



# **Department of Neuroscience, Cell Biology, and Physiology**

## **Annual Report:**

January 1, 2021 – December 31, 2021

Eric Bennett, Ph.D.  
Professor and Chair

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## Statement from the Chair/Associate Dean

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 (2021) 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** – 2021 was a really strong year for NCBP faculty, with several additional large federal awards granted, and more to be awarded in 2022. Nearly all federal funding with >40% composite indirect rate (e.g., NIH, NSF, DARPA, AFRL)
- 2) **Core Facilities** utilized by >30 faculty from 3+ colleges – a. Microscopy, b. “BioBank”, c. Small animal physiology, d. tissue/ cell culture/gel documentation.
- 3) **Peer-reviewed publications** – ~30 peer-reviewed publications in high impact journals

**B. Education:**

- 1) **Medical student education** - NCBP faculty are involved in the development, administration, and/or delivery of all seven foundational modules in years 1 and 2 of the BSOM Wright Curriculum. NCBP faculty members direct six of seven basic science modules throughout these two years.
- 2) **Ph.D. education/training** – NCBP faculty members contribute significantly to the education/training of Ph.D. and M.D/Ph.D. students through mentoring students and delivery of core/elective courses, with the Ph.D. and the M.D/Ph.D. Program Directors now NCBP faculty members. Four NIH-funded NCBP faculty members secured minority Ph.D. student supplemental funding for MD/PhD students working in their labs – these were the first NIH minority supplements ever funded at Wright State! In 2021, two of these MD/PhD students received additional national awards – Jennae Shelby, working in Dr. Susuki’s lab, received an NIH F30, individual pre-doctoral fellowship, and Adaku Ume received the American Physiological Society, Porter Development Fellowship – both, the first ever awarded at WSU.
- 3) **M.S. degree programs** – Direct/deliver three, self-paying M.S. programs training ~40% of CoSM M.S. students. M.S. Programs in Anatomy, Microbiology & Immunology, and Physiology & Neuroscience provide interactive education and/or research experiences designed to prepare graduates for careers in the biomedical sciences. The Wright Bridge to UME program has proven successful, and provides opportunities that advantage students, our M.S. programs, and the BSOM UME program. Approval of a non-thesis M.S. in Physiology and Neuroscience should increase the size of our M.S. student body.
- 4) **4 + 1 BS to MS in Physiology and Neuroscience Program created** – In 2021, NCBP created a 4 +1 BS to MS degree program in our Physiology and Neuroscience degree programs that has already generated significant interest and participation, further enhancing our already large MS programs.
- 5) **Undergraduate education and programs**
  - a) NCBP faculty direct/deliver foundational “anatomy/physiology” courses annually to ~1,000 undergraduates.
  - b) The B.S. in Neuroscience program provides an innovative active learning educational experience designed to prepare graduates for careers in the biomedical sciences. In its third year, the program had ~100 majors.

**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; STEMM; Women in Science Giving Circle; Destination Imagination; Neuroengineering Research for HS students.

**Of particular note: Interactive lab experiences for high school students** – NCBP faculty developed two interactive laboratory experiences for high school students: 1) Human Anatomy and Physiology (HAPI lab) and 2) NeuroLab. The HAPI lab completed its 7<sup>th</sup> year and has received significant regional and national acclaim as an exemplary experiential program designed to excite and educate high school students about the biomedical sciences. The NeuroLab was similarly successful in its first two years. For their efforts, the leaders of each experience, Ms. Bridgett Severt and Dr. Patrick Sonner, received the 2019 College of Science and Mathematics Faculty Excellence Award - Spirit of Innovation. Finally, Bridgett Severt, Pat Sonner, Nick Christian, and I worked together to formalize the NCBP high school outreach programs (HAPI and Neuro Labs) as bona fide recruitment efforts for which we received one of the inaugural Faculty Initiated Recruitment Program (FIIRP) awards (\$7,200). We recently also applied for a grant from the CareSource Foundation to support our efforts to include the development of a third program as well as enhance our outreach to and opportunities for students from regional urban and rural high schools.

**E. Awards/Honors:** NCBP faculty members received **five** teaching/mentoring/faculty awards in 2021, (and three additional awards to date in 2022!). Several B.S., M.S., Ph.D., M.D., and M.D./PhD. NCBP students received awards at the local and national levels.

Faculty awardees were:

1. President's Award for Outstanding NTE Faculty: Teaching (**B. Severt**)
2. Fellow for the American Heart Association (**C. Williams**)
3. Young Investigator Research Award by the American Physiology Society – Renal (**C. Williams**)
4. Academy of Medicine Award for Outstanding Junior Faculty BSOM (**C. Williams**)
5. Academy of Medicine Award for Outstanding Senior Faculty BSOM (**N. Bigley**)

## 2 Programs/Divisions

Name of Division or Program	Director	Dates
Neuroscience Institute	Mark M. Rich, M.D., Ph.D.	2015-Present
BMS Ph.D. Program	David Ladle, Ph.D.	2020-Present

## 3 Fully Affiliated Faculty (may be the same as #2 above for some depts)

Name and Academic Position	Clinical Interests	Research Interests
Eric Bennett, Ph.D., Associate Dean Medical Education-Pre Clerkship Curriculum, 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., Assistant Professor		Understanding the role of post translational modifications in regulating cardiac and neuronal function
Sherif Elbasiouny, Ph.D., Full Professor		Cellular mechanisms regulating neuronal excitability and motor system output
Kathrin Engisch, Ph.D., Interim Dean, CoSM, Associate Professor		Neurotransmitter release
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 Kraszpuska, Ph.D., Associate Professor		Medical and graduate education; Gross Anatomy
Michal Kraszpuski, Ph.D., Lecturer		Graduate education; Neuroscience
Michael Matott, Ph.D. Assistant Professor		Medical and graduate education; Physiology
Debra Mayes, Ph.D., Assistant Professor (Through July 31, 2021)		Effects of junction proteins on stress, metabolism, and cell proliferation/death in vascular, cancer, and neurodegenerative disease models
Mark Rich, M.D., Ph.D., Full Professor	Neurology	Synaptic plasticity; Critical illness myopathy
Nick Ritucci, Ph.D., Senior Lecturer		Undergraduate and medical education; Physiology
Bridgett Severt, M.D., Lecturer		Undergraduate education; Anatomy
Patrick Sonner, Ph.D., Senior Lecturer		Undergraduate and graduate education; Neuroscience
Keiichiro Susuki, M.D., Ph.D., Associate Professor		Symptoms in a broad range of diseases including multiple sclerosis, traumatic brain injury, and various forms of neuropathy
Clintoria Williams, Ph.D., Associate Professor		Pathophysiology of kidney disease.
Dawn Wooley, Ph.D., Full 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  
BIO Animal Physiology-  
BIO 4000 Capstone  
BIO 4950 Senior Honors Research  
BIO 4990 Special Problems in Biology  
BME 4950 Independent Research Study  
MI 4200 Neuro Immune System Cross-Talk in Hemostasis  
MI 4260 Immunology  
MI 4310 Virology  
MI 4750 Pathogenic Mechanisms  
NEU 1010 Introduction to the Neuroscience Program  
NEU 2000 Introduction to Undergraduate Neuroscience Program for Majors  
NEU 3100 How the Nervous System Works I  
NEU 3200 How the Nervous System Works II  
NEU 3400 Advanced Techniques in Neuroscience: Microscopy  
NEU 4020 HON: Senior Capstone Neuroscience Lab Research  
NEU 4030 Neuroscience/Biomedical Review Article  
NEU 4040 Senior Capstone: Neuroscience Grant Development  
NEU 4200 Neuro Immune System Cross-Talk in Hemostasis  
NEU 4400 Developmental Neuroscience  
NEU 4990 Independent Research Neuroscience  
PN 4420 Introductory Neurophysiology  
PN 4880 Independent Reading in Physiology

