Boonshoft School of Medicine
WRIGHT STATE UNIVERSITY

Department of Neuroscience, Cell Biology and Physiology

Annual Report

2015

Christopher Wyatt, Ph.D.
Associate Professor

For the period including
January 1, 2015 — December 31, 2015

1 Statement from the Chair/Associate Dean

2015 saw the departure of Dr Tim Cope as NCBP Chair and the appointment of Dr Chris Wyatt as interim Chair. A successful search for a new permanent Chair was conducted and 2016 will see the appointment of Dr Eric Bennett as NCBP Chair. Dr Wyatt will return to his laboratory and continue his research and educational mission.
2015 was a stable year for NCBP with multiple faculty receiving external funding and many laboratories successfully publishing their data. The NCBP educational mission continues, with multiple NCBP faculty supporting student education within BSoM and CoSM.

Of particular pride for the department were the faculty members receiving awards in 2015.

The Faculty Excellence Award, Southwestern Ohio Council for Higher Education (SOCHE) **(S. Elbasiouny)**

The Early Career Achievement Award, Wright State University **(S. Elbasiouny)**

Boonshoft School Medicine Teaching Excellence Award for 2014-2015 **(L. Ream)**

Boonshoft School Medicine Innovation in Medical Education **(M. Rich)**

The NCBP Department will continue to provide research, education and service support to BSoM in 2016. Critical basic science support will be provided during the broad curriculum changes within BSoM. It is essential that NCBP faculty are used as content experts during the restructuring of the medical course. Without this support medical education will suffer enormously in BSoM.

2 Programs/Divisions

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

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

Name and Academic Position	Clinical Interests	Research Interests
Nancy Bigley, Ph.D., Full Professor		Herpes simplex virus, interferons and signaling pathways
Thomas Brown, Ph.D., Full Professor		Cell death; Differential and development
Timothy Cope, Ph.D., Full Professor		Spinal cord synaptic plasticity; Motor systems
Adrian Corbett, Ph.D., Associate Professor		Excitation-concentration coupling; Sodium channel subtypes; Brain neurogenesis
Sherif Elbasiouny, Ph.D., Assistant Professor		Cellular mechanisms regulating neuronal excitability and motor system output
Kathrin Engisch, Ph.D., Associate Professor		Neurotransmitter release
Robert Fyffe, Ph.D., Full Professor		Cellular and synaptic neuroscience
Melvyn Goldfinger, Ph.D., Associate Professor		Theoretical neuroscience
Dan Halm, Ph.D., Associate Professor		Epithelial physiology; Secretory signal transduction
J. Ashot Kozak, Ph.D., Associate Professor		Ion transport pathways in T lymphocytes, Calcium signaling
Barbara Kraszpulska, Ph.D., Associate Professor		Medical and graduate education; Gross Anatomy
Michal Kraszpulski, Ph.D., Instructor		Graduate education, Neuroscience
Debra Mayes, Ph.D., Assistant Professor		Metabolism; tight junction; gap junction; Calcium signaling; neurodegeneration, neuropsychiatric disease and behavior; blood brain barrier, vascular pathology/hypertension/aneurysms,

Name and Academic Position	Clinical Interests	Research Interests
		bone, tumorigenesis; reactive oxygen; antioxidant; Neurofibromatosis Type 1; Multiple Sclerosis; Alzheimer's Disease; Autism; MRI/DTI/MRS; epilepsy; GABA; stress & cell death; nutrition; stress responses & exercise
Gary Nieder, Ph.D., Full Professor		Medical and graduate education; Educational technology
Robert Putnam, Ph.D., Full Professor		Central respiratory control; Cell signaling; Neuroscience
Larry Ream, Ph.D., Associate Professor		Medical and graduate education; Histology
Mark Rich, M.D., Ph.D., Full Professor	Neurology	Synaptic plasticity; Critical illness myopathy
Nick Ritucci, Ph.D., Lecturer		Undergraduate and Medical education; Physiology
Bridgett Severt, M.S., Lecturer		Undergraduate education; Anatomy
Patrick Sonner, Ph.D., Instructor		Undergraduate and Graduate education; Neuroscience
Keiichiro Susuki, M.D., Ph.D., Assistant Professor		Symptoms in a broad range of diseases including multiple sclerosis, traumatic brain injury, and various forms of neuropathy.
Dawn Wooley, Ph.D., Associate Professor		Virology, HIV-1, AIDS; Biosafety; Biodefense
Christopher Wyatt, Ph.D., Associate Professor		Cellular mechanisms of oxygen sensing

