



Department of Neuroscience, Cell Biology, and Physiology

Annual Report:

January 1, 2020 – December 31, 2020

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 (2020) include the following:

- A. Research:** Established/maintained well-funded research programs (>\$3.0 M external funding) with a common focus on cell signaling in health and disease.
- 1) **Federal funding** – 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 delivery of 100% of M1 and M2 of the BSOM Wright Curriculum! NCBP faculty members direct five and teach in all seven basic science modules throughout these two years.
 - 2) **Ph.D. education/training** – NCBP faculty 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!
 - 3) **M.S. degree programs** – Direct/deliver three, self-paying M.S. programs training ~35% 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.
 - 4) **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 6th 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.
- E. Awards/Honors:** NCBP faculty members received **six** teaching/mentoring/faculty awards, including three of eight President’s Awards recipients. NCBP faculty members won the Trustees’ Award for Faculty Excellence in two of the past three award cycles! 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) **Eric Bennett**, Trustees’ Award for Faculty Excellence
 - 2) **Thomas L. Brown**, BSOM Faculty Mentor Award
 - 3) **Michael Matott**, BSOM Faculty Development for Medical Student Education Award
 - 4) **Patrick Sonner**, Presidential Award for Outstanding NTE Faculty: Service
 - 5) **Clintoria Williams**, Presidential Award for Early Career Achievement
 - 6) **Mark Rich**, Teaching Excellence Award BSOM

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., 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 Assistant Professor		Understanding the role of post translational modifications in regulating cardiac and neuronal function
Sherif Elbasiouny, Ph.D., Associate Professor		Cellular mechanisms regulating neuronal excitability and motor system output
Kathrin Engisch, Ph.D., 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

Name and Academic Position	Clinical Interests	Research Interests
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		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
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., Associate Professor		Symptoms in a broad range of diseases including multiple sclerosis, traumatic brain injury, and various forms of neuropathy
Clintoria Williams, Ph.D., Assistant 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 21st 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 8130 Clinical Medicine
SMD 8170 Origins 2
SMD 8180 Human Architecture
SMD 8210 Beginning to End
SMD 8220/8225 Balance, Control and Repair
SMD 8590 Staying Alive
Wright Q small group facilitators

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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, United States Air Force, ISAA (contract #: 670480), P.I. Sherif Elbasiouny, (01/26/2019 to 10/31/2020) Total \$180000, Direct Current Year \$120000, Indirect Current Year \$60000, Total cost for entire grant period \$180000, 11% salary for Dr. Elbasiouny.

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. 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. Kozak, National Institute of Allergy and Infectious Diseases, TRPM7 and Cellular pH, P.I. Juliusz Ashot Koazk, (12/01/2019 to 11/30/2020), 33% 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 - National Institute for Neurological Diseases and Stroke, R01NS082354, Reduced Motoneuron Excitability in Sepsis, PI, M. Rich (7/1/2014- 6/30/2020).

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. 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.

PRIVATE FOUNDATIONS –Dr. Lober

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. Elbasiouny, IRAD (account #: 671030) , Generalization of ALS markers from multiple mouse models, P.I. Sherif Elbasiouny, (01/01/2020 to 06/30/2020) Total \$19653, Direct Current Year \$19653, Indirect Current Year \$0, Total cost for entire grant period \$19653.

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

Abdelaal AY, Mousa M, Gamal M, **Elbasiouny SM**, Eldawlatly S. A Classification Approach to Recognize the Firing of Spinal Motoneurons in Amyotrophic Lateral Sclerosis, 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Montreal, QC, Canada, 2020, 3680-3683, 2020.

Alexander KE, Estep JR, and **Elbasiouny SM**. Effects of neuronal shutter observed in the EEG alpha rhythm', eNeuro, 7(5), eNeuro.0171-20.2020, 2020.

Beesetty P, Rockwood J, Kaitsuka T, Zhelay T, Hourani S, Matsushita M, **Kozak JA**. Phagocytic activity of splenic macrophages is enhanced and accompanied by cytosolic alkalization in TRPM7 kinase-dead mice. FEBS Journal (In press).

Chugh D, Iyer CC, Wang X, Bobbili P, **Rich MM**, Arnold WD. Neuromuscular junction transmission failure is a late phenotype in aging mice. Neurobiol Aging, 86, 182-190, 2020.