PN 4990 Special Problems in Physiology  
PSY 2910 Drugs and Behavior  
PSY 3910 Behavioral Neuroscience  
PSY 4060 Independent Research Study  
PSY 4940 Animal Behavior Capstone  
PSY 4941 Field Study  
SM 1010 Scientific Literacy for the 21<sup>st</sup> Century  
SM 2100 Scientific Inquire - ASK

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

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  
ANT 6030 Biomedical Review Article  
ANT 6040 Biomedical Experimental Design  
ANT 6340 Biological Safety  
ANT 6990 Special Problems in Anatomy  
ANT 7000 Human Anatomy Instruction  
ANT 7010 Selected Topics in Anatomy  
ANT 7020 Special Dissection  
ANT 7110 Human Gross Anatomy  
ANT 7150 Advanced Human Embryology  
ANT 7210 Human Microanatomy  
ANT 7310 Human Neurobiology  
ANT 7550 Practicum Literature Review  
ANT 8000 Anatomy Seminar  
ANT 8600 Principles of Biomedical Research  
ANT 8990 Anatomy Research  
BME 7380 From Neurons to Behavior – In Health Disease  
BME 7990 Independent Research Study  
BMS 9970 Lab Rotation  
BMS 9990 Dissertation Research  
MI 6200 Neuro Immune System Cross-Talk in Hemostasis  
MI 6340 Biological Safety  
MI 6750 Pathogenic Mechanisms  
MI 6990 Special Problems  
MI 7260 Immunology  
MI 7310 Virology  
MI 7770 Gene Therapy

MI 7890: Research in Microbiology & Immunology

MI 8000 Microbiology and Immunology Seminar

MI 8990 Microbiology Research

NEU 6400 Developmental Neuroscience

PN 6100 Human Physiology

PN 6300 Medical Cell Biology & Physiology

PN 7010 Selected Topics in Physiology

PN 7220 Ion Channels

PN 7750 Neuroscience and Physiology

PN 7760 Intercellular Communications

PN 8000 Physiology Seminar

PN 8600 Principles in Biomedical Research

PN 8990 Physiology Research

### **Undergraduate medical education** [medical school]

SMD 8140 - Staying Alive

SMD 8130 - Host and Defense

SMD 8100 - Clinical Medicine: Foundations I

SMD 8210 - Beginning to End

SMD 8110 - Origins

SMD 8230 - Balance, Control & Repair

SMD 8120 - Human Architecture I

SMD 8220 - Human Architecture II

SMD 8121 - Human Architecture I Repeat

SMD 8221 - Human Architecture II Repeat

Wright Q small group facilitators



# 5 Scholarly Activity

## Funded and Active Grants

### EXTRAMURAL COMPETITIVE

**Dr. Bennett**, PI - NSF, Collaborative Research: Data-driven integration of biological with in-silico experiments to determine mechanistic effects of N-glycosylation on cellular electromechanical functions, P.I. Eric Bennett, (08/01/2019 to 07/31/2023). Total cost, \$773,970.

**Dr. Brown**, NIH NIDDK 2R01DK095132-05A1, The maternal-fetal adiponectin differential and fetal fat deposition, P.I. J. Shao, Total cost for entire grant period \$1570000.

**Dr. Brown**, AMAG Pharmaceuticals, Placental exosomes induce pathophysiological symptoms of pre-eclampsia, (12/4/2020-12/3/2021), PI, T.L. Brown.

**Dr. Ednie**, co-PI - National Science Foundation - Collaborative Research: Data-driven Integration of biological with in silico experiments to determine mechanistic effects of N-glycosylation on cellular electromechanical functions, P.I. Eric Bennett, Ph.D.

**Dr. Elbasiouny**, United States Air Force, Brain-Computer Interfaces for Assessment and Enhancement of Airman and Teams in Operational Environments (contract #: 671200), P.I. Sherif Elbasiouny, (06/01/2020 to 05/31/2021) Total \$150000, Direct Current Year \$100000, Indirect Current Year \$50000, Total cost for entire grant period \$150000, 22% salary for Dr. Elbasiouny.

**Dr. Elbasiouny**, National Academy of Sciences, Identification of Electrophysiological Markers for Early Diagnosis of Amyotrophic Lateral Sclerosis, P.I. Sherif Elbasiouny, (03/01/2018 to 02/28/2021) Total \$27904, Direct Current Year \$18854, Indirect Current Year \$9050, Total cost for entire grant period \$189769.

**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 01/31/2022) Total \$323750, Direct Current Year \$105000, Indirect Current Year \$218750, Total cost for entire grant period \$1618750, 33% salary for Dr. Elbasiouny.

**Dr. Elbasiouny**, National Institute of Neurological Disorders and Stroke, NIH, Neurodegeneration mechanisms common to both ALS and AD, P.I. Sherif Elbasiouny, (08/01/2019 to 01/31/2022) Total \$286836, Direct Current Year \$191224, Indirect Current Year \$95612, Total cost for entire grant period \$1618750, 11% salary for Dr. Elbasiouny.

**Dr. Elbasiouny**, National Institutes of Health, The impact of neuromodulatory state on the excitability changes of motoneurons and the motor pool in ALS, P.I. Sherif Elbasiouny, (07/01/2018 to 01/31/2022) Total \$20055, Direct Current Year \$15850, Indirect Current Year \$4205, Total cost for entire grant period \$104636.