4 Teaching

Baccalaureate [any course for a bachelor's degree]

ANT 2100 Human Anatomy and Physiology I

ANT 2100L Human Anatomy and Physiology I Lab

ANT 2120 Human Anatomy and Physiology II

ANT 2120L Human Anatomy and Physiology II Lab

ANT 3100 Human Structure and Function I

ANT 3100L Human Structure and Function I Lab

ANT 3120 Human Structure and Function II

ANT 3120L Human Structure and Function II Lab

ANT 4340 Biological Safety

ANT 4880 Independent Reading Anatomy

ANT 4990 Selected Topics in Anatomy

ANT 5100 Advanced Human Structure and Function I

ANT 5100L Advanced Human Structure and Function I Lab

ANT 5120 Advanced Human Structure and Function II

ANT 5120L Advanced Human Structure and Function II Lab

BIO 4990 Special Problems in Biology

M&I 4260 Immunology

M&I 4310 Virology

M&I 4750 Pathogenic Mechanisms

NCP 3330 Neuroscience Today

P&N 4420 Introductory Neurophysiology

P&N 4880 Independent Reading – Physiology

P&N 4990 Special Problems in Physiology

PSY 2910 Drugs and Behavior

PSY 4940 Animal Behavior Capstone

SM 1010 Scientific Literacy for the 21st Century

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

ANT 6340 Biological Safety

ANT 6990 Special Problems in Anatomy

ANT 7000 Human Anatomy Instruction

ANT 7010 Selected Topics in Anatomy

ANT 7020 Anatomical Techniques

ANT 7110 Human Gross Anatomy

ANT 7150 Advanced Human Embryology

ANT 7210 Human Microanatomy

ANT 7310 Human Neurobiology

ANT 8000 Anatomy Seminar

ANT 8110 Comprehensive Anatomy

ANT 8500 Scholarly Project

ANT 8600 Principles of Biomedical Research

ANT 8990 Anatomy Research

M&I 6750 Pathogenic Mechanisms

M&I 7260 Immunology

M&I 7310 Virology

M&I 7770 Gene Therapy

M&I 8000 Microbiology and Immunology Seminar

P&N 6100 Human Physiology

P&N 6420 Introductory Neurophysiology

P&N 6500 Glial Cell Physiology

P&N 6690 Quantitative Aspects of Membrane Transport

P&N 6990 Special Problems in Physiology

P&N 7010 Selected Topics in Physiology

P&N 7010 Breakthroughs in Neuroscience & Physiology

P&N 7220 Ion Channels

P&N 7750 Neuroscience and Physiology

P&N 7760 Intercellular Communications

P&N 7920 Mechanisms of Cell Death

P&N 8000 Physiology Seminar

P&N 8080 Neuroscience Seminar

P&N 8600 Principles in Biomedical Research

P&N 8990 Physiology Research

PSY 6940 Animal Behavior Capstone

PTX 7300 Cellular Pharmacology and Toxicology

Undergraduate medical education [medical school]

SMD 510 Human Structure

SMD 543 Cardiovascular

SMD 551 Hematology

SMD 552 Respiratory

SMD 553 Digestive

SMD 554 Renal

SMD 560 Medical Neuroscience

SMD 561 Endocrine

SMD 563 Musculoskeletal/Integument

SMD 572 Cells, Tissue and Organ Systems

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

Graduate medical education [residents, fellows]

Oxygen-sensing by the carotid body: development and pathological modulation during obesity., Case Western Reserve University, Titus Group, Department of Pediatrics, Cleveland, OH, 10/22/2015 **(C. Wyatt)**.

