



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

# 1

## 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)
  - 2) **Core Facilities** utilized by >30 faculty from 3+ colleges – a. Microscopy, b. “BioBank”, c. Small animal physiology
  - 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.

## 2 Programs/Divisions

Name of Division or Program	Director	Dates
Neuroscience Institute	Mark M. Monroe, M.D., Ph.D.	2015-Present

## 3 Fully Affiliated Faculty

Name and Academic Position	Clinical Interests	Research Interests
Eric Bennett, Ph.D., Full Professor and Chair		Control and modulation of cardiac and neuronal function by posttranslational modifications
Nancy Bigley, Ph.D., Full Professor		Herpes simplex virus, interferons and signaling pathways
Thomas Brown, Ph.D., Full Professor		Cell death; differentiation and development
Adrian Corbett, Ph.D., Associate Professor		Excitation-contraction coupling; Sodium channel subtypes; Brain neurogenesis
Andrew Ednie, Ph.D., Research Associate Professor		Understanding the role of post translational modifications in regulating cardiac and neuronal function
Sherif Elbasiouny, Ph.D., Assistant Professor		Cellular mechanisms regulating neuronal excitability and motor system output
Kathrin Engisch, Ph.D., Associate Professor		Neurotransmitter release
Robert Fyffe, Ph.D., Full Professor		Cellular and synaptic neuroscience
Dan Halm, Ph.D., Associate Professor		Epithelial physiology; Secretory signal transduction
J. Ashot Kozak, Ph.D., Associate Professor		Ion transport pathways in T lymphocytes; Calcium signaling

<b>Name and Academic Position</b>	<b>Clinical Interests</b>	<b>Research Interests</b>
Barbara Kraszpulska, Ph.D., Associate Professor		Medical and graduate education; Gross Anatomy
Michal Kraszpulski, Ph.D., Instructor		Graduate education; Neuroscience
Michael Mattot, Ph.D. Assistant Professor		Medical and graduate education; Physiology
Debra Mayes, Ph.D., Assistant Professor		Effects of junction proteins on stress, metabolism, and cell proliferation/death in vascular, cancer, and neurodegenerative disease models
Gary Nieder, Ph.D., Full Professor		Medical and graduate education; Educational technology
Larry Ream, Ph.D., Associate Professor		Medical and graduate education; Histology
Mark Rich, M.D., Ph.D., Full Professor	Neurology	Synaptic plasticity; Critical illness myopathy
Nick Ritucci, Ph.D., Lecturer		Undergraduate and medical education; Physiology
Bridgett Severt, M.D., Lecturer		Undergraduate education; Anatomy
Patrick Sonner, Ph.D., Lecturer		Undergraduate and graduate education; Neuroscience
Keiichiro Susuki, M.D., Ph.D., Assistant Professor		Symptoms in a broad range of diseases including multiple sclerosis, traumatic brain injury, and various forms of neuropathy
Dawn Wooley, Ph.D., Associate Professor		Virology HIV-1; AIDS; Biosafety; Biodefense
Christopher Wyatt, Ph.D., Associate Professor		Cellular mechanisms of oxygen sensing

# 4 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 21<sup>st</sup> 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 Glial 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

SMD 560 Medical Neuroscience

SMD 561 Endocrine

SMD 563 Musculoskeletal/Integument

SMD 572 Cells, Tissue and Organ Systems

SMD 580 Staying Alive

WQC8102 Origins 2

Wright Q small group facilitators

MED 800 Student Initiated Elective (Involved producing multimedia and assembling a web-based tutorial on heart sound)

### **Continuing medical education** [grand rounds, seminars]

**Rich M.** Fatigue of the motor unit, Cure Spinal Muscular Atrophy Annual Meeting, Orlando FL, 6/28/2017 - 7/1/2017.

**Rich M.** Disrupted nerve-muscle trophic signaling in myasthenia gravis, International Conference on Myasthenia Gravis and related disorders, New York, NY, 5/15/2017 - 5/17/2017.

### **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, Beaver creek, OH, Jacob Coy Middle School, Beaver creek, 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.