**Dr. Elbasiouny**, National Academy of Sciences, U.S.-Egypt S&T Visiting Lecture Series, P.I. Sherif Elbasiouny, (07/13/2018 to 02/28/2021) Total \$782 Direct Current Year \$522 Indirect Current Year \$260, Total cost for entire grant period \$2347.

**Dr. Elbasiouny**, NIA, Motoneuronal mechanisms underlying age-related muscle weakness, P.I. Sherif Elbasiouny, (6/1/2021 to 2/28/2026) Total \$308270, Direct Current Year \$205513, Indirect Current Year \$102757, Total cost for entire grant period \$2992298, 33% salary for Dr. Elbasiouny.

**Dr. Janson**, NIH, National Institute on Aging, Differential clearance of pyroglutamate abeta through arachnoid and meningeal lymphatics in Alzheimer Disease, P.I. Christopher Janson, (09/01/2019 to 06/30/2024), Annual total cost - \$376,763. Approx. Total Cost - \$1, 900,000.

**Dr. Kozak**, NIH, Discovery of germline genes and regulatory networks in planarians, P.I. Labib Rouhana.

**Dr. Kozak**, National Institute of Allergy and Infectious Diseases, Sodium Influx Assay for Measurement of TRPM7 Channel Activity in Intact Cells, P.I. , (06/01/2020 to 05/31/2021), 25 salary for Dr. Kozak.

**Dr. Lober**, The Cure Starts Now / DIPG Collaborative Snap Grant Responses of distinct cell populations to PDGFRA inhibitors in diffuse intrinsic pontine glioma, Role: Principal Investigator (\$69,900).

**Dr. Rich**, PI - Muscular Dystrophy Association, MDA 602459, Block of TRPV4 channels as a novel approach to therapy of myotonia congenita, PI, M. Rich (2/1/2019-1/31/2022).

**Dr. Rich**, PI - National Institute of Arthritis and Musculoskeletal and Skin Diseases, R01NS074985, Novel Approaches to Therapy of Muscle Ion Channelopathies, PI, M. Rich (4/1/2019-3/30/2024).

**Dr. Rich**, PI - National Institute of Arthritis and Musculoskeletal and Skin Diseases, R01 Diversity supplement for AR074985, Development of Novel Therapy for Hypokalemic Periodic Paralysis, PI, M. Rich (7/1/2019-3/31/2022).

**Dr. Susuki**, PI - NIH, NINDS, R01 NS107398, Disruption of excitable axonal domains by glucose metabolite methylglyoxal, P.I. Keiichiro Susuki, (08/01/2019 - 07/31/2023) Direct costs: \$240,800/year.

**Dr. Susuki**, PI - NIH, NINDS, R03 NS112981, Cell type-specific roles of calpain-2 in formation of peripheral myelinated nerves, P.I. Keiichiro Susuki, (09/15/2019 - 08/31/2021) Total \$150,000.

**Dr. Susuki**, PI - NIH, NINDS, 3R01NS107398-01A1S1, ER stress mediates methylglyoxal-evoked AIS shortening and neuronal dysfunction, P.I. Keiichiro Susuki, (1/1/2020 to 7/31/2022) Total \$40577, Direct Current Year \$31817, Indirect Current Year \$8760, Total cost for entire grant period \$1707033.

**Dr. Susuki**, NIH, NIA/NINDS, F30 NS124237, Unfolding the link between the endoplasmic reticulum, AIS shortening, and cognitive impairment in type 2 diabetes, P.I. Jennae N. Shelby, MD/PhD candidate in Biomedical Sciences , (08/01/2021 to 07/31/2025), Total cost for entire grant period \$188910.

**Dr. Susuki**, Graduate Student Assembly, Wright State University, The involvement of the axon initial segment in abnormal network activity at the early stage of neurodegenerative disease, P.I. Duc Van Minh Nguyen, 2nd year master student in Physiology and Neuroscience, (4/26/2021 to 12/31/2021), Total cost for entire grant period \$750.

**Dr. Williams**, NIH/NIDDK, Impact of Calcineurin Inhibitors on Kidney Function, P.I. Clintoria Williams, Total \$117754, Direct Current Year \$117754.

**Dr. Williams**, NIH/NIDDK, Role of Calcineurin Isoforms in Blood Pressure Regulation, P.I. Clintoria Williams, Total \$375000, Direct Current Year \$375000.

**Dr. Williams**, NIH/NIDDK, Diversity supplement, Role of Calcineurin Isoforms in Blood Pressure Regulation, P.I. Clintoria Williams.

**Dr. Williams**, American Heart Association, Role of Calcineurin Isoforms in Regulation of the Sodium-Chloride Cotransporter, National Scientist Development Grant, P.I. Clintoria Williams, Total \$308000, Direct Current Year \$308000.

### **PRIVATE FOUNDATIONS**

Hartke Family Gift - Five-Year Commitment of Support for Biobanking Operations (\$50,000)

Bev Parker Private Gift - Support of Biobanking Operations (\$5,000)

Hartzell Norris Charitable Trust - Equipment Support for Glioma Research at Dayton Children's (\$10,000)

Greg and Patti Atkinson Private Gift – Support of Biobanking Operations (\$2,500)

## **INTERNAL**

**Dr. Brown**, Wright State University Foundation, Endowment for Research on Pregnancy Associated Disorders, P.I. Thomas Brown.

**Dr. Brown**, Wright State University Obstetrics and Gynecology Translational Research Initiative, Molecular Genetic Analysis Predictive of Preeclampsia and Its Severity in Human Pregnancy, P.I. Thomas Brown, Total cost for entire grant period \$30000.

**Dr. Brown**, WSU and Premier Health Neuroscience Institute , Neuroscience Institute, P.I. Thomas Brown, Total cost for entire grant period \$209000.

**Dr. Susuki**, Medical Student Research Grant, Boonshoft School of Medicine, Wright State University, Calpain gene expression during peripheral nerve myelination and demyelination: implications for pathophysiology of a hereditary polyneuropathy Charcot-Marie-Tooth disease, (10/20/2019 - 03/31/2021).

**Dr. Williams**, Wright State University, Impact of Preeclampsia on Neurocognition, Total cost for entire grant period \$308000.

## **Publications**

### **Papers in refereed journals**

Beesetty P, Rockwood J, Kaitsuka T, Zhelay T, Houran, S, Matsushita M, **Kozak JA**. Phagocytic activity of splenic macrophages is enhanced and accompanied by cytosolic alkalinization in TRPM7 kinase-dead mice., FEBS Journal , 288, 3585-3601, 2021.