Continuing medical education [grand rounds, seminars]

A Breath of Fresh Air: Placental Oxygen Regulation, Pregnancy-Induced Hypertension and Preeclampsia, Wright State University Boonshoft School of Medicine, Department of Neuroscience, Cell Biology and Physiology, Dayton, OH, 11/04/2015 **(T. Brown).**

Prolonged Expression of Placental-Specific HIF1 alpha Alters Trophoblast Differentiation and Triggers Pregnancy-Induced Hypertension, Wright State University Boonshoft School of Medicine, Department of Neuroscience, Cell

Biology and Physiology, Dayton, OH, 01/23/2015 **(T. Brown).**

Other

It's all About the Little Babies, March of Dimes Miami Valley Board of Trustees, Dayton, OH, 11/10/2015 **(T. Brown)**.

NIH Grant Writing: Strategies for Funding Success, Wright State University Faculty Leadership Academy, Dayton, OH, 11/17/2015 **(T. Brown).**

Neuroengineering: a career journey, The BME Student Society at Wright State University, Tait Conference Room, Russ 405, 04/09/2015 **(S. Elbasiouny)**.

The Neuro Engineering, Rehabilitation and Degeneration Lab, Perkins Will Neuroscience Symposium, The NEC Building, Wright State University, 05/19/2015 **(S. Elbasiouny)**.

Modulation of the Blood Brain Barrier, Wright State University Department of Biochemistry, WSU, Dayton OH, 04/16/2015 **(D. Mayes)**.

Regulation of the Blood Brain Barrier, NCBP Department Seminar Series, Wright State University, Dayton OH, 01/30/2015 **(D. Mayes)**.

Anatomy Presentation, Kettering College PA Program, Wright State University, 07/22/2015 **(B. Severt)**.

Cadaver Workshop, Wright State's Student Sports Medicine Workshop, Wright State University, Dayton, OH, 10/23/2015 **(B. Severt)**.

Hands On Anatomy Lab, Wright State's Pre-College Forensic Science Camp, Wright State University, 07/30/2015 **(B. Severt)**.

HAPI Lab: Human Anatomy and Physiology Interactive Lab, Community Outreach, Wright State University, Dayton, OH, 1/16/2015 - 11/13/2015 **(B. Severt)**.

Preparing for Anatomy in Science Olympiad, Centerville's Science Olympiad Team, Wright State University, 11/17/2015 **(B. Severt)**.

Sports Medicine Workshop, Miami University Sports Medicine, Wright State University, Dayton, OH, 04/23/2015 **(B. Severt)**.

STEMM: Exploring Human Anatomy, Exploring STEMM, Wright State University, 06/22/2015 - 06/30/2015 **(B. Severt)**.

Surviving the first year, New Faculty Orientation, Wright State University, 08/25/2015 **(B. Severt)**.

How to Prepare & Present a Scientific Poster, STREAMS and BioStar, Wright State University 141 Med Sci, 07/13/2015 **(P. Sonner)**.

We're going to have F.U.N. (Flipped Undergraduate Neuroscience), Neuroscience, Cell Biology, and Physiology departmental Research Dinner, Beavercreek Golf Club, 03/17/2015 **(P. Sonner)**.

Spectrum-based cytoskeleton modulates neuron-glia interaction., Seminar, Department of Biochemistry and Molecular Biology, Wright State University, Dayton, OH, 1/23/2015 **(K. Susuki)**.

5 Scholarly Activity

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

Extramural – Active, **Thomas L. Brown,** DHHS, NIH – Center for Scientific Review, AMPK alpha Knockdown Inhibits Placenta Differentiation and Development in Vivo, 04/01/15-03/31/16.