Deardorff AS, Romer SH, **Sonner PM**, Fyfe REW. Swimming Against the Tide: Investigations of the C-bouton Synapse. Frontiers in Neural Circuits, 8, 175-191, 2020.

Dupont C, Novak K, Denman K, Myers JH, Sullivan JM, Walker PV 2nd, Brown NL, Ladle DR, Bogdanik L, Lutz CM, Voss A, Sumner CJ, **Rich MM**. TRPV4 Antagonism Prevents Mechanically Induced Myotonia. *Ann. Neurol.*, 88, 297-308, 2020.

Dupont C, Novak K, Denman K, Myers JH, Sullivan JM, Walker PV 2nd, Brown NL, Ladle DR, Bogdanik L, Lutz CM, Voss A, Sumner CJ, **Rich MM**. TRPV4 antagonism prevents mechanically-induced myotonia. *Annals of Neurology*, 88, 297-308, 2020.

Ednie AR and **Bennett ES**. Intracellular O-linked glycosylation directly regulates cardiomyocyte L-type Ca²⁺ channel activity and excitation-contraction coupling. *Basic Res Cardiol*, 115(6), 10.1007/s00395-020-00820, 2020.

Elbasiouny SM and Mousa M. Morphologically-detailed Cellular and Pool Motoneuron Models, In: *Encyclopedia of Computational Neuroscience* (Jaeger D, Jung R, eds). Springer-Verlag Berlin Heidelberg: SpringerReference (www.springerreference.com). , 2020.

Eshed-Eisenbach Y, Devaux J, Vainshtein A, Golani O, Lee S-L, Feinberg K, Sukhanov N, Greenspan DS, **Susuki K**, Rasband MS, Peles E. Precise spatiotemporal control of nodal Na⁺ channel clustering by bone morphogenetic protein-1/tolloid-like proteinases. *Neuron*, 106, 806-815, 2020.

Fangusaro, F., Witt, O., Driever, P.B., Blag, A.K., de Blank, P., Kadom, N., Kilburn, L., **Lober, R.M.**, Robison, N.J., Fisher, M.J., Packer, R.J., Poussaint, T.Y., Papusha, L., Avula, S., Brandes, A.A., Bouffet, E., Bowers, D., Artemov, A., Chintagumpala, M., Zurakowski, D., van den Bent, M., Bison, B., Yeom, K.W., Taal, W., Warren, K.E. (2020). Response assessment in paediatric low-grade glioma: recommendations from the Response Assessment in Pediatric Neuro-Oncology (RAPNO) working group. *Lancet Oncol* 21(6):e305-e316. PMID: 32502457.

Ham DJ, Bšrsch A, Lin S, ThŸrkauf M, Weihrauch M, Reinhard JR, Delezie J, Battilana F, Wang X, Kaiser MS, Guridi M, Sinnreich M, **Rich MM**, Mittal N, Tintignac LA, Handschin C, Zavolan M, RŸegg MA. The neuromuscular junction is a focal point of mTORC1 signaling in sarcopenia. *Nature Communications*, online, 2020.

Hanes AL, Koesters A, Fong M-F, Altimimi HF, Stellwagen D, Wenner P, and **Engisch KL**. Divergent Synaptic Scaling of Miniature EPSCs Following Activity Blockade in Dissociated Neuronal Cultures. *J Neuroscience*, 40, 4090-4102, 2020.

Highlander MM, Allen JM, **Elbasiouny SM**. Meta-analysis of biological variables impact on spinal motoneuron electrophysiology data. *J Neurophysiology*, 123 (4), 1380-91, 2020.

Housley SN, Nardelli P, Powers RK, **Rich MM**, Cope TC. Chronic defects in intraspinal mechanisms of spike encoding by spinal motoneurons following chemotherapy. *Exp Neurol* , online, 2020.

Matott MP, Hasser EM, Kline DD. Sustained Hypoxia Alters nTS Glutamatergic Signaling and Expression and Function of Excitatory Amino Acid Transporters. *Neuroscience* (In press).

Mellott, A, Rockwood J, Zhelay T, Luu CT, Kaitsuka T, **Kozak, JA**. TRPM7 channel activity in Jurkat T lymphocytes during magnesium depletion and loading: implications for divalent metal entry and cytotoxicity. *Pflugers Archiv European Journal of Physiology*, 472, 1589-1606, 2020.