**Brown TL**. Light-Activated Molecules Stop Apoptosis at the Flip of a Switch. ', The Scientist, January, Online, 2021.

Chang K-J, Agrawal I, Vainshtein A, Ho WY, Xin W, Tucker-Kellogg G, **Susuki K**, Peles E, Ling S-C, Chan JR. TDP-43 maximizes nerve conduction velocity by repressing a cryptic exon for paranodal junction assembly in Schwann cells, eLife, 10, e64456, 2021.

Chen A, Phillips KA, Schaefer JE, and **Sonner PM**. The Development of Core Concepts for Neuroscience Higher Education: From Beginning to Summer Virtual Meeting Satellite Session, The Journal of Undergraduate Neuroscience Education (JUNE), 1-4, 2021.

Cheriyana MA, Ume AC, Francis CE, King-Medina KN, Linck VA, Bai Y, Cai H, Hoover RS, Ma HP and **Williams CR**. Calcineurin A-alpha suppression drives Nuclear Factor B-mediated NADPH oxidase-2 upregulation, Am J Physiol Renal Physiol, 2022.

Chokshi R, Bennett O, Zhelay T, **Kozak JA**, NSAIDs naproxen, ibuprofen, salicylate and aspirin inhibit TRPM7 channels by cytosolic acidification. ', Frontiers in Physiology, 12, 727549, 2021.

**A.R. Ednie** and **E.S. Bennett**. Intracellular O-linked glycosylation directly regulates cardiomyocyte L-type Ca<sup>2+</sup> channel activity and excitation-contraction coupling. Basic Res Cardiol. 2020 Sep 10;115(6):59. doi: [10.1007/s00395-020-00820-0](https://doi.org/10.1007/s00395-020-00820-0). PMID: 32910282.

Gamal M, Mousa MH, Eldawlatly S, **Elbasiouny SM**. In-silico development and assessment of a Kalman filter motor decoder for prosthetic hand control', Comput Biol Med., 132, 104353, 2021.

Griggs RB, Nguyen DVM, Yermakov LM, Jaber JM, Shelby JN, Steinbrunner JK, Miller JA, Gonzalez-Islas C, Wenner P, and Susuki K. The type 2 diabetes factor methylglyoxal mediates axon initial segment shortening and alters neuronal function at the cellular and network levels, eNeuro, 8, ENEURO.0201-21.2021, 2021.

Jakubas D, Wojczulanis-Jakubas K, Powers A. Frazier T, Bottomley M, **Kraszpuski M**. Differences in a Cage Escape Behaviour between two Migrating Warblers of Different Stop-over Strategy, Animals, 11, 639, 2021.

Montgomery AE, Allen JM, and **Elbasiouny SM**. Adaptive Neural Decoder for Prosthetic Hand Control, *Frontiers in Neuroscience*, 15, 590775, 2021.

Mousa MH and **Elbasiouny SM**. Estimating the effects of slicing on the electrophysiological properties of spinal motoneurons under normal and disease conditions, *J Neurophysiology*, 124 (4), 1450-67, 2021.

Myers JH, Denman K, DuPont C, Hawash AH, Novak KR, Koesters A, Grabner, M, Dayal A, Voss AA, **Rich MM**. The mechanism underlying transient weakness in myotonia congenita., *ELife*, 2021.

Padilla CJ, Harrigan ME, Harris H, Schwab JM, Rutkove SB, **Rich MM**, Clark BC, Arnold WD. Profiling age-related muscle weakness and wasting: neuromuscular junction transmission as a driver of age-related physical decline, *Geroscience.*, 43, 1265-1281, 2021.

Parvin S, **Williams CR**, Jarrett SA and Garraway SM. Spinal Cord injury increases pro-inflammatory cytokine expression in kidney at acute and sub-chronic stages, *Neurorehabilitation and Neural Repair*, June, 2021.

Rakoczy RJ, Kamra K, Yi Y-J, and **Wyatt CN**. Ethanol and Opioids do not act Synergistically to Depress Excitation in Carotid Body Type I cells., *Neuroreport*, 32 (16), 1307-1310, 2021.

Romer SH, Metzger S, Peraza K, Wright MC, Jobe DS, Song LS, **Rich MM**, Foy BD, Talmadge RJ, Voss AA. A mouse model of Huntington's disease shows altered ultrastructure of transverse tubules in skeletal muscle fiber, *J Gen Physiol*, 153, 2021.

Simpson B, **Rich MM**, Voss AA, Talmadge RJ. Acetylcholine receptor subunit expression in Huntington's disease mouse muscle, *Biochem Biophys Rep.* , 28, 2021.

Ume AC, Wenegieme TY and **Williams CR**. Calcineurin Inhibitors: A Double-Edged Sword, *Am J Physiol Renal Physiol.*, Nov 23, 2021.

Vaughan OR, Maksym K, Silva E, Barentsen K, Anthony RV, **Brown TL**, Hillman SL, Spencer R, David AL, Rosario FJ, Powell TL and Jansson T. Placenta-specific Slc38a2/SNAT2 knockdown causes fetal growth restriction in mice. *Clinical Science*, 135, 2049-2066, 2021.

Waker, CA, Kaufman, MR and **Brown TL**. Current State of Preeclampsia Mouse Models: Approaches, Relevance and Standardization, *Frontiers in Physiology*, 12, 681632, 2021.

Walters MC and **Ladle DR**. Calcium homeostasis in parvalbumin DRG neurons is altered after sciatic nerve crush and sciatic nerve transection injuries., *J Neurophysiol.*, 126, 1948-1958, 2021.

### **Government Policy**

**Wooley D**. Poliovirus Containment Working Group of the Board of Scientific Counselors, Transfer, Version 2, May 2021, Government Policy, 2021.

**Wooley D**. Poliovirus Containment Working Group of the Board of Scientific Counselors, Security, Version 2, May 2021, Government Policy, 2021.

**Wooley D**. Poliovirus Containment Working Group of the Board of Scientific Counselors, Inventory, Version 2, May 2021, Government Policy, 2021.

**Wooley D**. Poliovirus Containment Working Group of the Board of Scientific Counselors, Risk Mitigation Strategies, Version 2, February 2021, Government Policy, 2021.

**Wooley, D**. Poliovirus Containment Working Group of the Board of Scientific Counselors, Shared Use of PEFs, Version 2, June 2021, Government Policy, 2021.

## Published abstracts

### Posters

Chen A, Phillips KA, Schaefer JE, and **Sonner PM**. The Development of Core Concepts for Neuroscience Higher Education, Neuroscience Teaching Conference, Online 7/22/2021 - 7/23/2021 (Platform).