**Severt B.** STEMM: Exploring Human Anatomy, Exploring STEMM, Wright State University, 06/27/2017 - 07/07/2017.

**Sonner, P.** Grassroots Advocacy, Ohio Miami Valley Chapter of the Society for Neuroscience Fourteenth Annual Neuroscience Day, Wright State University, 6/9/2017.

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

**Wooley D.** Evaluating Risks When Working with Biohazardous Materials, Facilitating Safe Science: Practical Approaches for IBCs, St. Augustine, FL, 6/4/2017 - 6/7/2017.

**Wooley D.** Implementation of the New Lentiviral Vector Medical Guidelines, Preventing and Treating Biological Exposures: An Occupational Health Colloquium, St. Augustine, FL, 7/7/2017 - 7/9/2017.

**Wooley D.** Molecular Testing for Viral Vector Sequences in Animal Specimens from Biocontainment, Facilitating Safe Science: Practical Approaches for IBCs, St. Augustine, FL, 6/4/2017 - 6/7/2017.

**Wooley D.** Non-retroviral Vectors and Occupational Health Considerations, Preventing and Treating Biological Exposures: An Occupational Health Colloquium, St. Augustine, FL, 7/7/2017 - 7/9/2017.

**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.

**Wooley D.** Using Viral Vectors as Gene Delivery Vehicles, Preventing and Treating Biological Exposures: An Occupational Health Colloquium, St. Augustine, FL, 7/7/2017 - 7/9/2017.



# 5

## Scholarly Activity

**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 \$354569, Direct Current Year \$247702, Indirect Current Year \$106867, Total cost for entire grant period \$1059259.

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 \$15248.93, Direct Current Year \$10256, Indirect Current Year \$4992.93, Total cost for entire grant period \$15249.

Extramural - Active, Dr. Brown, Dayton Collaborative for Childhood Cancer, Gala of Hope Foundation, P.I. Rob Lober, ( to ) Total \$198870, Direct Current Year \$198870, Indirect Current Year \$0, Total cost for entire grant period \$198870.

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 \$48500, Direct Current Year \$48500, Indirect Current Year \$0, Total cost for entire grant period \$48500.

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 \$7500, Direct Current Year \$5000, Indirect Current Year \$2500, Total cost for entire grant period \$7500.

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 \$118799, Direct Current Year \$96085, Indirect Current Year \$22714, Total cost for entire grant period \$356397, 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 \$36623, Direct Current Year \$24745, Indirect Current Year \$11878, Total cost for entire grant period \$146492, 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 \$323750, Direct Current Year \$218750, Indirect Current Year \$105000, Total cost for entire grant period \$1618750, 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.

Internal - Active, Dr. Brown, PHP/WSU Neuroscience Institute Translational Human Stroke Research, Biomarker Analysis of Neuroinflammation and Impending Stroke in Humans, P.I. , ( to ).

Internal - Active, Dr. Brown, WSU Obstetrics and Gynecology Translational Research Initiative, Molecular Genetic Analysis Predictive and Preeclampsia and Its Severity in Human Pregnancy, P.I. , ( to ) Total \$30000, Direct Current Year \$30000.

Internal - Active, Dr. Corbett, ASK Program, Modulating Stem Cell Proliferation in SVZ of male and female older rats with drugs, P.I. Adrian Corbett, (1/1/2018 to 4/24/2018) Total \$2000, Direct Current Year \$2000, Indirect Current Year \$0, Total cost for entire grant period \$2000.

Internal - Active, Dr. Mayes, Women in Science Giving Circle, Blood Brain Barrier Permeability - Gender Disparities and Aging, P.I. Debra Mayes, (03/24/2017 to 03/24/2018) Total \$5000, Direct Current Year \$5000, Indirect Current Year \$0, Total cost for entire grant period \$5000.

**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

Albers RE, Waker CA, Keoni C, Kaufman MR, Bottomley MA, Min S, Natale DR and **Brown TL**. Gestational Differences in Murine Placenta: Glycolytic Metabolism and Pregnancy Parameters. *Theriogenology*, 107, 115-126, 2017.