Metzger S, Dupont C, Voss AA, **Rich MM**. Central Role of Subthreshold Currents in Myotonia. *Annals of Neurology*, 87, 175-83, 2020.

Miranda DR, Reed E, Jama A, Bottomley M, Ren H, **Rich MM**, Voss AA. Mechanisms of altered skeletal muscle action potentials in the R6/2 mouse model of Huntington's disease. *Am J Physiol Cell Physiol*, 319, C218-C232 , 2020.

Mousa MH and **Elbasiouny SM**. Dendritic distributions of L-type Ca²⁺ and SKL channels in spinal motoneurons: A simulation study', *J Neurophysiology*, 124 (4), 1285-1307, 2020.

Parmelee D, Trout M, Overman I, **Matott M**. 12 TIPS for Implementing Peer Instruction in Medical Education. *MedEdPublish*, 9, 237, 2020.

Petralia, F., Tignor N, Reva, B., et al., **Lober, R.M.**, et al. (51 of 88 authors) (2020) Integrated proteogenomic characterization across major histological types of pediatric brain cancer. *Cell* 25:S0092-8674(20)31451-3. PMID: 33242424

Quon, J.L., Bala, W., Chen, L.C., Wright, J., Kim, L.H., Han, M., Shpanskaya, K., Lee, E.H., Tong, E., Iv, M., Seekins, J., Lungren, M.P., Braun, K.R.M., Pouissant, T.Y., Laughlin, S., Taylor, M.D., **Lober, R.M.**, Vogel, H., Fisher, P.G., Grant, G.A., Ramaswamy, V., Vitanza, A., Ho, C.Y., Edwards, M.S.B., Cheshier, S.H., Yeom, K.W. (2020). Deep learning for pediatric posterior fossa tumor detection and classification: a multi-institutional study. *Am J Neuroradiol AJNR*. August 13 [Epub ahead of print]. PMID: 32816765

Quon, J.L., Han, M., Kim, L.H., Koran, M.E., Cheng, L.C., Wright, J., Ramaswamy, V., **Lober, R.M.**, Taylor, M.D., Grant, G.A., Cheshier, S.H., Kestle, J.R.W., Edwards, M.S.B., Yeom, K.W. (2020) Artificial intelligence for automatic cerebral ventricle segmentation and volume calculation: a clinical tool for the evaluation of pediatric hydrocephalus. *J Neurosurg Pediatr*. Dec 1[Epub ahead of print]. PMID:33260138

Ragas M, **Corbett AM**, Dharmadhikari S, Nagarajan D, Davis C, Johnson T, Verma, N. Targeting the Forelimb Motor Cortex in Middle Aged Rats with Endothelin-Induced Stroke. *JoVE* (In press).

Rich MM, Housley SN, Nardelli P, Powers RK, Cope TC. Imbalanced Subthreshold Currents Following Sepsis and Chemotherapy: A Shared Mechanism Offering a New Therapeutic Target? *Neuroscientist*, online, 2020.

Sulehria T, **Corbett AM**, Sharma N, Nagarajan D, Abushamma A, Johnson A, Gagle S. Increasing Progenitor Cell Proliferation in the Sub-Ventricular Zone: A Therapeutic Treatment for Progressive Multiple Sclerosis? *Recent Patents in Drug Delivery & Formulation*.

Wang X, Burke SRA, Talmadge RJ, Voss AA, **Rich MM**. Depressed neuromuscular transmission causes weakness in mice lacking BK potassium channels. *J Gen Physiol*, 152, online, 2020.

Book Chapters

Halm D. Physiologic influences of transepithelial K secretion, Ion Channels and Transporters of Epithelia in Health and Disease, 2nd edition, 2nd edition, 57 pp, 2020.

Published abstracts

Posters

Rockwood J, Beesetty P, Matsushita M, **Kozak JA**. EFFECTS OF TRPM7 KINASE INACTIVATION IN MACROPHAGES. *Biophysical Society 64th Annual Meeting, San Diego* 02/15/2020 - 02/19/2020.

Smith M, Witkowska M, Bottomley M, **Kraszpulski M**. Blackcap (*Sylvia atricapilla*) versus reed warbler (*Acrocephalus scirpaceus*) ♂ behavioral comparison. *26th Animal Behavior Conference, Bloomington, IN* 03/26/2020.

