Department of Neuroscience, Cell Biology and Physiology

Annual Report

January 1, 2017- December 31, 2017

Eric S. Bennett, Ph.D.
Professor and Chair

For the period including
January 1, 2017 — December 31, 2017
Statement from the Chair/Associate Dean

[Highlights of the year limited to 500 words]

NCBP is a matrix department within the Boonshoft School of Medicine (BSoM) and the College of Science and Mathematics (CoSM). NCBP faculty and staff strive to sustain excellence in basic, translational, and clinical research, while also providing the best in undergraduate, graduate, and medical education. Specific examples of the many accomplishments of our faculty and staff this past year (2017) include the following:

A. Research: Established/maintained well-funded research programs with a common focus on cell signaling in health and disease.
   1) Federal funding – Nearly all funding from federal programs (e.g., NIH, NSF, DARPA, AFRL)
   3) Peer-reviewed publications – >30 in high impact journals

B. Education:
   1) Medical student education - NCBP faculty were significantly involved in the development, administration, and delivery of current and new BSOM curricula. For example, NCBP faculty members direct four and teach in five of seven basic science modules (courses) throughout the Wright Curriculum M1 and M2 years.
   2) Ph.D. education/training - NCBP is a significant contributor to the education and training of Ph.D. and M.D/Ph.D. students in the Biomedical Sciences program through mentoring students and delivery of core/elective courses.
   3) M.S. degree programs – M.S. Programs in Anatomy and in Physiology & Neuroscience provide interactive education and/or research experiences designed to prepare graduates for careers in the biomedical sciences.
   4) Undergraduate education and programs
      a) NCBP faculty direct/deliver foundational “anatomy and physiology” coursework to >1,000 undergraduates/year.
      b) The new B.S. in Neuroscience program (launched Fall, 2017) provides an innovative active learning educational experience designed to prepare graduates for careers in the biomedical sciences. In its first year, the program had >45 majors (25 predicted), a fall to spring retention rate of >90%, and revenue that far-exceeds expenses.

C. Service: NCBP faculty are highly involved in service to their respective disciplines, the community, and within the University. Examples include: manuscript review, editorial board memberships, grant review panels, leadership roles in professional organizations, and membership/leadership roles in NCBP, CoSM, BSOM, and WSU committees.

D. Outreach: Examples include: Horizons in Medicine; STREAMS; Women in Science Giving Circle; Destination Imagination; Program designed to introduce HS students to Neuroengineering Research.
   Of particular note: Interactive lab experiences for high school students – NCBP faculty have created and developed two interactive laboratory experiences for high school students: one in Human Anatomy and Physiology (HAPI lab) and a recently developed laboratory experience in the neurosciences (NeuroLab). Next fall, the HAPI lab will begin its fifth year and has already won regional and national acclaim as an exemplary experiential program designed to excite and educate high school students about the biomedical sciences. We expect that the “NeuroLab” will be similarly successful.

E. Awards/Honors: Six NCBP faculty members received teaching/mentoring awards this past year as well as the 2017 Wright State University Trustees Award for Faculty Excellence.
## Programs/Divisions

<table>
<thead>
<tr>
<th>Name of Division or Program</th>
<th>Director</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroscience Institute</td>
<td>Mark M. Monroe, M.D., Ph.D.</td>
<td>2015-Present</td>
</tr>
</tbody>
</table>