Griggs RB, Nguyen DVM, Jaber JM, Yermakov LM, Shelby JN, Susuki. K. Mechanisms of methylglyoxal-evoked axon initial segment (AIS) shortening. , Neuroscience Day, Ohio Miami Valley Chapter, Society for Neuroscience, Dayton, OH (Poster).

Mellott A, Rockwood J, Luu CT, **Kozak JA**. TRPM7 Permeant Divalent Metal Cytotoxicity During Magnesium Depletion and Loading, Biophysical Society 65th Annual Meeting, Virtual (Poster).

Miller JA, Drouet DE, Bensabeur FZ, Yermakov LM, **Susuki K**. Distinct changes in calpain-calpastatin during myelination and demyelination in the PNS., Neuroscience Day, Ohio Miami Valley Chapter, Society for Neuroscience, Dayton, OH (Poster).

Rockwood J, Beesetty P, Kaitsuka T, Matsushita M, **Kozak JA**. TRPM7 KINASE INACTIVATION RESULTS IN MACROPHAGE ALKALINIZATION AND INCREASED PHAGOCYTIC ACTIVITY, Biophysical Society 66th Annual Meeting, San Francisco (Poster).

Rockwood J, Beesetty P, Zhelay T, Hourani S, Kaitsuka T, Matsushita M, **Kozak JA**. TRPM7 inactivation and the role of pH in phagocytic activity in murine macrophages. , The 74th Annual Meeting of the Society of General Physiologists, Woods Hole, MA (Poster).

Shelby JN, Griggs RB, Steinbrunner JK, **Susuki.K**. Methylglyoxal shortens axon initial segment length via endoplasmic reticulum stress., Neuroscience Day, Ohio Miami Valley Chapter, Society for Neuroscience, Dayton, OH - (Poster).

Slyby J, Linkous B, Scott S, Chandiramani C, Hwang A, Spanbauer D, Melissa Kaufman M, Rackett T, Nolan K, Stone E, Maxwell R, Dhanraj D, **Brown TL**. Placental hypoxia inducible factor-1a in early onset preeclampsia as a predictor of future risk in maternal and fetal health , Wright State University BSOM Medical Student Research Forum, Dayton, OH (Poster).

Stevens K, Grachan J, **Severt B**, Wisco J, Mattison K. Gross Anatomy Labs During the Pandemic and Beyond., HAPS Annual Conference, Virtual (Platform).

### Grant Reviews

**Dr. Bennett**, NSF Engineering Research Center Panel

**Dr. Bennett**, Ad Hoc reviewer, NSF Integrative Organismal Systems Cluster

**Dr. Elbasiouny**, Department of Veterans Affairs

**Dr. Elbasiouny**, NIH

**Dr. Ladle**, NIH U19 BRAIN Initiative Special Emphasis Panel (P03)

**Dr. Rich**, NIH CNNT study section

**Dr. Susuki**, NIH, NINDS, Cellular and Molecular Biology of Glia (CMBG) Study Section (8)

**Dr. Williams**, American Heart Association, Organ Studies 1 Fellowship Peer Review Committee, 2021

### Manuscript Reviews

**Dr. Bennett**, Journal of General Physiology

**Dr. Bigley**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Dr. Bigley, Journal of Veterinary Immunology

**Dr. Bigley**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Journal of Viral Immunology

**Dr. Bigley**, Journal Manuscript, As member of editorial board, Frontiers in Immunology

**Dr. Corbett**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Nutritional Neuroscience

**Dr. Elbasiouny**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Frontiers in Cellular Neuroscience

**Dr. Elbasiouny**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Frontiers in Neuroscience

**Dr. Elbasiouny**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, International J. Molecular Sciences

**Dr. Elbasiouny**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Journal of Physiology  
**Dr. Elbasiouny**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Neuroscience  
**Dr. Halm**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Cells - MDPI  
**Dr. Halm**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, EMBO Molecular Medicine  
**Dr. Halm**, Journal Manuscript, As member of editorial board, American Journal of Physiology, Cell Physiology  
**Dr. Kozak**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Cellular and Molecular Life Sciences (Springer)  
**Dr. Kozak**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Frontiers in Pharmacology  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Journal of Neuroimmunology  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Neurochemistry International  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Neuroscience Letters  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Phytomedicine  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Scientific Reports  
**Dr. Susuki**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, The Journal of Neuroscience  
**Dr. Williams**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, American Journal of Physiology, Cell Physiology  
**Dr. Williams**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, American Journal of Physiology, Renal Physiology  
**Dr. Williams**, Journal Manuscript, Ad Hoc Reviewer/limited responsibility, Journal of the American Society of Nephrology  
**Dr. Williams**, Journal Manuscript, As member of editorial board, American Journal of Physiology, Renal Physiology  
**Dr. Williams**, Journal Manuscript, As member of editorial board, Frontiers in Physiology, Renal and Epithelial Physiology  
**Dr. Wyatt**, Journal Manuscript, Other, The Journal of Physiology  
**Dr. Wyatt**, Frontiers in Physiology - Integrative Physiology Section

### Editorial Board

**T. Brown**, Journal Manuscript, As member of editorial board, Journal of Developmental Biology  
**D. Halm**, Journal Manuscript, As member of editorial board, American Journal of Physiology, Cell Physiology (14)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Anatomy & Physiology (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Cell & Molecular Biology (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Cell Biology & Cell Metabolism (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Clinical Psychiatry (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, International Journal of Anatomy & Applied Physiology (IJAAP) (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Cell & Molecular Biology (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Cell Signaling (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Immunology (MJIM) (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Neurology & Experimental Neural Science (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Translational Biomarkers & Diagnostics (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, J. Translational Diagnostics & Technology (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Neuro Immunology (1)  
**D. Mayes**, Journal Manuscript, As member of editorial board, Physical Medicine & Rehabilitation Leaflets (1)  
**C. Williams**, Journal Manuscript, As member of editorial board, Advances in Physiology Education (1)  
**C. Williams**, Journal Manuscript, As member of editorial board, American Journal of Physiology, Renal Physiology (1)  
**C. Williams**, Journal Manuscript, As member of editorial board, Frontiers in Physiology, Renal and Epithelial Physiology (1)  
**C. Wyatt**, Journal Manuscript, As member of editorial board, Frontiers in Physiology (1)  
**C. Wyatt**, Journal Manuscript, As member of editorial board, Science (1)

### Consultantships

T. Brown, Apoptrol, LLC (Cell Death Inhibitors)  
 T. Brown, Clintoria Williams, Assistant Professor, WSU, NCBP  
 T. Brown, Courtney Sulentic, Associate Professor, WSU, Pharmacology & Toxicology  
 T. Brown, Tarun Goswami, Professor, WSU Biomedical, Industrial & Human Factors Engineering  
 D. Wooley, Western Institutional Review Board/IBC Services