Howard C, Witkowska M, Bottomley M, **Kraszpulski M**. The effects of Sparrowhawk (*Accipiter nisus*) calls on the behavior of their Blackcap (*Sylvia atricapilla*) prey. , *26th Animal Behavior Conference, Bloomington, IN* 03/26/2020.

Symposia/Platform

Ohio Miami Valley Chapter of the Society for Neuroscience Professional Development Workshop, Non-Academic Careers, 12/11/2020, Online via Zoom. (**P. Sonner**, Session Chair)

63rd Annual Biological Safety Conference, Session X: Richard Knudsen Award and Hot Topic, Virtual. (**D. Wooley**, Session Chair)

Healthy Heaven Club, Nutrition and Exercise (**N. Ritucci**)

Grant Reviews

- E. Bennett**, NSF Engineering Research Center (NSF-ERC) Proposal, Site Visit team member, CELL-MET
E. Bennett, Grant proposal, Ad Hoc Reviewer, NSF, Physiological Mechanisms and Biomechanics Program, Division of Integrative Organismal Systems
E. Bennett, Grant proposal, Ad Hoc Reviewer, Deutsche Forschungsgemeinschaft (German Research Foundation)
T. Brown, Grant Proposal, As study section member, ZRG1 EMNR-D (02), SEP-Endocrinology, Metabolism and Reproductive Biolo (1)
S. Elbasiouny, Grant Proposal, Ad Hoc Reviewer, Israel Science Foundation (1)
D. Ladle, Grant Proposal, Ad Hoc Reviewer, NIH CSR ZRG1 F02B D20 Study Section (1)
D. Ladle, Grant Proposal, Ad Hoc Reviewer, NIH CSR ZRG1 MDCN-G special emphasis panel (1)
D. Mayes, Grant Proposal, As study section member, Peer Reviewed Medical Research Program (PRMR) (1)
K. Susuki, Grant Proposal, Ad Hoc Reviewer, The executive government agency of National Science Centre in Poland (Narodowe Centrum Nauki - NCN; <http://www.ncn.gov.pl>) (1)
K. Susuki, Grant Proposal, Ad Hoc Reviewer, The review panel, 2019 Defense Medical Research and Development Program on the Regenerative Medicine Focused Research-1 (RMFR-1) of the Department of Defense (7)

Manuscript Reviews

- E. Bennett**, Journal Manuscript, Ad Hoc Reviewer, Journal of General Physiology (2)
E. Bennett, Journal Manuscript, Ad Hoc Reviewer, Journal of Molecular and Cellular Cardiology (1)
N. Bigley, Journal Manuscript, Ad Hoc Reviewer, Viral Immunology (2)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, American Journal of Physiology - Endocrinology and Metabolism (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, American Journal of Physiology Φ Gastrointestinal and Liver Physiology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer American Journal of Physiology Φ Heart and Circulatory Physiology (1)
T. Brown, Journal Manuscript, Ad Hoc Review, American Journal of Physiology-Cell Physiology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Apoptosis (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Biochemical Journal (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Biology of Reproduction (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Breast Disease (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Dr. Brown, Cancer Science (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Cell Biology International (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Cell Death and Differentiation (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Clinical Cancer Research (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Dr. Brown, Developmental Biology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Dr. Brown, Differentiation (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Experimental Cell Research (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Dr. Brown, FASEB Journal (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, FEBS Letters (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Frontiers in Bioscience (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Histochemistry and Cell Biology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Animal Science (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Biological Chemistry (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Cancer Research and Therapeutics (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Cell Death (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Cell Science (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Developmental Biology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Journal of Endocrinology (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Leukemia (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Mitochondrion (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Nature Communications (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Nature Scientific Reports (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Pediatric Research (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Placenta (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Proceedings of the National Academy of Sciences (PNAS) (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Scandinavian Journal of Rheumatology (1)