## Fully Affiliated Faculty

<table>
<thead>
<tr>
<th>Name and Academic Position</th>
<th>Clinical Interests</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Bennett, Ph.D., Full Professor and Chair</td>
<td>Control and modulation of cardiac and neuronal function by posttranslational modifications</td>
<td></td>
</tr>
<tr>
<td>Nancy Bigley, Ph.D., Full Professor</td>
<td>Herpes simplex virus, interferons and signaling pathways</td>
<td></td>
</tr>
<tr>
<td>Thomas Brown, Ph.D., Full Professor</td>
<td>Cell death; differentiation and development</td>
<td></td>
</tr>
<tr>
<td>Adrian Corbett, Ph.D., Associate Professor</td>
<td>Excitation-contraction coupling; Sodium channel subtypes; Brain neurogenesis</td>
<td></td>
</tr>
<tr>
<td>Andrew Ednie, Ph.D., Research Associate Professor</td>
<td>Understanding the role of post translational modifications in regulating cardiac and neuronal function</td>
<td></td>
</tr>
<tr>
<td>Sherif Elbasiouny, Ph.D., Assistant Professor</td>
<td>Cellular mechanisms regulating neuronal excitability and motor system output</td>
<td></td>
</tr>
<tr>
<td>Kathrin Engisch, Ph.D., Associate Professor</td>
<td>Neurotransmitter release</td>
<td></td>
</tr>
<tr>
<td>Robert Fyffe, Ph.D., Full Professor</td>
<td>Cellular and synaptic neuroscience</td>
<td></td>
</tr>
<tr>
<td>Dan Halm, Ph.D., Associate Professor</td>
<td>Epithelial physiology; Secretory signal transduction</td>
<td></td>
</tr>
<tr>
<td>J. Ashot Kozak, Ph.D., Associate Professor</td>
<td>Ion transport pathways in T lymphocytes; Calcium signaling</td>
<td></td>
</tr>
<tr>
<td>Name and Academic Position</td>
<td>Clinical Interests</td>
<td>Research Interests</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Barbara Kraszpulska, Ph.D., Associate Professor</td>
<td></td>
<td>Medical and graduate education; Gross Anatomy</td>
</tr>
<tr>
<td>Michal Kraszpulski, Ph.D., Instructor</td>
<td></td>
<td>Graduate education; Neuroscience</td>
</tr>
<tr>
<td>Michael Mattot, Ph.D. Assistant Professor</td>
<td></td>
<td>Medical and graduate education; Physiology</td>
</tr>
<tr>
<td>Debra Mayes, Ph.D., Assistant Professor</td>
<td></td>
<td>Effects of junction proteins on stress, metabolism, and cell proliferation/death in vascular, cancer, and neurodegenerative disease models</td>
</tr>
<tr>
<td>Gary Nieder, Ph.D., Full Professor</td>
<td></td>
<td>Medical and graduate education; Educational technology</td>
</tr>
<tr>
<td>Larry Ream, Ph.D., Associate Professor</td>
<td></td>
<td>Medical and graduate education; Histology</td>
</tr>
<tr>
<td>Mark Rich, M.D., Ph.D., Full Professor</td>
<td>Neurology</td>
<td>Synaptic plasticity; Critical illness myopathy</td>
</tr>
<tr>
<td>Nick Ritucci, Ph.D., Lecturer</td>
<td></td>
<td>Undergraduate and medical education; Physiology</td>
</tr>
<tr>
<td>Bridgett Severt, M.D., Lecturer</td>
<td></td>
<td>Undergraduate education; Anatomy</td>
</tr>
<tr>
<td>Patrick Sonner, Ph.D., Lecturer</td>
<td></td>
<td>Undergraduate and graduate education; Neuroscience</td>
</tr>
<tr>
<td>Keiichiro Susuki, M.D., Ph.D., Assistant Professor</td>
<td></td>
<td>Symptoms in a broad range of diseases including multiple sclerosis, traumatic brain injury, and various forms of neuropathy</td>
</tr>
<tr>
<td>Dawn Wooley, Ph.D., Associate Professor</td>
<td></td>
<td>Virology HIV-1; AIDS; Biosafety; Biodefense</td>
</tr>
<tr>
<td>Christopher Wyatt, Ph.D., Associate Professor</td>
<td></td>
<td>Cellular mechanisms of oxygen sensing</td>
</tr>
</tbody>
</table>
Teaching

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

ANT 2100 Human Anatomy and Physiology I  
ANT 2100L Human Anatomy and Physiology I Lab  
ANT 2120 Human Anatomy and Physiology II  
ANT 2120L Human Anatomy and Physiology II Lab  
ANT 3100 Human Structure and Function I  
ANT 3100L Human Structure and Function I Lab  
ANT 3120 Human Structure and Function II  
ANT 3120L Human Structure and Function II Lab  
ANT 4340 Biological Safety  
ANT 4880 Independent Reading Anatomy  
ANT 4990 Selected Topics in Anatomy  
ANT 5100 Advanced Human Structure and Function I  
ANT 5100L Advanced Human Structure and Function I Lab  
ANT 5120 Advanced Human Structure and Function II  
ANT 5120L Advanced Human Structure and Function II Lab  
BIO 4990 Special Problems in Biology  
M&I 4260 Immunology  
M&I 4310 Virology  
M&I 4750 Pathogenic Mechanisms  
NEU 1000 Introduction to Neuroscience Research  
NEU 3100 How the Nervous System Works  
P&N 4420 Introductory Neurophysiology  
P&N 4880 Independent Reading in Physiology  
P&N 4990 Special Problems in Physiology  
PSY 2910 Drugs and Behavior  
PSY 4940 Animal Behavior Capstone  
SM 1010 Scientific Literacy for the 21st Century

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

ANT 6340 Biological Safety  
ANT 6990 Special Problems in Anatomy  
ANT 7000 Human Anatomy Instruction  
ANT 7010 Selected Topics in Anatomy
ANT 7020 Anatomical Techniques  
ANT 7110 Human Gross Anatomy  
ANT 7150 Advanced Human Embryology  
ANT 7210 Human Microanatomy  
ANT 7310 Human Neurobiology  
ANT 8000 Anatomy Seminar  
ANT 8110 Comprehensive Anatomy  
ANT 8500 Scholarly Project  
ANT 8600 Principles of Biomedical Research  
ANT 8990 Anatomy Research  
M&I 6750 Pathogenic Mechanisms  
M&I 4260/7260 Immunology  
M&I 7310 Virology  
M&I 7770 Gene Therapy  
M&I 7890: Research in Microbiology & Immunology  
M&I 8000 Microbiology and Immunology Seminar  
P&N 6100 Human Physiology  
P&N 6420 Introductory Neurophysiology  
P&N 6500 Gial Cell Physiology  
P&N 6690 Quantitative Aspects of Membrane Transport  
P&N 7010 Selected Topics in Physiology  
P&N 7010 Breakthroughs in Neuroscience and Physiology  
P&N 7220 Ion Channels  
P&N 7750 Neuroscience and Physiology  
P&N 7760 Intercellular Communications  
P&N 7920 Mechanisms of Cell Death  
P&N 8000 Physiology Seminar  
P&N 8080 Neuroscience Seminar  
P&N 8600 Principles in Biomedical Research  
P&N 8990 Physiology Research  
PSY 6940 Animal Behavior Capstone  
PTX 7300 Cellular Pharmacology and Toxicology