Albers RE, Selesniemi K, Natale DRC, and **Brown TL**. TGF- $\beta$  induces Smad2 Phosphorylation, ARE Induction, and Trophoblast Differentiation. *International Journal of Stem Cells*. (In press)

Allen JM and **Elbasiouny SM**. The effects of model composition design choices on high-fidelity simulations of motoneuron recruitment and firing behaviors. *J Neural Eng*. 2018 Jun;15(3):036024. doi: 10.1088/1741-2552/aa9db5. Epub 2017 Nov 28.

Arnold WD, Kline D, Sanderson A, Hawash AA, Bartlett A, Novak KR, **Rich MM**, Kissel JT. Open-label trial of ranolazine for the treatment of myotonia congenital. *Neurology*, 89, 710-713, 2017.

Bavis RW, Li KY, DeAngelis KJ, March RJ, Wallace JA, Logan S, and **Putnam RW**. Ventilatory and chemoreceptor responses to hypercapnia in neonatal rats chronically exposed to moderate hyperoxia. *Respir Physiol Neurobiol*. 2017 Mar;237:22-34. doi: 10.1016/j.resp.2016.12.008.

Clafflin DI, Schmidt KD, Vallandingham ZD, **Kraszpulski M**, Hennessy MB. Influence of postnatal glucocorticoids on hippocampal-dependent learning varies with elevation patterns and administration methods. *Neurobiol Learn Mem*, 143, 77-87, 2017.

Du D, Yang H, Ednie AR, and **Bennett ES**. In-silico Modeling of the Functional Role of Reduced Sialylation in Sodium and Potassium Channel Gating of Mouse Ventricular Myocytes. 2017 Feb 6. doi:10.1109/JBHI.2017.2664579. [Epub ahead of print] PubMed PMID: 28182562.

Dukkipati SS, Chihi A, Wang Y, and **Elbasiouny SM**. Experimental Design and Data Analysis Issues Contribute to Inconsistent Results of C-Bouton Changes in Amyotrophic Lateral Sclerosis. *eNeuro*. 2017 Jan 18;4(1). pii: ENEURO.0281-16.2016. doi: 10.1523/ENEURO.0281-16.2016.

**Elbasiouny SM**. Cross-Disciplinary Medical Advances with Neuroengineering: Challenges Spur Development of Unique Rehabilitative and Therapeutic Interventions. *IEEE Pulse*, 8(5), 4-7, 2017.

Floyd TL, Dai Y, and **Ladle DR**. Characterization of calbindin D28k expressing interneurons in the ventral horn of the mouse spinal cord. *Dev Dyn*. 2018 Jan;247(1):185-193. doi: 10.1002/dvdy.24601. Epub 2017 Nov 15.

Ghaffari BV, Kouhnavard M, and **Elbasiouny SM**. Mixed-mode oscillations in pyramidal neurons under antiepileptic drug conditions. *PLoS One*, 12, e0178244, 6.

Griggs RB, Yermakov LM, and **Susuki K**. Formation and disruption of functional domains in myelinated CNS axons. *Neurosci Res*, 116, 77-87, 2017.

Hawash AA, Voss AA, and **Rich MM**. Inhibiting persistent inward sodium currents prevents myotonia. *Annals of Neurology*, 82, 385-395, 2017.

Khedraki A, Reed EJ, Romer SH, Wang Q, Romine W, **Rich MM**, Talmadge RJ, Voss AA. Depressed Synaptic Transmission and Reduced Vesicle Release Sites in Huntington's Disease Neuromuscular Junctions. *Journal of Neuroscience*, 37, 8077-8091, 2017.

**Kozak JA** and Rychkov G. Electrophysiological methods for recording CRAC and TRPV5/6 channels. Calcium entry channels in non-excitabile cells, CRC Press, 2017.

Kursan S, McMillen TS, Beesetty P, Dias-Junior E, Almutairi MM, Sajib AA, **Kozak JA**, Aguilar-Bryan L, Di Fulvio M. The neuronal K+Cl- co-transporter 2 (Slc12a5) modulates insulin secretion. *Scientific Reports*, 7, 1732, 2017.