T. Brown, Journal Manuscript, Ad Hoc Reviewer, Scientific Reports (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Stem Cells and Development (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, The Open Stem Cell Journal (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, The Scientist (1)
T. Brown, Journal Manuscript, Ad Hoc Reviewer, Trophoblast Research (1)
A. Ednie, Journal Manuscript, Ad Hoc Reviewer, Journal of Molecular and Cellular Cardiology (1)
S. Elbasiouny, Journal Manuscript, Ad Hoc Reviewer, Cells (1)
S. Elbasiouny, Journal Manuscript, Ad Hoc Reviewer, Journal of Neural Engineering (1)
S. Elbasiouny, Journal Manuscript, Ad Hoc Reviewer, PLoS One (1)
D. Halm, Journal Manuscript, Ad Hoc Reviewer, American Journal of Physiology, Gastrointestinal Physiology (2)
D. Halm, Journal Manuscript, Ad Hoc Reviewer, Biochemical Pharmacology (1)
D. Halm, Journal Manuscript, Ad Hoc Reviewer, Journal of Physiology (1)
A. Kozak, Journal Manuscript, Ad Hoc Reviewer, Cell Calcium (1)
A. Kozak, Journal Manuscript, Ad Hoc Reviewer, International Journal of Molecular Sciences (MDPI) (1)
A. Kozak, Journal Manuscript, Ad Hoc Reviewer, Science Bulletin (Elsevier) (1)
D. Ladle, Journal Manuscript, Ad Hoc Reviewer, Current Opinion in Physiology (1)
D. Ladle, Journal Manuscript, Ad Hoc Reviewer, eNeuro (1)
M. Matott, Journal Manuscript, Ad Hoc Reviewer, STAR Protocols (1)
D. Mayes, Journal Manuscript, Ad Hoc Reviewer, Aging (1)
D. Mayes, Journal Manuscript, Ad Hoc Reviewer, J. of Integrative Neuroscience (1)
D. Mayes, Journal Manuscript, Ad Hoc Reviewer, Molecular Carcinogenesis (1)
D. Mayes, Journal Manuscript, Ad Hoc Reviewer, Molecular Neurobiology (3)
K. Susuki, Journal Manuscript, Ad Hoc Reviewer, Cell Communication and Signaling (1)
K. Susuki, Journal Manuscript, Ad Hoc Reviewer, Computational and Structural Biotechnology Journal (1)
K. Susuki, Journal Manuscript, Ad Hoc Reviewer, Life (1)
K. Susuki, Journal Manuscript, Ad Hoc Reviewer, Molecular Brain (1)
K. Susuki, Journal Manuscript, Ad Hoc Reviewer, PLoS Biology (1)
C. Williams, Journal Manuscript, Ad Hoc Reviewer, American Journal of Physiology, Cell Physiology (1)
C. Williams, Journal Manuscript, Ad Hoc Reviewer, American Journal of Physiology, Renal Physiology (1)
C. Williams, Journal Manuscript, Ad Hoc Reviewer, Journal of the American Society of Nephrology (1)

Editorial Board

T. Brown, Journal Manuscript, As member of editorial board, Journal of Developmental Biology (1)
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, Dalimonte, Rueb, and Stoller, LLP; Washington D.C./San Diego, CA
T. Brown, David Ladle, Associate Professor, WSU, NCBP
T. Brown, Hongmei Ren, Assistant Professor, WSU, Biochemistry and Molecular Biology
T. Brown, Madhavi Kadakia, Professor and Chair, WSU, Biochemistry and Molecular Biology
T. Brown, Thomas Jansson, Professor, University of Colorado- Denver, CO
B. Severt, John Thomas, Science Olympiad Team
D. Wooley, Western Institutional Review Board/IBC Services