**Undergraduate medical education** [medical school]

SMD 510 Human Structure  
SMD 543 Cardiovascular  
SMD 551 Hematology  
SMD 552 Respiratory  
SMD 553 Digestive  
SMD 554 Renal
Continuing medical education [grand rounds, seminars]


Other

Bennett E. The Sweeter Side of the Heart - Reduced Myocyte Complex N-glycosylation Causes Dilated Cardiomyopathy, Department of Physiology and Cell Biology, Davis Heart & Lung Institute, The Ohio State University, Wexner Medical Center, Columbus, OH, 09/22/2017.

Bennett E. What are the role of sugars and their regulation in cardiac function? Department of Biochemistry and Molecular Biology, Wright State University, Dayton, OH, 02/23/2017.

Brown T. NIH Grant Writing: Strategies for Funding Success, Wright State University Faculty Leadership Academy, Dayton, OH, 11/21/2017.

Halm D. That’s BK with me: How signals from the sympathetic nervous system and aldosterone that control extracellular fluid balance also influence colonic transepithelial K secretion contributing to exo-epithelial fluid production, Department of Neuroscience, Cell Biology, and Physiology, Wright State University, 10/20/2017.

Ritucci N. Anatomy & Physiology Presentation, Jacob Coy Middle School, Beavercreek, OH, Jacob Coy Middle School, Beavercreek, OH, 05/05/2017.

Ritucci N. Eat Right Get Fit, Healthy Haven, Wright State University, 04/20/2017.

Severt B. Hands On Anatomy Lab for Pre-College Forensics, Wright State's Pre-College Forensic Science Camp, Wright State University, 07/27/2017.

Severt B. Healthy Vs Diseased Organ Talk, National Science Olympiad Presentation, Wright State University, 05/18/2017.

Severt B. Jacob Coy Middle School A&P Day, Physiology is Phun Club, Jacob Coy Middle School, Dayton, Ohio, 05/05/2017.

Severt B. Modified HAPI Lab: Human Anatomy and Physiology Interactive Lab Program for Science Olympiad Guests, NCBP/CoSM Community Outreach, White Hall, Wright State University, 05/18/2017 - 05/19/2017.

Severt B. Pre-Health Society Anatomy Lab Presentation, WSU's Pre-Health Society, White Hall, Wright State University, 09/08/2017.

Severt B. Sports Medicine Workshop for Miami University, Miami University Sports Medicine, Wright State University, Dayton, OH, 03/30/2017.


Susuki K.  Formation and disruption of functional domains in myelinated axons, NCBP seminar at Wright State University, Dayton, Ohio, 1/6/2017.


Wooley D.  Using directed evolution to select for better viral vectors, Wright State University, Department of Neuroscience, Cell Biology, and Physiology, Dayton, OH, 11/3/2017.

Funded grants [List PI(s), grant title, funding source, amount of award, and dates of award. Please list each grant only once. Identify student & resident authors, i.e., *=student author **=resident/fellow]

Extramural - Active, Dr. Bennett, NSF, Regulated sialylation modulates cardiac excitability and conduction, P.I. Eric Bennett, (10/01/2016 to 04/30/2018) Total $354,569, Direct Current Year $247,702, Indirect Current Year $106,867, Total cost for entire grant period $1,059,259.

Extramural - Active, Dr. Bennett, NSF/USF, Regulated sialylation modulates cardiac excitability and conduction, P.I. Eric S Bennett, (09/01/2017 to 04/30/2018) Total $152,489.33, Direct Current Year $102,566, Indirect Current Year $49,923.33, Total cost for entire grant period $152,499.

Extramural - Active, Dr. Brown, Dayton Collaborative for Childhood Cancer, Gala of Hope Foundation, P.I. Rob Lober, (to) Total $198,870, Direct Current Year $198,870, Indirect Current Year $0, Total cost for entire grant period $198,870.

Extramural - Active, Dr. Brown, Mayfield Education and Research Foundation, Role of repressed tumor suppressor genes in DIPG treatment resistance, P.I. Rob Lober, (to) Total $48,500, Direct Current Year $48,500, Indirect Current Year $0, Total cost for entire grant period $48,500.

Extramural - Active, Dr. Corbett, Soin Neuroscience, Evaluating Drug Combination for Relief of Chronic Pain, P.I. Adrian M. Corbett, (8/1/2017 to 8/1/2020) Total $161,8750, Direct Current Year $218,750, Indirect Current Year $105,000, Total cost for entire grant period $1,618,750, 33% salary for Dr. Elbasiouny.