Mahrous AA and **Elbasiouny SM**. SK channel inhibition mediates the initiation and amplitude modulation of synchronized burst firing in the spinal cord. *Journal of Neurophysiology*, 118(1), 161-175, 2017.

Mahrous AA and **Elbasiouny SM**. Modulation of SK channels regulates locomotor alternating bursting activity in the functionally-mature spinal cord. *Channels (Austin)*. 2018 Jan 1;12(1):9-14. doi: 10.1080/19336950.2017.1389825. Epub 2017 Nov 17

Nardelli P, Powers R, Cope TC, and **Rich MM**. Increasing motor neuron excitability to treat weakness in sepsis. *Annals of Neurology*, 82(6), 961-971, 2017.

Otani Y, Yermakov LM, Dupree JL, and **Susuki K**. Chronic peripheral nerve compression disrupts paranodal axoglial junctions. *Muscle Nerve*, 55, 544-554, 2017.

O'Toole SM, Ferrer MM, Mekonnen J, Zhang H, Shima Y, **Ladle DR**, and Nelson SB. Dicer maintains the identity and function of proprioceptive sensory neurons. *J. Neurophysiology*, 117, 1057-1069, 2017.

Quintero MC, **Putnam RW** and Cordovez JM. Theoretical perspectives on central chemosensitivity: CO<sub>2</sub>/H<sup>+</sup>-sensitive neurons in the locus coeruleus. *PLoS Comput Biol*. 2017 Dec 21;13(12):e1005853. doi: 10.1371/journal.pcbi.1005853.

Rakoczy RJ, **Wyatt CN**. Acute oxygen sensing by the carotid body: a rattlebag of molecular mechanisms. *J Physiol*. 2017 Dec 7. doi: 10.1113/JP274351. [Epub ahead of print].

Ragas M, Nagarajan D, **Corbett AM**. Refining forelimb asymmetry analysis: Correlation with Montoya staircase contralateral function post-stroke. *Journal of Neuroscience Methods*, 290, 52-56, 2017.

Rudnick ND, Griffey CJ, Guarnieri P, Gerbino V, Wang X, Piersaint JA, Tapia JC, **Rich MM**, Maniatis T. Distinct roles for moton neuron autophagy early and late in the SOD1G93A mouse model of ALS. *PNAS*, 114, E8294-E8303, 2017.

**Severt BR**, **Kraszpuska B**, and **Brown TL**. Establishment of an Interactive Community Outreach Program in Human Anatomy and Physiology: The HAPI Lab Model. *HAPS Education*, 17, 101-105, 2017.

Sonner MJ, Walters MC, **Ladle DR**. Analysis of Proprioceptive Sensory Innervation of the Mouse Soleus: A Whole-Mount Muscle Approach. *PLoS One*, 12, e0170751, 2017.

Vincent JA, Gabriel HM, Deardorff AS, Nardelli P, **Fyffe REW**, Burkholder T, Cope TC. Muscle proprioceptors in adult rat: mechanosensory signaling and synapse distribution in spinal cord. *J Neurophysiol*. 2017 Nov 1;118(5):2687-2701. doi: 10.1152/jn.00497.2017.

Vysotskaya Z, Chidipi B, Rodgers JL, Tang X, Samal E, Kolliputi N, Mohapatra S, **Bennett ES**, and Panguluri SK. Elevated potassium outward currents in hyperoxia treated atrial cardiomyocytes. *J. Cell Physiol*. 2017: epub: doi: 10.1002/jcp.26263.

Waker CA, Albers RE, Pye RL, Doliboa SR, **Wyatt CN**, **Brown TB**, and **Mayes DA**. AMPK knockdown in placental Labyrinthine progenitor cells results in restriction of critical energy resources and altered differentiation. *Stem Cell Dev*, 26 (11), 808-817, 2017.

Wang X and **Rich MM**. Homeostatic synaptic plasticity at the neuromuscular junction in myasthenia gravis. *Ann N Y Acad Sci*, epub ahead of print, epub, 2017.

**Wooley DP** and Vasanth, S. Duplex quantitative polymerase chain reaction assay for detection of adenoviral and lentiviral vectors. *Applied Biosafety*, 22, 104-113, 2017.