6 Summary of Service Activities

Student advising

Student Research Committees

E. Bennett, BMS dissertation committee, Ryan Rakoczy
E. Bennett, BMS dissertation committee, Adaku Ume
E. Bennett, BMS dissertation committee, Philip Walker
N. Bigley, Student Research Committee, Bryce Anderson
N. Bigley, Student Research Committee, Michele Miller
N. Bigley, Student Research Committee, Miliban Bhakta
N. Bigley, Student Research Committee, Tracy Twamasi
N. Bigley, Student Research Committee, Valerie Benedict
T. Brown, Student Research Committee, Venicia Alhawach
T. Brown, Student Research Committee, Clayton Allex-Buckner
T. Brown, Student Research Committee, Bhakta Milliben
T. Brown, Student Research Committee, Feras Deek
T. Brown, Student Research Committee, John Miller
T. Brown, Student Research Committee, Chris Waker
S. Elbasiouny, Student Research Committee, Ryan Thompson.
S. Elbasiouny, Student Research Committee, Chein Poon
S. Engisch, BMS, BMS Dissertation Committee Ryan Rakoczy
D. Halm, BMS, Thesis Committee for Alexander Gordon.
D. Halm, BMS, Thesis Committee for Daniel Miranda
A. Kozak, Student Research Committee, Yakshkumar Rathod
D. Ladle, Student Research Committee, Alex Nguyen
D. Ladle, Student Research Committee, Bahir Al-Anbari
D. Ladle, Student Research Committee, Joshua Krech
D. Ladle, Student Research Committee, Parker Vaughan
D. Ladle, Student Research Committee, Delaney Grant
D. Mayes, Student Research Committee, Tahir Amin Sulehria
P. Sonner, Student Research Committee, Alex Nguyen
P. Sonner, Student Research Committee, Bahir Al Anbari
P. Sonner, Student Research Committee, Christine Kinstedt
P. Sonner, Student Research Committee, Parker Vaughan
K. Susuki, Student Research Committee, Hasan Farid
K. Susuki, Student Research Committee, Matthew Murphy
K. Susuki, Student Research Committee, Parker A. Vaughan
K. Susuki, Student Research Committee, Christiana Draper
D. Wooley, Student Research Committee, Darlington Abrefa
D. Wooley, Student Research Committee, Payachana Chareunsouk
D. Wooley, Student Research Committee, Rita Amediavor
C. Wyatt, Student Research Committee, Amber Castellanos
C. Wyatt, Student Research Committee, Alayna Mellott

Undergraduate Students

E. Bennett - 1
T. Brown - 6
D. Ladle – 5
D. Mayes – 1
N. Ritucci – 50
B. Severt – 50
P. Sonner – 99 (Spring Semester); 107 (Fall Semester)
C. Wyatt – 2

Graduate Students

E. Bennett - 2
N. Bigley – 13
T. Brown - 3
S. Elbasiouny – 5
A. Kozak – 3
B. Kraszpulska – 36
D. Ladle – 5
N. Ritucci – 5
B. Severt – 4
K. Susuki – 3
C. Wyatt – 3
D. Wooly – 5

Boonshoft School Medicine (M.D.)

M. Rich - 2
K. Susuki - 1

GRADUATING STUDENTS IN 2020

ANATOMY (COURSE)

Alazmi, Mohammad Sulaiman
Almadaoji, Asmaa
Huntsberger, Shana
Kearfott, John
Shewhart, Katelyn
Ward, Kenneth

ANATOMY (THESIS)

Al-Anbari, Bahir Rami. *Characterization of Parvalbumin and Nxp1 Expression In Lumbar Dorsal Root Ganglia By In Situ Hybridization.* **David Ladle**

Castellanos, Amber. *The role of IGF-1 in geriatric skin.* Michael Kemp

Forino, Andrew. *Determining Effects of PAF-R and Anti-Hypertensive Drugs Mediated Microvesicle Particle Release in Modulating Anti-Tumor Response of Lung Cancer.* Ravi Sahu

Murphy, Matthew. *Investigating the effects of CyPPA on Small-Conductance Calcium-Activated Potassium Channels in SOD1-G93A Transgenic Mouse Model of ALS.* **Sherif Elbasiouny**

Nguyen Alex. *Characterization of B3galt2 and Heg1 Expression in Dorsal Root Ganglia Neurons.* **David Ladle**

Otonello, Dominique. *Impact of Passive Range of Motion Exercises and Stretching in Knee Osteoarthritis Pain During Walking.* Andrew Froehle

Shaw, Weston. *Discovery and Characterization of Pathways Involved in FUS and TDP43-Induced Toxicity in Yeast.* Shulin Ju

Vaughan, Parker. *Electrophysiology of Optic Nerves in Methylglyoxal Treated Mice.* **David Ladle**

PHYSIOLOGY AND NEUROSCIENCE (COURSE)

Oxner, Alexander

PHYSIOLOGY AND NEUROSCIENCE (THESIS)

Almufleh, Auroabah. Exploring the impact of affective processing on visual perception of large-scale spatial environments. **Assaf Harel**

Farid, Hasan. *Protocol Development and Optimization for rNLS Mouse Model Characteristic Assessment.* **Sherif Elbasiouny**