Extramural - Active, Dr. Elbasiouny, Defense Advanced Research Projects Agency (DARPA), Advanced algorithms for closed-loop prosthesis control, P.I. Sherif Elbasiouny, (03/20/2015 to 03/19/2018) Total $118,799, Direct Current Year $96,085, Indirect Current Year $22,714, Total cost for entire grant period $356,937, 22% salary for Dr. Elbasiouny.

Extramural - Active, Dr. Elbasiouny, United States Air Force, ISAA (contract #: 670480), P.I. Sherif Elbasiouny, (10/05/2016 to 10/04/2017) Total $366,231, Direct Current Year $247,451, Indirect Current Year $118,780, Total cost for entire grant period $1,464,922, 22% salary for Dr. Elbasiouny.

Extramural - Active, Dr. Elbasiouny, National Institute of Neurological Disorders and Stroke, NIH, Mechanisms Underlying Excitability Regulation of Motoneuron Types in ALS, P.I. Sherif Elbasiouny, (02/01/2015 to 01/31/2020) Total $323,750, Direct Current Year $218,750, Indirect Current Year $105,000, Total cost for entire grant period $1,618,750, 33% salary for Dr. Elbasiouny.

Extramural - Active, Dr. Kozak, National Institute of Allergy and Infectious Diseases, TRPM7 and Cellular pH, P.I. Juliusz Ashot Koazk, (12/10/2017 to 11/30/2018), 25% summer salary for Dr. Kozak.

Extramural – Active, Dr. Ladle, National Institute of Neurological Disorders and Stroke, NIH, Synaptic Function Effects of the Nerve Injury, Repair, and Altered Activity, Co-Investigator David Ladle, (03/01/2017-2/28/2018), Direct Current Year $150,761.00

Extramural - Active, Dr. Mark Rich, National Institute of Neurological Disorders and Stroke, NIH, Reduced Motoneuron Excitability in Sepsis, PI Mark Rich, (07/01/2014 to 06/30/2019) Total $1,633,393.00, Direct Current Year $245,612.00, Indirect Current Year $80,096.00

Extramural - Active, Dr. Mark Rich, Muscular Dystrophy Association, Developing Therapy for Myotonia Congenita, PI Mark Rich, (02/01/2016 to 01/31/2019) Total $251,565.00, Direct Current Year $76,220.00, Indirect Current Year $7,622.00

Extramural - Active, Dr. Mark Rich, NIH, Retrograde trophic signaling through acetylcholine receptors at the neuromuscular junction, P.I. Mark Rich, (09/15/2007 to 4/1/2018) Total $1,949,499, Direct Current Year $151,176, Indirect Current Year $72,564.
Publications [List each publication only once; do not list manuscripts in press. List only publications from the year covered by this report.]

Papers in refereed journals


Books, chapters, reviews


Posters


Fayyad TH, and Wyatt CN. Mitochondrial Development is Impaired in Hyperoxic Rats and This May Underpin and Blunting of the Acute Hypoxic Ventilatory Response, Experimental Biology, San Diego, CA 4/22/2017 - 4/26/2017 (Poster).


Halm ST and Halm DR. Survival and growth of C57BL/6J mice lacking the BK channel (KCa1.1): Lower adult body weight occurs together with higher body fat, Experimental Biology 2017, Chicago, Illinois (Poster).


Kraszpulski M and Jones J. The Impact of Paper Color on Students Exam Performance, Human Anatomy and Physiology Society (HAPS), Salt Lake City, UT 5/24/2017 - 5/28/2017 (Poster).


Rakoczy RJ, Pye RL, Rayyad TH, Santin JM, Barr BL and Wyatt CN. High Fat Feeding in Rats Alters Respiratory Parameters by a Mechanism that is Unlikely to be Mediated by Carotid Body Type I Cells, Experimental Biology, San Diego, CA 4/22/2017 - 4/26/2017 (Poster).

Severt B, Kraszpulska B, and Brown TL. Using HAPI Lab: Human Anatomy and Physiology Interactive Lab as a model to increase external use of the cadaver lab., Human Anatomy and Physiology Society Annual Meeting, Salt Lake City, UT 5/24/2017 - 5/28/2017 (Poster).

**Significant presentations and platforms** [e.g., to academic societies, medical schools and national professional societies.]

**Bennett ES.** "The Sweeter Side of the Heart - Reduced Myocyte Complex N-glycosylation Causes Dilated Cardiomyopathy," The Ohio State University College of Medicine, Department of Physiology & Cell Biology, Davis Heart & Lung Research Institute.


**Elbasiouny S.** Neuroengineering approaches in neuroprosthetics and neurodegeneration, The Neural Prosthesis seminar series, Case Western Reserve University, Case Western Reserve University, 11/2/2017 - 11/3/2017.

**Elbasiouny SM.** Neural motor decoders for prosthetic control, The HAPTIX PI meeting, Washington, DC (Platform).

**Halm DR.** That's BK with me: How Transepithelial K+ Secretion Contributes to Exo-epithelial Fluids that Stabilize Our Interactions with the Environment, Lake Cumberland Transport Group, Jamestown, Kentucky (Platform).