**Wooley DP**, Sharma P, Weinstein JR, Narayan PK, Schaffer DV, and Excoffon KJ. A directed evolution approach to select for novel Adeno-associated virus capsids on an HIV-1 producer T cell line. *J. Virol. Methods*, 250, 47-54, 2017.

## Books, chapters, reviews

**Wooley DP** and Byers KB (Eds.), Biological Safety: Principles and Practices (5th ed., pp. 269-283). In Molecular Agents, Washington, DC: ASM Press, 2017.

**Wooley DP** and Fleming DO (Eds.), Biological Safety: Principles and Practices (5th ed., pp. 95-104). In Risk Assessment of Biological Hazards, Washington, DC: ASM Press, 2017.

## Posters

Alsabri SG, Mari W, Poon CS, Sunar U, **Mayes DA** and Simman R. Extracellular microvesicles as a potential novel therapeutic approach to accelerate wound healing, Wright State University Central Research Forum, Dayton, OH 10/5/2017 - 10/5/2017 (Poster).

Alsabri SG, Mari W, Poon CS, Sunar U, **Mayes DA** and Simman R. Usage of Loaded Extracellular Macrovesicles as a Novel and Promising Therapeutic Tool in Wound Healing Area: An in vitro model, Wright State University Central Research Forum, Dayton, OH 10/5/2017 - 10/5/2017 (Poster).

Alsabri SG, Smida FA, Mari W, Poon CS, Sunar U, **Mayes DA** and Simman R. Extracellular Microvesicles as a Potential Novel Therapeutic Approach to Accelerate Wound Healing: An in Vitro Model., Wright State Graduate Research Symposium, Dayton, OH 4/13/2017 - 4/13/2017 (Poster).

Beesetty P, Kaitsuka T, Matsushita M, **Kozak JA**. Blastogenesis, proliferation and store-operated calcium entry in splenocytes of TRPM7 kinase-dead mutant mice, Calcium Signaling Gordon Research Conference, Lucca, Italy 6/18/2017 - 6/23/2017 (Poster).

Beesetty P, Wiczerzak KB, Zhelay T, Kaitsuka T, Matsushita M, **Kozak JA**. Regulation of TRPM7 by cytosolic Mg<sup>2+</sup> and pH: insights from VSP expression, Biophysical Society 61st Annual Meeting, New Orleans, LA (Poster).

Dukkipati S, Garrett TL, **Elbasiouny SM**. Soma size plasticity of spinal motoneurons in ALS, 2017 Society for Neuroscience conference, Washington, DC (Poster).

**Eddie AR**, Deng W, Yip K-P, **Bennett ES**. Prevention of Complex and Hybrid N-Glycosylation Causes Dilated Cardiomyopathy. American Heart Association, Scientific Sessions, Anaheim, CA (Poster).

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).

Griggs RB, Yermakov LM, Drouet DE, Waker CA, **Mayes DA**, **Susuki K**. Methylglyoxal disrupts excitable axonal domains, Wright State University Boonshoft School of Medicine Central Research Forum, Dayton, OH 10/5/2017 - 10/5/2017 (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).

Kamra K, Rakoczy RJ, Barr BL and **Wyatt CN**. Can somatostatin analogues attenuate hypertension associated with chronic intermittent hypoxia? Ohio Physiological Society Meeting, NEOMED, Rootstown, OH 10/27/2017 - 10/27/2017 (Poster).

**Kraszpuska B**. Teaching strategies and student performance in a Human Gross Anatomy graduate course, Annual Conference of Human Anatomy and Physiology Society, Salt Lake City, UT 5/24/2017 5/28/2017 (Poster).

**Kraszpuski 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).

**Kraszpuski M**. Observing Animal Behavior in Poland - Wright State University Ambassador Program, Animal Behavior Conference, Bloomington, IN 4/7/2017 - 4/8/2017 (Poster).

Mahrous, AA and **Elbasiouny SM**. Integration of sensory and motor inputs in spinal motoneurons, 2017 Society for Neuroscience conference, Washington, DC (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**, **Kraszpuska 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).