Mellott, Alayna. *Divalent metal cation entry and cytotoxicity in Jurkat T cells: Role of TRPM7 channels.* **Ashot Kozak**

Mzozoyana, Mavuso. *Artificially-Generated scenes demonstrate the importance of global properties during early scene perception.* **Assaf Harel**

MICROBIOLOGY AND IMMUNOLOGY (THESIS)

Amediavor, Rita Laryea. *The Persisting Threats of Cholera: A Cyclical Public Health Problem in Ghana.* **Nancy Bigley**

Bhakta, Mimiben Anandbhai. *Potential Role of AhR in Antibody Production.* **Courtney Sulentic**

MICROBIOLOGY AND IMMUNOLOGY (NON-THESIS)

Attikple, Tracy

Chareunsouk, Payachana

Committee membership/officer [indicate if committee chair]

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

Admissions Committee (**G. Nieder, B. Kraszpuska**)

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

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

Beginning to End Steering Committee (**T. Brown, M. Matott**)

Boonshoft School of Medicine Leadership Academy (**C. Williams**)

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

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

Faculty Curriculum Committee Assessment and Evaluation Subcommittee (**B. Kraszpuska, T. Brown**)

Faculty Curriculum Committee Integration Subcommittee (**M. Matott**)

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

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

Foundations Curriculum Committee (**M. Matott, G. Nieder**)

Human Architecture Steering Committee I & II (**G. Nieder, B. Kraszpuska**)

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

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

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

Peer Instruction Review Committee (**M. Matott**)

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

Scholarship and Sponsored Research Committee (**K. Susuki**)

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

Team Based Learning Review Group Committee (**M. Matott**)

Wright Curriculum TBL Review Committee (**M. Matott, G. Nieder**)

Wright Q Review Committee (**M. Matott**)

College of Science and Mathematics Committee Memberships

Academic Mediation Committee (**N. Ritucci**)
Ad Hoc Senate Committee for Intellectual Property (**A. Corbett**)
ASK Program Committee (**P. Sonner, C. Williams**)
Chairs and Directors Council (**E. Bennett, D. Ladle**)
Faculty Development Committee (**A. Corbett**)
Graduate Academic Policies Committee (**B. Kraszpulska**)
Graduate Committee (**K. Engisch, B. Kraszpulska**)
Graduate Studies Committee (**C. Wyatt**)
Information Technology Committee (**A. Kozak**)
Institutional Animal Care and Use Committee (**A. Corbett**)
Petitions Committee (**B. Severt, Chair**)
Research Forum – Increasing Underrepresented Minority Success Subcommittee (**M. Matott**)
Retention Forum on Coaching and Mentoring Committee (**B. Severt**)
Scholarship Committee (**P. Sonner, C. Wyatt**)
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**)
Admission Committee (**S. Elbasiouny, Chair, K. Susuki**)
Curriculum Committee (**D. Halm**)
Nominating Committee (**K. Susuki, A. Kozak, K. Susuki, C. Williams**)
BMS Student Association (BMSS) (**A. Kozak**)

Neuroscience, Cell Biology and Physiology Committee Memberships

Advisory Committee (**A. Corbett, Chair, B. Kraszpulska, D. Ladle, G. Nieder, P. Sonner**)
Annual Evaluation and Assessment Subcommittee (**B. Kraszpulska Chair, N. Bigley, D. Wooley, D. Ladle**)
NCBP Education Committee (**B. Kraszpulska, Chair, M. Kraszpulski, G. Nieder, M. Matott, B. Severt, N. Ritucci, A. Corbett, C. Wyatt**)
Promotion and Tenure Committee (**A. Corbett Chair, D. Halm, B. Kraszpulska, A. Kozak, D. Ladle, M. Rich**)