**Rich M.** Channelopathy Session, Discovery of a novel current contributing to myotonia, 3/19/2017 - 3/22/2017, Washington DC. (Session Chair)


**Wyatt C.** High fat feeding in rats alters respiratory parameters by a mechanism that is unlikely to be mediated by carotid body type I cells., XXth Meeting at the International Society for Arterial Chemoreception, Baltimore, MD, 7/23/2017 - 7/27/2017.

**Consultantships** [sponsor activity]

T. Brown, to Apoptrol, LLC (Cell Death Inhibitors)

T. Brown, to Courtney Sulentic, Associate Professor, WSU

T. Brown, David Natale, Assistant Professor, UCSD, Reproductive Medicine

T. Brown, to Debra Mayes, Assistant Professor, WSU

T. Brown, to Debra Mayes, Assistant Professor, WSU

T. Brown, to Debra Mayes, Assistant Professor, WSU

T. Brown, to Hausfeld/Global Litigation Solutions, Boston, MA

T. Brown, to Jianhua Shao, Professor, UCSD, Department of Pediatrics

T. Brown, to Kate Excoffon, Associate Professor, WSU

T. Brown, to Keichiro Susuki, Assistant Professor, WSU

T. Brown, to Keichiro Susuki, Assistant Professor, WSU

T. Brown, to Lucille Wrenshall, Professor, WSU

T. Brown, to Rob Lober, Assistant Professor, Dayton Children’s Hospital

T. Brown, to The Restaino Law Firm, P.C., Denver, CO

B. Severt, to John Thomas and Matt Kramer’s Science Olympiad Teams

D. Wooley, to Western Institutional Review Board/IBC Services
Other recognition [e.g. editorships, reviewer awards]

Editorial Board Memberships

American Journal of Physiology (A. Kozak)
American Journal of Physiology, Cell Physiology (T. Brown, D. Halm)
Experimental Neurology (M. Rich)
Journal of Applied Physiology (R. Putnam)
Journal of Cell and Molecular Biology (N. Bigley)
Journal of Cell Signaling (N. Bigley)
Journal of Developmental Biology (T. Brown)
Physiological Reports (R. Putnam)
The Journal of Cell Death (T. Brown)
The Open Stem Cell Journal (T. Brown)

Granting agency study section memberships

Cancer Research Associates (D. Wooley)
National Institutes of Health - NICHD Pregnancy and Neonatology Section (T. Brown), Standing Member
National Institutes of Health/NICHD-Translation Centers for Reproduction Research-ZHD1 DSR-L (50) (T. Brown)
National Institutes of Health- Center for Scientific Review – CSR Anonymous Grant Study (T. Brown)
National Institute of Environmental Health Sciences (NIEHS)-(ePOD) Study Section- ZES1 JAB-D (T. Brown)
National Institutes of Health (C. Wyatt), ADHOC
National Institutes of Health CSR, NDPR Study Section (D. Ladle), ADHOC
National Institutes of Health WPNC Special Emphasis Panel (T. Brown), ADHOC
NIH CSR, NCF Study Section (D. Ladle), ADHOC
Welcome Trust (D. Halm)
Wright State University College of Science and Math (T. Brown)

Offices held in national professional organizations

Ohio Physiological Society (Chapter of American Physiological Society), Treasurer (D. Halm)
Scientific Program Committee, American Biological Safety Association, Chair (D. Wooley)
Summary of Service Activities

**Student advising**

**Undergraduate**
- DuPont, Chris (M. Rich)
- Nguyen, Duc Van Minh (K. Susuki)
- Schmidt, Abigail (P. Sonner)
- Truong, Ngocminh (A. Kozak)
- Shinkle, Robert (N. Bigley)

**Graduate Anatomy**
- Arand, Jessica (B. Kraszpulska)
- Beedy, Kerri (B. Kraszpulska)
- Drouet, Domenica (K. Susuki)
- Evola, Christopher (D. Mayes)
- Hong, Lulu (D. Mayes)
- Imwalle, Joshua (D. Mayes)
- Jones, Rebecca (M. Kraszpulska)
- Miller, John (B. Kraszpulska)
- Mohi, Amr (D. Ladle)
- Newman, Sharle (P. Sonner)
- Richards, Heather (B. Kraszpulska)
- Schurko, Brianna (T. Brown)
- Taylor, Thomas (D. Mayes)

**Graduate Physiology & Neuroscience**
- Arkan, Ethar (A. Corbett)
- Dancy, Matthew (S. Elbasiouny)
- Fayyad, Taraiq (C. Wyatt)
- Kamra, Kajal (C. Wyatt)
- Luu, Charles (A. Kozak)
- Rakozy, Ryan (C. Wyatt)

