical Education in Boonshoft School of Medicine, 2011.

K. Grants

Greg Boivin
1. AOSSM Young Investigator Grant (PI: Dulaney-Cripe) Adipose Tissue-Derived Stem Cells to Improve Tendon-to-Bone Repair 2011-2013
   Co-Principal Investigator & Mentor: $40,000
2. AOFAS Research Grant (Co-PI: Boivin & Laughlin) Exercise Effect on Diabetic (db/db) Mice Achilles Tendons 6/1/12-5/31/11
   Co-Principal Investigator: $20,000
   Total Direct: $24,850

Osvaldo Lopez
Research Challenge grant. Title: Peptides targeting the B cell receptor on Chronic Lymphocytic Leukemia Cells for therapy and diagnosis of minimal residual disease Total :$35,000.

L. Contracts

Greg Boivin
Central State University (PI: G Boivin) Study of the Action of Venom Protein on the Proliferation of Prostate Cancer Cells 7/1/08-7/1/12
   (PI) Total Direct: $112,368
Devicor (PI: G Boivin): Mammothome Biopsy Study 11/1/10-10/31/12
   (Principal Investigator) Total Direct: $150,000

M. Service

Greg Boivin
1. Wright State University Path to Health Professions: Veterinary Medical Opportunities 2011-2012
2. High School Science Fair Projects: Tory Babel 201
Emily Dudley
1. WSU Laboratory Animal Care and Use Committee, Alternate Member, 2006-present
2. WSU Institutional Biosafety Committee, Member, 2007-2009, 2010-present
3. Central State University Institutional Animal Care and Use Committee, Member, 2010-present
4. Member, Greene County 4-H Poultry Committee, 2011-present

B. Laurel Elder
1. National Board of Medical Examiners, microbiology item writing committee, 2011-present
2. Institutional Review Board; Wright State University, 1989-present. Chairperson 2005-present
3. Biennium 1 Subcommittee of Faculty Curriculum Committee, chair
4. Faculty Curriculum Committee, voting member
5. Secretary, South Central Association for Clinical Microbiology. 2010 – present.

Osvaldo Lopez
1. Student advising: estimated 100 hours mentoring medical students in immunology, Principles of Disease course
2. Boonshoft SOM: voting member Research Committee, 2011-2012
3. Wright State University: voting member Research Council, 2012-2013
4. Community service: participant in Latino Dream Team

Peter Lauf
1. Member, Board of Trustees Dayton Philharmonic Orchestra 2009-2012
2. Member, Board of Directors, Dayton Chamber Music Society 2006-present

David Mirkin
1. Wright State University: academic integrity committee, admissions committee
2. Judge, 12th Annual DAGMEC Resident Research Forum, April 28, 2011
3. Judge, Montgomery County Science Day, March 5, 2011; sponsored by the Ohio Academy of Science and the University of Dayton Research Institute
4. Community Blood Center/Community Services Medical Liaison Committee, 2004-present

Paul Koles
1. National Board of Medical Examiners, pathology and genetics item writing committee, 2010-present
2. Faculty Task Force, curriculum revision, 2011-present
3. Faculty Curriculum Committee, 2010-present
4. Executive Committee, 2009-present
5. Biennium 1 subcommittee of Faculty Curriculum Committee, 2002-present
6. Speaker for BSOM Horizons in Medicine program, for high school students interested in medical careers

Respectfully submitted,