Walters MC, Sonner MJ, **Ladle DR**. Calcium regulation of dorsal root ganglion neurons after peripheral nerve injury, Annual Meeting of the Society for Neuroscience, Washington, D.C. 11/11/2017 - 11/15/2017 (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**. Computer simulations identify a novel drug target for ALS treatment, The Biomedical Sciences seminar series, Ohio University, Ohio University, 5/27/2017 - 5/28/2017.

**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<sup>+</sup> 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)

**Rich M**. Disrupted nerve-muscle trophic signaling in myasthenia gravis, International Conference on Myasthenia Gravis and related disorders, New York, New York, 5/15/2017 - 5/17/2017.

**Rich M**. Fatigue of the motor unit, Cure Spinal Muscular Atrophy Annual Meeting, Orlando FL, 6/28/2017 - 7/1/2017.

Severt BR, Wingert C, Stevens K, and Mattinson K. Using HAPI Lab: Human Anatomy and Physiology Interactive Lab as a Model to Meet the Requests for External Use of the Cadaver Lab, HAPS 31st Annual Conference, Salt Lake City, UT 05/27/2017 - 05/27/2017 (Platform).

**Wyatt C**. Acute oxygen-sensing by the carotid body: a rattlebag of molecular mechanism, XXth ISAC Meeting, Baltimore, MD, 7/23/2017 - 7/27/2017.

**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 Litgation 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 WPNRC 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**)

# 6

## 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. Kraszpuska)  
Beedy, Kerri (B. Kraszpuska)  
Drouet, Domenica (K. Susuki)  
Evola, Christopher (D. Mayes)  
Hong, Lulu (D. Mayes)  
Imwalle, Joshua (D. Mayes)  
Jones, Rebecca (M. Kraszpuski)  
Miller, John (B. Kraszpuska)  
Mohi, Amr (D. Ladle)  
Newman, Sharle (P. Sonner)  
Richards, Heather (B. Kraszpuska)  
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)  
Elsobky, Kyrillos (D. Wooley)  
Elwardany Maha (D. Wooley)  
Fallata, Ghaiith (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)  
Mudayfin, Weded (N. Bigley)  
Alruwaili, Muhammad Falah  
Alradi, Fahad, Mohammad

### **Graduate Biological Sciences**

Alrabati, Hend (D. Wooley)  
Reader, 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. *Anaoyis of Stretch Reflex Responses in Mice Lacking Munc 18-1 in Propriosptors.* **D. Ladle**

#### **Physiology & Neuroscience**

Arkan, Ethar. *The Effect of Agining 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 Ca<sup>2+</sup>Activated K<sup>+</sup> (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 Prewearing Guinea Pigs (Cavia Pocellus). 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 SOCS3 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-Mdel 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. Kraszpuska**)  
Balance, Control, and Regulation Steering Committee (**M. Matott**)  
Basic Science Track Scholarly Projects Committee (**E. Bennett**)  
Beginning to End Steering Committee (**T. Brown, 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. Kraszpuska**)  
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. Kraszpuska, D. Ladle, G. Nieder, P. Sonner**)  
Annual Evaluation and Assessment Subcommittee (**L. Ream, Chair, B. Kraszpuska, N. Bigley, G. Nieder**)  
Faculty Search Committee I, Chair (**T. Brown**)  
Faculty Search Committee II, Chair (**T. Brown**)  
Master's Program Revision Committee (**M. Kraszpuski**)  
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. Kraszpuska, 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. Kraszpulska**)

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**)

# 7

## Patient Care Summary

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

# 8

## 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. Kraszpuska**)

Excellence in Teaching Award by the National Society of Leadership and Success (**M. Kraszpuski**)

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**)

# 9

## Hosted events [CME, etc.]

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

### **Neuroscience, Cell Biology and Physiology Seminars**

January 13, 2017 – Sheif Elbasiouny, Ph.D., P.E., P.Eng., Wright State University, Dayton, OH, Computer simulations identify a novel drug target for amyotrophic lateral sclerosis treatment.

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 Kraszpuski, 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<sup>+</sup> 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.

# 10

## 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**)