Microbiology and Immunology Committee Memberships

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

College of Engineering and Computer Science

BME Program Committee (**S. Elbasiouny**)
Director of Neuroengineering Education and Research (DONER) (**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**)
Graduate Policies Committee of the Senate (**G. Nieder, D. Wooley**)
Graduate Faculty Status Committee (**M. Matott**)
Master's Program in 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 (**A. Corbett, P. Sonner**)
Faculty Senator Representing COSM, 2015-present (**D. Wooley**)
Faculty Senate Working Group (**P. Sonner**)
Graduate Curriculum (**D. Wooley**)
Graduate Faculty Committee (**A. Corbett, D. Wooley**)
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**)
Library Faculty Advisory Board (**B. Severt**)
Outside Interest Committee (**D. Mayes**)
Racial Equality Task Force (**K. Engisch**)
Radiation Safety Committee: Vice Chair (**A. Corbett**)
Summer Working Group OER Resolution (**B. Severt**)
University, Faculty Budget Priorities Committee of the Faculty Senate (**E. Bennett**)
Write It Up! (**C. Williams**)
Wright State University Outside Interest Group (**D. Mayes**)
University Academic Integrity Hearing Panel (**N. Bigley**)
University Faculty Senate, CoSM Representative (**A. Corbett**)
University International Education Advisory Committee (**M. Kraszpulski**)
University Judicial Panel (**N. Bigley**)
University Petition Committee (**B. Severt**)
University Scholarship and Sponsored Research Committee (SSRC) (**T. Brown, Chair**)
University's Student Conduct Panel (**B. Severt**)
University's Student Success Committee (**B. Severt**)
University Undergraduate Curriculum Committee (**P. Sonner**)

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 Programing Committee (**D. Halm**)
American Physiological Society, Cell Section Steering Committee (**D. Halm**)
American Physiological Society, Renal Section Awards Committee (**C. Williams**)
Biophysical Society, Bethesda, MD (**A. Kozak**)
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 for Neurochemistry (ASN) YIEE Award Committee (**D. Mayes**)
American Society for Neurochemistry (ASN) YIEE Young Investigator (**D. Mayes**)
American Society of Nephropathy (**C. Williams**)
Biological Agent Containment Working Group – Centers for Disease Control and Prevention (**D. Wooley**)
Board of Scientific Counselors for the Centers for Disease Control and Prevention (**D. Wooley**)
Council on the Kidney in Cardiovascular Disease (KCVD) Leadership Committee (**C. Williams**)
International Alzheimer's & Dementia Conference Organizing Committee (**D. Mayes**)
NIH Recombinant DNA Advisory Committee (**D. Wooley**)
Human Anatomy and Physiology Society Committee – Cadaver Usage (**B. Kraszpulska, B. Severt**)
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 Kids for Creativity/Destination Imagination Appraiser & Rising Stars (**D. Mayes**)
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**)

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Patient Care Summary

Mark M. Rich, M.D., Ph.D. – 180 ambulatory visits in 2020

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Honors and awards [Faculty or staff]

Trustees' Award for Faculty Excellence (**E. Bennett**)

Presidential Award for Outstanding NTE Faculty: Service (**P. Sonner**)

Presidential Award for Early Career Achievement (**C. Williams**)

Teaching Excellence Award BSOM (**M. Rich**)

Boonshoft School of Medicine Faculty Mentor Award (**TL Brown**)

Boonshoft School of Medicine Faculty Development for Medical Student Education Award (**M. Matott**)

9

Hosted events

January 31, 2020 – Christopher G. Janson, M.D., Wright State University, Dayton, OH, Macromolecular transport across meningeal barriers and its significance for neurodegenerative diseases.

February 7, 2020 – Andrea Romani, M.D., Ph.D., Case Western Reserve University School of Medicine, Cleveland, OH, Magnesium deficiency in liver cells: at the crossroads between inflammation and dysmetabolism.

February 14, 2020 – Michael Matott, Ph.D., Wright State University, Dayton, OH, Under pressure: how the nucleus tractus solitarius (nTS) responds to hypoxia.

February 21, 2020 – Francisco Alvarez, PhD., Emory University School of Medicine, Atlanta, GA, Spinal cord interneuron diversity, an embarrassment of riches.

March 13, 2020 – Cristina Caldari, Ph.D., Denison University, Granville, OH, Modulation of adipose tissue-derived meta-inflammation by essential fatty acids.

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Other information

Outreach programs

HAPI Lab (**T. Brown, B. Kraszpuska, 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. Kraszpuska, 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. Kraszpuska, B. Severt**)

Destination Imagination (**D. Mayes**)

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. Kraszpuski**)

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

Student clubs and activities

Ohio Summer Institute (**N. Ritucci, Co-Director**)

College of Science and Math Anatomy Club, (**B. Kraszpuska, Advisor**)

Boonshoft School of Medicine Gastronomy Club (**B. Kraszpuska, 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**)