# 6 Summary of Service Activities

## Student advising

### Student Research Committees

N. Bigley, Student Research Committee, Nada Abdullah I Alghanem  
N. Bigley, Student Research Committee, Mazen Saaed S. Almohammdi  
N. Bigley, Student Research Committee, Katherine Bingham  
N. Bigley, Student Research Committee, Bryce Anderson  
N. Bigley, Student Research Committee, Katherine Bingham  
N. Bigley, Student Research Committee, Cora Cox  
N. Bigley, Student Research Committee, Alanoud Ghassan Y. Gohnaim  
T. Brown, Student Research Committee, Thesis Advisory Committee - Christopher Waker  
T. Brown, Student Research Committee, Thesis Advisory Committee: Clayton Patrick Alex-Buckner  
T. Brown, Student Research Committee, Thesis Advisory Committee: John Miller  
T. Brown, Student Research Committee, Thesis Advisory Committee: Mia Burnett  
T. Brown, Student Research Committee, Thesis Advisory Committee: Miliben Bhakta  
T. Brown, Student Research Committee, Thesis Advisory Committee: Venicia Alhawach  
A. Corbett, Student Research Committee, Cameron Webb  
S. Elbasiouny, Student Research Committee, Served as a candidacy exam committee member in the PhD in Engineering program for student Paul Stone  
S. Elbasiouny, Student Research Committee, Served as a committee member in the PhD defense of the BME student Chein Poon  
S. Elbasiouny, Student Research Committee, Served as a committee member on the MS thesis defense of Cameron Webb  
D. Halm, BMS, Thesis Committee for Daniel Miranda  
D. Halm, BMS, Thesis Committee for Jessica Myers  
D. Halm, BMS, Thesis Committee for Yaksh Rathod  
D. Ladle, Student Research Committee, M.S. in Anatomy thesis committee for Joshua Krech  
D. Ladle, Student Research Committee, M.S. in Physiology and Neuroscience thesis committee for Delaney Grant  
R. Lober, Student Research Committee, Christine Kinstedt  
P. Sonner, Student Research Committee, MS Thesis Committee for Delaney Grant  
P. Sonner, Student Research Committee, MS Thesis Committee for Joshua Krech  
K. Susuki, Student Research Committee, Committee member of an MD/PhD student Christiana Draper  
K. Susuki, Student Research Committee, Committee member of Dharminder Singh Langri, PhD candidate in Biomedical Engineering  
K. Susuki, Student Research Committee, Committee member of Sarah Williams, PhD candidate in Biomedical Sciences  
D. Wooley, Student Research Committee, Alanoud Ghonaim, M.S. Student in the M&I Program  
D. Wooley, Student Research Committee, Bryce Anderson, M.S. Student in the M&I Program  
D. Wooley, Student Research Committee, Cora Cox, M.S. Program in the M&I Program  
D. Wooley, Student Research Committee, Katherine Bingham, M.S. Student in the M&I Program  
D. Wooley, Student Research Committee, Mark Calabro, M.S. Student in the M&I Program  
D. Wooley, Student Research Committee, Rawan Alqahtani, M.S. Student in the BIO Program

### Undergraduate Students

E. Bennett - 1  
T. Brown - 4  
A. Ednie - 1  
D. Ladle - 5  
N. Ritucci - 50  
B. Severt - 50  
P. Sonner - 93 (Spring Semester); 100 (Fall Semester)  
C. Wyatt - 2

## Graduate Students

E. Bennett - 2  
N. Bigley – 12  
T. Brown – 3  
A. Ednie - 2  
S. Elbasiouny – 5  
A. Kozak – 3  
B. Kraszpulska – 33  
D. Ladle – 5  
N. Ritucci – 4  
B. Severt – 4  
K. Susuki – 3  
C. Wyatt – 3  
D. Wooly – 6

## Boonshoft School Medicine (M.D.)

M. Rich - 2  
K. Susuki - 1

## GRADUATING STUDENTS IN 2021

### ANATOMY (COURSE)

Amurgis, Lillian  
Babel, Adrian  
Bello, Sholabomi  
Bragg-Brock, Taylor  
Chandiramani, Candni  
Drummond, Lauren  
Issa, Yasmeeen  
Johnston, Alexander  
Khalilzadeh, Danielle  
Muncrief, Matthew  
Ragsdale, Victoria  
Theodore, Dominic  
Zeidler, Andrew

### ANATOMY (THESIS)

**Benedict, Valerie.** *The Effect of Endogenous Ligands of the Aryl Hydrocarbon Receptor on Antibody Expression in a Human B-Cell Model.* **Courtney Sulentic**

**Kinstedt, Christine.** *Using Functionalized Benzylidene Oxindoles to Determine an Improved Monoamine Oxidase-B Inhibitor as a Therapeutic Agent for Parkinson's Disease.* **Daniel Ketcha**

**Krech, Joshua.** *Characterization of *Inhbb*, *Heatr5a*, & *Cyp2s1* Expression in Dorsal Root Ganglia by In-Situ Hybridization.* **David Ladle**

**Williamitis, Joseph.** *Using fMRI BOLD Imaging to Motion-Correct Associated, Simultaneously Imaged PET Data.* **Robert Lober**

### PHYSIOLOGY AND NEUROSCIENCE (COURSE)

Ademhan, Devser  
Molina, Andrea  
Kinstedt, Christine  
Vinston, Collin



## PHYSIOLOGY AND NEUROSCIENCE (THESIS)

**Grant, Delaney.** *A Novel Method for Analysis of Proprioceptor Sensory Neuron Subtypes in the Mouse Dorsal Root Ganglia.* **David Ladle**

**Webb, Cameron.** *Effects of Fluoxetine/Simvastatin/Ascorbic Acid Combination Treatment on Neurogenesis and Functional Recovery in a Model of Multiple Sclerosis.* **Adrian Corbett**

## MICROBIOLOGY AND IMMUNOLOGY (THESIS)

**Alghanem, Nada Abdullah I.** *M1 Pro-inflammatory Macrophages Exhibit Increased Expression of ACE2.* **Nancy Bigley**

**Almohammdi, Mazen Saeed S.** *Factors contributing to lower susceptibility of children to covid-19.* **Nancy Bigley**

**Anderson, Bryce.** *Treatment of Apical Periodontitis via Combination Therapy Using Purified Lactobacillus plantarum Lipoteichoic Acid and Intracanal Calcium Hydroxide.* **Dawn Wooley**

**Bingham, Katherine.** *The War on Drugs: How R-Type Pyocins Could be Used to Fight Bacterial Resistance.* **Nancy Bigley**