**Graduate Microbiology & Immunology**
- Adweya, Wilfresha (D. Wooley)
- Alwethaynani, Maher (D. Wooley)
- Alyahya, Khalid (D. Wooley)
- Capan, Colt (D. Wooley)
- Chaudhuri, Urmimala (D. Wooley)
- Elsoobky, Kyrillos (D. Wooley)
- Elwardany Maha (D. Wooley)
- Fallata, Ghait (D. Wooley)
- Hey, Jessica (D. Wooley)
- Capan, Colt D. (N. Bigley)
- Elwardy, Maha A. (N. Bigley)
- Evdokiou, Alexander R. (N. Bigley)
- Roberts, Erin (N. Bigley)
- String, Gabrielle. (N. Bigley)
- Alyahya, Khalid Abdullah R. (N. Bigley)
- Hey, Jessica R. (N. Bigley)
- Alanazi, Yousef N. (N. Bigley)
- Mudadifin, Weded (N. Bigley)
- Alruwaili, Muhammad Falah
- Alradi, Fahad, Mohammad
Graduate Biological Sciences
Airabati, Hend (D. Wooley)
Readler, James (D. Wooley)

Biomedical Sciences
Abdulla, Siham (D. Mayes)
Albers, Renee (T. Brown)
Beesetty, Pavani (A. Kozak)
Dai, Yiyun (D. Ladle)
Draper, Cristiana (D. Mayes)
Mahrous, Amr (S. Elbasiouny)
Parkih, Soham (D. Mayes)
Ragas, Moner (A. Corbett)
Waker, Chris (T. Brown)
Walters, Marie (D. Ladle)
Yermakov, Leoard (K. Engisch)
Ganesan, Ramya (N. Bigley)

College of Engineering and Computer Science
Estepp, Justin (S. Elbasiouny)
Hisham, Mohamed (S. Elbasiouny)
Miller, Morgan (S. Elbasiouny)
Montgomery, Andrew (S. Elbasiouny)

Graduating Students

Anatomy Course Option
Barber, Kathryn, Advisor: L. Ream
Beedy, Kerri, Advisor: L. Ream
Hong, Lulu, Advisor: L. Ream
Imwalle, Joshua, Advisor: L. Ream
Jones, Rebecca, Advisor: L. Ream
Keels, Jordan, Advisor: L. Ream
Myers (Kane), Jessica, Advisor: L. Ream
Newman, Sharle, Advisor: L. Ream
Ross, Daniel, Advisor: L. Ream
Schurko, Brianna, Advisor: L. Ream
Strange, Lauren, Advisor: L. Ream
Yoon, Bryen, Advisor: L. Ream
Anatomy Teacher Education Option
Arnand, Jessica, Advisor: L. Ream
Krumme, Ellen, Advisor: L. Ream
Miller, John, Advisor: L. Ream
Richards, Heather, Advisor: L. Ream
Taylor, Thomas, Advisor: L. Ream

Anatomy – Thesis
Allen, John. Effects of abstraction and assumptions on modeling motoneuron pool output. S. Elbasiouny
Mohi, Amr. Anaalysis of Stretch Reflex Responses in Mice Lacking Munc 18-1 in Propriosptors. D. Ladle

Physiology & Neuroscience
Arkan, Ethar. The Effect of Ageing on the Blood Brain Barrier Permeability and Response to Fluoxetine Enantiomers. A. Corbett
Barrios, Eric A. Cx43 Expression Increases in Response to Increased Temperature Incubation in the Developing Chicken Embryonic Brain. D. Mayes
Dancy, Matthew. *Investigating the role of an SK channel activator on survival and motor function in the SOD1-G93A, ALS mouse model.* S. Elbasiouny

Rakoczy, Ryan. *Measuring the effects of high-fat diet on breathing and oxygen-sensitivity of the carotid body type I cell.* C. Wyatt

Moore, Courtney Elyse. *Upstream regulators of VRAC activation in human 1321N1 astrocytoma cells.* J. Olson

Ratliff-Rang, Christina Anette. *The Hypercapnic Ventilatory Response and Behavior in Ca2+-Activated K+ (BK) Channel Knock Out Mice and T-Cell Death Associated Gene 8 (TDAG8) Receptor Knock Out Mice.* C. Wyatt

Fayyad, Tariq Hasan. *Is Mitochondrial Development Impaired in Hyperoxic Rats and does this Underpin the Blunting of the Acute Hypoxic Ventilatory Response?* C. Wyatt

Watanasriyakul, Withayapon. *Social Buffering by Unfamiliar Adult Males in Preweaning Guinea Pigs (Cavia Porcellus). The Effects on HPA Activity and Fos-Induction in the Medical Prefrontal Cortex.* M. Hennessy

**Microbiology & Immunology – Thesis**

Alamri, Badrieah Mohammed. *Effects of Myrrh on HSV-1 Using Plaque Assay.* N. Bigley

Alyahya, Khalid Abdullah. *Effect of Exposure of Raw264.7 Macrophages to Salmonella typhimurium Components on Cell Viability, Cytoskeleton Re-arrangement and Cytokine Secretion.* N. Bigley

Capan, Colt Dylan. *Effects of SOCS1 and SOCSA3 Peptide Mimetics on Macrophage Phagocytosis of Malignant Cells.* N. Bigley