**Calabro, Mark.** *Investigating Streptococcus pneumoniae and Adenovirus Co-infections of Lung Epithelial Cells.* **Dawn Wooley**

**Cox, Cora.** *IL-10 and TGF-beta Increase Connexin-43 Expression and Membrane Potential of HL-1 Cardiomyocytes Coupled with RAW 264.7 Macrophages.* **Nancy Bigley**

**Gohnaim, Alanoud Ghassan Y.** *Type III as an Effective Therapy for COVID-19 Infection.* **Nancy Bigley**

a

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

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

Admissions Committee (**B. Kraszpulska**)

Assessment and Evaluation Subcommittee (**M. Matott**)

Balance, Control, and Regulation Steering Committee (**M. Matott**)

Basic Science Track Scholarly Projects Committee (**E. Bennett**)

Department of OB/Gyn Faculty Search Committee (**T. Brown**)

Executive Committee (**E. Bennett, M. Rich**)

Faculty Curriculum Committee, Co-Chair (**E. Bennett**)

Faculty Promotions and Advancement Committee (**T. Brown, M. Rich**)

Five Year Review Committee for Eric Bennett (**C. Wyatt, B. Kraszpulska, D. Wooley**)

Foundations Curriculum Committee (**B. Kraszpulska, M. Matott**)

Human Architecture Steering Committee I & II (**B. Kraszpulska**)

LCME Continuous Quality Improvement Steering Committee (**E. Bennett**)

MD/PhD Program (**M. Rich, Director**)

Microbiology Position Search Committee (**M. Matott**)

Neuroengineering Education and Research (**S. Elbasiouny**)

Origins Steering Committee (**E. Bennett, M. Matott**)

Pathology Faculty Search Committee (**C. Williams**)

Research Committee (**C. Williams**)

Small Animal Physiology Core Director (**E. Bennett, C. Williams**)

Staying Alive Steering Committee (**M. Matott**)

## College of Science and Mathematics Committee Memberships

ASK Program Committee (**P. Sonner, C. Williams**)

Chairs and Directors Council (**E. Bennett, D. Ladle**)

Graduate Academic Policies Committee (**B. Kraszpulska**)

Graduate Committee (**B. Kraszpulska**)

Information Technology Committee (**A. Kozak**)  
Institutional Animal Care and Use Committee (**A. Corbett**)  
LSAMP Program (**C. Williams**)  
Neuroengineering Education and Research (**S. Elbasiouny, Director**)  
Petitions Committee (**P. Sonner**)  
Promotion and Tenure Committee (**D. Wooley**)  
Scholarship Committee (**P. Sonner**)  
Senator (**A. Corbett**)  
Steering Committee (**D. Wooley**)  
Undergraduate Curriculum Committee (**P. Sonner, Vice Chair, N. Ritucci, C. Wyatt**)

### **Biomedical Sciences Committee Memberships**

Academic Policies Committee (**E. Bennett, C. Wyatt**)  
Curriculum Committee (**T. Brown**)  
Nominating Committee (**K. Susuki**)  
BMS Student Association (BMSS) (**A. Kozak**)

### **Neuroscience, Cell Biology and Physiology Committee Memberships**

Advisory Committee (**A. Corbett, Chair, B. Kraszpulska, D. Ladle, P. Sonner**)  
Annual Evaluation and Assessment Subcommittee (**B. Kraszpulska Chair, N. Bigley, D. Wooley, D. Ladle, B. Severt**)  
Education Committee (**B. Kraszpulska, M. Kraszpulski, M. Matott, B. Severt, N. Ritucci, P. Sonner, D. Wooley, C. Wyatt, Chair**)  
Executive Committee (**T. Brown, Chair, B. Kraszpulska, P. Sonner, C. Williams**)  
Promotion and Tenure Committee (**A. Corbett Chair, D. Halm, B. Kraszpulska, A. Kozak, D. Ladle, D. Wooley**)  
Research Advisory Committee (**T. Brown, Chair, A. Kozak, K. Susuki, C. Williams**)  
Seminar Series (**A. Kozak, Director**)  
Small Animal Physiology Core (**C. Williams, Director**)

### **Microbiology and Immunology Committee Memberships**

Microbiology and Immunology Program (**D. Wooley, Director**)  
Microbiology and Immunology Graduate Program Admissions Committee (**D. Wooley, N. Bigley, T. Brown**)

### **College of Engineering and Computer Science**

BME Program Committee (**S. Elbasiouny**)  
Ph.D. in Engineering Program (**S. Elbasiouny**)  
Graduate Advisor of BIE Students in Neuroengineering Focus (**S. Elbasiouny**)  
Master's Program in Neuroengineering (**S. Elbasiouny Chair**)

### **Wright State University**

Academic Mediation Committee (**N. Ritucci**)  
Center for Teaching and Learning Faculty Advisory Board (CTL FAB) (**P. Sonner**)  
Commencement Committee (**B. Severt**)  
Compassion in Action Campus Club (**B. Severt, Advisor**)  
Core Alignment and Review Committee (**P. Sonner**)  
Graduate Academic Policies Committee (**M. Kraszpulski**)  
Graduate Faculty Status Committee (**M. Matott**)  
Graduate Faculty Membership Committee (**C. Wyatt**)  
International Education Advisory Committee (**M. Kraszpulski**)  
Neuroengineering at the College of Engineering and Computer Science (**S. Elbasiouny, Chair**)  
Commencement Committee (**B. Severt**)  
Faculty Governance, Faculty Senate Executive Committee (**D. Wooley**)  
Faculty Senate (**D. Wooley, B. Severt**)  
Faculty Senator Representing COSM, 2015-present (**D. Wooley**)  
Graduate Curriculum (**D. Wooley, B. Kraszpulski**)  
Institutional Animal Care and Use Committee (**A. Corbett, Chair, D. Ladle, M. Kraszpulski, A. Ednie**)  
Institutional Biosafety Committee (**D. Ladle, M. Kraszpulski**)

Let's Talk Forum on Wright State Research Institute (**E. Bennett**)  
Library Faculty Advisory Board (**B. Severt**)  
RAPS Faculty Advisory Ad Hoc (**B. Severt**)  
Scholarship and Sponsored Research Committee (SSRC) (**K. Susuki**)  
Search Committee for Dean of CoSM (**P. Sonner**)  
Student-Centered Data Action Team for the University Alliance for Recruitment, Retention, and Completion (UARRC) (**P. Sonner**)  
Conduct Panel (**B. Severt**)  
Student Success Committee (**B. Severt**)  
Undergraduate Curriculum Committee (**P. Sonner**)  
Undergraduate Academic Policies Committee (**B. Severt**)

## **National**

American Biological Safety Association Scientific Program Committee (**D. Wooley**)  
American Heart Association (**C. Williams**)  
American Physiological Society, Chapter Advisory Committee (**D. Halm**)  
American Physiological Society, Joint Programming Committee (**D. Halm**)  
American Physiological Society, Cell Section Steering Committee (**D. Halm**)  
American Physiological Society, Renal Section Awards Committee (**C. Williams**)  
American Physiological Society – Council on the Kidney in Cardiovascular Disease (KCVD) Leadership Committee (**C. Williams**)  
American Physiological Society – Renal Section Committee (**C. Williams**)  
American Society of Nephrology (**C. Williams**)  
Biological Agent Containment Working Group – Centers for Disease Control and Prevention (**D. Wooley**)  
Biophysical Society, Bethesda, MD (**A. Kozak**)  
Board of Scientific Counselors for the Centers for Disease Control and Prevention (**D. Wooley**)  
Black in Physiology (National) - Communication Committee, (**C. Williams**, Chair)  
Black in Physiology (National) - Executive Board ((**C. Williams**, President)  
Black in Physiology (National) - Programming Committee, (**C. Williams**, Co-chair)  
Committee on Health Equity and Justice, Member (**C. Williams**)  
External Tenure Reviewer, University of Chicago, Illinois (**T. Brown**)  
Forum for Emerging Kidney Physiologist, Career Panelist (**C. Williams**)  
Human Anatomy and Physiology Society's Cadaver Use Committee (**B. Severt**)  
KCVD Leadership Committee (**C. Williams**)  
Louis Stokes Alliances for Minority Participation Summer Bridge - Sinclair Community College (**C. Williams**)  
Member of the BME program committee - BIE Department (**S. Elbasiouny**)  
Neuroscience Advisory Board (**K. Susuki**)  
Professional, Chapter Advisory Committee, American Physiological Society (**D. Halm**)  
Professional, Joint Programming Committee, American Physiological Society (**D. Halm**)  
Professional, Steering Committee, Cell and Molecular Section, American Physiological Society (**D. Halm**)  
Women in Science & Medicine Task Force (**C. Williams**)  
Young Investigator Education Enhancement Committee, American Society for Neurochemistry (**K. Susuki**)

## **Other**

ALS Association (**S. Elbasiouny**)  
Biophysical Society, Bethesda, MD (**A. Kozak**)  
Board of Trustees Glen Helen Association, Yellow Springs, Ohio (**D. Halm**)  
Ohio Miami Valley Society for Neuroscience (**A. Corbett, P. Sonner**)  
Ohio Physiological Society (**D. Halm, A. Kozak**)  
WSU Neuroscience Club, Faculty Advisor (**P. Sonner**)  
Mouse Surgical Training, Data Sciences International (**C. Williams**)

# 7

## Patient Care Summary

Mark M. Rich, M.D., Ph.D. – 180 ambulatory visits in 2021

# 8

## Honors and awards [Faculty or staff]

Basic Science Faculty Mentor BSOM (**T. Brown**)

Faculty Development for Medical Student Education BSOM (**M. Matott**)

President's Award for Outstanding NTE Faculty: Teaching (**B. Severt**)

Fellow for the American Heart Association (**C. Williams**)

Young Investigator Research Award by the American Physiology Society – Renal (**C. Williams**)

Academy of Medicine Award for Outstanding Junior Faculty BSOM (**C. Williams**)

Academy of Medicine Award for Outstanding Senior Faculty BSOM (**N. Bigley**)

Poster Award, Society of General Physiologists; Travel Award, Society of General Physiologists, received by Jananie Rockwood (**JA Kozak**).

Poster Award, Festival of Research, CoSM, received by Jananie Rockwood (**JA Kozak**).

Wright State University Best Student Poster Award in 2021 Annual Neuroscience Day, Ohio Miami Valley Chapter, Society for Neuroscience, received by Jennae N. Shelby (**K. Susuki**).

Podium Talk Award in 2021 Festival of Research, College of Science and Mathematics, Wright State University, received by Jennae N. Shelby (**K. Susuki**).

# 9

## Hosted events

February 19, 2021 – Dorothy Schafer, Ph.D., University of Massachusetts Medical School, Worcester, MA, Microglia and immune signaling at the synapse.

February 26, 2021 – Pawel Swietach, Ph.D., Corpus Christi College, The University Oxford, Oxford, UK, Diffusion in biological systems: can it still surprise us?

March 12, 2021 – Sami Noujaim, Ph.D., Morsani College of Medicine University of Southern Florida, Tampa, FL, From the structure of a potassium channel to the heart of a patient: How an antimalarial became an antiarrhythmic.

April 2, 2021 – Cristina Caldari-Torres, Ph.D., Denison University, Granville, OH, Modulation of adipose tissue-derived meta-inflammation by essential fatty acids.

April 9, 2021 – Sandra Garraway, Ph.D., Emory University, Atlanta, GA, Pain after SCI” What is happening in the periphery?

November 5, 2021 – Alfredo Garcia, Ph.D., University of Chicago, Chicago, IL, Breathing to learn and learning to breathe: Understanding the neurophysiological consequences of intermittent hypoxia and beyond.

November 12, 2021 – Matthew McMurray, Ph.D., Miami University, Oxford, OH, Behavioral effects and biological targets of psilocybin and its metabolites.

November 19, 2021 – Weiwen Long, Ph.D., Wright State University, Dayton, OH, A unique role of the F-box protein FBXL16 in proteosomal degradation and cancer development.

December 3, 2021 – Paola Leone, Ph.D., Rowan University, Glassboro, NJ, Gene therapy of neurodegenerative disorders.

# 10

## Other information

### Outreach programs

American Heart Association, Historically Black Colleges and Universities Scholars Program (**E. Bennett, C. Williams**)

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 (**B. Kraszpulska, B. Severt, P. Sonner**)

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. (**S. Elbasiouny, P. Sonner.**)

Women in Science Giving Circle (**A. Corbett, K. Engisch, B. Kraszpulska, B. Severt**)

Special Interest Program – Exposing High School to Neuroengineering Research (**S. Elbasiouny**)

Anatomy Lab Tour, Engineering Summer Camp (**B. Severt**)

University of Gdansk, Poland exchange program with WSU (**M. Kraszpulski**)

The ASK Program (**S. Elbasiouny**)

### Student clubs and activities

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**)

Annual Ohio Miami Valley Brain Bee (**P. Sonner**)

Undergraduate Physiology Club (**N. Ritucci, Advisor**)

BSOM Fitness Club (**N. Ritucci, Advisor**)

Compassion in Action Campus Club (**B. Severt, Advisor**)