Elwardany, Maha A. *The Impact of SCOS1 and SCOS3 Peptide Mimetics on Rho and Cdc42 Proteins Expression, F-actin Cytoskeleton Rearrangements and Cytokines Production of Uninfected and HSV-1 Infected M1 and M2 RAW 264.7 Murine Macrophages.* N. Bigley

Evdokiou, Alexander. *Vitamin D3 and Suppressor of Cytokine Signaling Proteins Reduces Pro-Inflammatory Cytokines in an Alzheimer’s Disease Like-Mldel Consisting of Microglial and Neuronal Co-Cultures.* N. Bigley

Roberts, Erin. Cytokine expression, cytoskeleton organization and viability of SIM-A9 microglia exposed to Staphylococcus aureus-derived lipoteichoic acid and peptidoglycan. N. Bigley

String, Gabrielle. *The Effect of Gram-Positive Staphylococcus aureus Cell Wall Components Lipoteichoic Acid and Pepidoglycan on Cytokine production, Cytoskeletal Arrangement, and Cell Viability on RAW 264.7 Murine Macrophages.* N. Bigley

**Committee membership/officer** [indicate if committee chair]

**Wright State University Boonshoft School of Medicine** [or college name]

Admissions Committee (G. Nieder, Full Member, B. Kraszpulska)
Basic Science Track Scholarly Projects Committee (E. Bennett)
Balance, Control, and Regulation Steering Committee (M. Matott)
Biennium One Subcommittee (G. Nieder, N. Ritucci)
Faculty Curriculum Committee Assessment & Evaluation Subcommittee (T. Brown)
Department of OB/Gyn Faculty Actions Committee (T. Brown)
Digestive Course Steering Committee (N. Ritucci, Chair)
Executive Committee (E. Bennett)
Faculty Curriculum Committee Assessment and Evaluation Subcommittee (B. Kraszpulska)
Faculty Curriculum Committee, Co-Chair (E. Bennett)
Faculty Promotions and Advancement Committee (G. Nieder, M. Rich)
Human Architecture Steering Committee (G. Nieder)
LCME Continuous Quality Improvement Steering Committee (E. Bennett)
Task Force for Curriculum Reform Committee (M. Rich)
Liaison Committee on Medical Education Site Visit (S. Elbasiouny, E. Bennett)
Origins II Steering Committee (E. Bennett, M. Matott, C. Wyatt, K. Engisch)
Peer Instruction Review Committee (M. Matott)
Research Committee (T. Brown)
Staying Alive Steering Committee (M. Matott)
Student Appeals Committee (G. Nieder)
Wright Curriculum Histology Working Group (G. Nieder)
Wright Curriculum Remediation/Repeat Task Force (G. Nieder)
Wright Curriculum TBL Review Committee (M. Matott, G. Nieder)
Wright Q Review Committee (M. Matott)

Biomedical Sciences Committee Memberships
Academic Policies Committee (D. Ladle, K. Engisch, E. Bennett)
Admission Committee (K. Susuki)
Biomedical Sciences Ph.D. Program Curriculum Committee (T. Brown)
Member of the BMS program admission committee (S. Elbasiouny)
Nominating Committee (K. Susuki, A. Kozak)

Neuroscience, Cell Biology and Physiology Committee Memberships
Advisory Committee (A. Corbett, Chair, B. Kraszpulski, D. Ladle, G. Nieder, P Sonner)
Annual Evaluation and Assessment Subcommittee (L Ream, Chair, B. Kraszpulski, N. Bigley, G. Nieder)
Faculty Search Committee I, Chair (T. Brown)
Faculty Search Committee II, Chair (T. Brown)
Master’s Program Revision Committee (M. Kraszpulski)
Member of the advisory board committee for developing an undergraduate program in NCBP (S. Elbasiouny)
Master’s Program Ad Hoc Committee (B. Severt)
Master’s Program Steering Committee (M. Matott, G. Nieder)
Promotion and Tenure Committee (N. Bigley, T. Brown, A. Corbett, D. Halm, B. Kraszpulski, A. Kozak, D. Ladle)

Wright State University
Academic Integrity Hearing Panel (G. Nieder)
Academic Reorganization Committee (N. Bigley)
Parking Appeals Committee (D. Wooley, Chair)
Master’s Program in Neuroengineering at the College of Engineering and Computer Science (S. Elbasiouny, Chair)
Commencement Committee (B. Severt)
Faculty Senate (B. Severt)
Faculty Senator Representing COSM, 2015-present (D. Wooley)
Graduate Council (K. Engisch)
Institutional Animal Care and Use Committee (A. Corbett, Chair, D. Ladle)
Institutional Biosafety Committee (D. Ladle)
Let’s Talk Forum on Wright State Research Institute (E. Bennett)
Quadrennial Review Committee (P. Sonner)
Radiation Safety Committee: Vice Chair (A. Corbett)
Research and Collaboration & Cell Signaling Data Club and Seminar Series (D. Mayes)
Student Conduct Hearing Panel (N. Bigley)
Undergraduate Neuroscience Advisory Board (D. Mayes)
University Curriculum Committee (P. Sonner)
University’s Student Conduct Panel (B. Severt)

National
American Biological Safety Association Scientific Program Committee (D. Wooley)
American Society for Neurochemistry (ASN) YIEE Award Committee (D. Mayes)
NIH Recombinant DNA Advisory Committee (D. Wooley)
Other
Graduate advisor of BIE students in the neuroengineering focus area - BIE Department (S. Elbasiouny)
Human Anatomy and Physiology Society Committee - Cadaver Usage (B. Kraszpulskas)
Human Anatomy and Physiology Society’s Cadaver Use Committee (B. Severt)
Journal of Developmental Biology - Reviewer - International Travel Grant Awards (T. Brown)
BME Program Committee - BIE Department (S. Elbasiouny)
Board of Scientific Counselors for the Centers for Disease Control and Prevention (D. Wooley)
Medical and Biological Systems focus area admission committee in the PhD in Engineering program (S. Elbasiouny)
NIH Recombinant DNA Advisory Committee (2012-2017) (D. Wooley)
XX ISAC Conference, Baltimore, MD, Member of Organizing and Scientific Committee (C. Wyatt)
Patient Care Summary

Mark M. Rich, M.D., Ph.D. – 180 ambulatory visits is 2017

Honors and awards [Faculty or staff]

The Academy of Medicine’s Outstanding Junior Faculty Award, Boonshoft School of Medicine (S. Elbasiouny)
Innovation in Medical Education Boonshoft School of Medicine Class of 2017 (B. Kraszpulski)
Excellence in Teaching Award by the National Society of Leadership and Success (M. Kraszpulski)
Women in Science Giving Circle Faculty Award (D. Mayes)
Wright State University Trustees Award for Faculty Excellence (M. Rich)
Boonshoft School of Medicine Faculty Mentor Award (M. Rich)

Hosted events [CME, etc.]

June 9, 2017 - Ohio Miami Valley Society for Neuroscience, Dr. Teepu Siddique, Profess of Neurology at Northwestern University Feinberg School of Medicine

Neuroscience, Cell Biology and Physiology Seminars


January 20, 2017 – Bradley K. Taylor, Ph.D., University of Kentucky College of Medicine, Lexington, KY, Pharmacology for neuropathic pain in a mouse model of multiple sclerosis.

January 26, 2017 – James Olson, Ph.D., Wright State University, Dayton, OH, The good and bad of cell volume regulation.

February 3, 2017 – Kathrin Engisch, Ph.D., Wright State University, Dayton, OH, The rich get richer: homeostatic plasticity in cortical cultures.

February 24, 2017 – Nancy Bigley, Ph.D., Wright State University, Dayton, OH, M1 and M2 polarized myeloid cells in regulation of inflammation.

March 31, 2017 – Michal Kraszpulski, Ph.D., Wright State University, Dayton, OH, Observing animal behavior in Poland – WSU Ambassador Program.
April 7, 2017 – Vera Moiseenkova-Bell, Ph.D., Case Western University, Cleveland, OH, Molecular insight into the structure and function of TRPV channels.

October 6, 2017 – John Terry, M.D., Wright State University, Dayton, OH, Identifying large vessel exclusive strokes in the field.

October 13, 2017 – Adrian Corbett, Ph.D., Wright State University, Dayton, OH, A drug combination for the treatment of neurodegeneration.

October 20, 2017 – Dan Halm, Ph.D., Wright State University, Dayton, OH, That’s BK with me: How signals from the sympathetic nervous system and aldosterone that control extracellular fluid balance also influence colonic transepithelial K+ secretion contributing to exo-epithelial fluid production.

October 27, 2017 – Mark Rich, M.D., Ph.D., Wright State University, Dayton, OH, Dysregulation of muscle excitability in myotonia congenital.

November 3, 2017 – Dawn Wooley, Ph.D., Wright State University, Dayton, OH, Using directed evolution to select for better viral vectors.

Other information

Outreach programs
HAPI Lab (T. Brown, B. Kraszpulska, B. Severt)
Horizons in Medicine (G. Nieder)
Neuro Lab (T. Brown, C. Wyatt, K. Engisch, P. Sonner)
STEMM: Exploring Human Anatomy an Interactive Anatomy Lab Experience (L. Ream, B. Kraszpulska, B. Severt)
STREAMS. This program is funded by the National Institutes of Health to encourage members of under-represented minority groups and students with disabilities to choose careers in cardiovascular-related research. (R. Putnam and S. Elbasiouny, P. Sonner mentored students and R. Putnam is a program admissions committee member.)
Women in Science Giving Circle (A. Corbett, K. Engisch, B. Kraszpulska, B. Severt)
Destination Imagination (D. Mayes)
Special Interest Program – Exposing High School to Neuroengineering Research (S. Elbasiouny)

Student clubs and activities
Operation Smile Wright State University – WSU chapter of Operation Smile which works to provide life-saving cleft palate and cleft lip surgeries to children in need throughout the world. (N. Ritucci)
Ohio Summer Institute (N. Ritucci, Co-Director)
College of Science and Math Anatomy Club, (B. Kraszpulska, Advisor)
Boonshoft School of Medicine Gastronomy Club (B. Kraszpulska, Advisor)