Extramural – Active, **Thomas L. Brown**, DHHS, National Institute of Child Health and Human Development, HIF-1 Alpha Regulation of Trophoblast Differential in vivo, 03/01/15-02/29/16, $304.715.

Extramural – Active, **Thomas L. Brown**, Premier Health Partners, Genotypic Analysis of Preclampsia Biomarkers, 11/07/14-11/06/15, $30,000.

Extramural – Active, **Thomas L. Brown**, DHHS, National Institute of Child Health and Human Development, HIF-1 Alpha Regulation of Trophoblast Differentiation in vivo, 03/01/15-02/28/16, $137.240.

Extramural – Active, **Timothy C. Cope and Mark M. Rich**, DHHS, NIH, Center for Scientific Review, Developing Therapy for Sensory Deficits in CIPN, 07/01/15-06/30/16, $370,000.

Extramural – Active, **Timothy C. Cope**, NSF, Miscellaneous, Collaborative Research: Simple Models of Proprioceptive Mechanical Encoding Before and After Sensory Loss, 06/01/15-05/31/16, $170.637.

Extramural – Active, **Timothy C. Cope, Mark M. Rich, Robert E.W. Fyffe**, DHHS, National Institute of Neurological Disorders and Stroke, 03/01/15-02/28/16, $919,884.

Extramural – Active, **Adrian M. Corbett,** Audrey E. McGowin, Michael Markey, DHHS National Institute on Aging, Evaluating Changes in Alzheimer's Diseae and a possible Drug treatment with a combination of Genomics, Proteomics and Immunofluorescence, 07/01/16-06/30/17, $374, 965.

Extramural – Active, **David R. Ladle**, DHHS, National Institute of Neurological Disorders and Stroke, Mechanisms of Reciprocal Inhibition Development, 9/01/15-08/31/16, $319,375.

Extramural – Active, **Debra A. Mayes**, DHHS, NIH – Center for Scientific Review, Metabolic Modulation of the Blood Brain Barrier, 09/30/15-09.10/16, $300,000.

Extramural – Active,**Debra A. Mayes**, Klingenstein (Ester A & Joseph) Fund, 07/01/15-06/30/16, $75,000.

Extramural – Active, **Mark M. Rich**, Research Institute at Nationwide Children's Hospital, Role of Pofut1 in the Coordinated Aging of Skeletal Muscle and the Neuromuscular Junction, 09/01/15-08/31/16, $66,600.

Extramural – Active, **Mark M. Rich**, DHHS, National Institute of Neurological Disorders and Stroke, Reduced Motoneuron Excitability in Sepsis, 07/01/15-06/30/16, $325.632.

Extramural – Active, **Mark. M. Rich** and **Robert E.W. Fyffe**, Georgia Tech Research Corporation, Synaptic Function: Effects of the Nerve injury and Altered Activity, 06/01/15-02/29/16, $310,448.

Extramural – Active, **Christopher N. Wyatt**, Galleon Pharmaceuticals, An Investigation of the Effects of Putative Respiratory Stimulant Compounds on Isolated Rat Carotid Body Type I Cells, 06/01/15-08/31/15, $37,074.

Publications [List each publication only once; do not list manuscripts in press. List only publications from the year covered by this report.]

Papers in refereed journals

Balch MHH, Ragas MA, Wright D, Hensley A, Reynolds K, Kerr B, and **Corbett AM**. Appropriate Timing of Fluoxetine and Statin Delivery Reduces the Risk of Secondary Bleeding in Ischemic Stroke Rats', Journal of Neurology and Neuroscience, 6, 29-36, 2015.

Barnes BT, Confides AL, **Rich MM**, Dupont-Versteegden EE. Distinct muscle apoptotic pathways are activated in muscles with different fiber types in a rat model of critical illness myopathy, Journal of Muscle Research and Cell Motility , 36, 243-253, 2015.

Bigley NJ. Putative Roles of SOCS1: SOCS 3 Ratios n Development and Resolution of a Herpesvirus Lesion, J. Cell. Signal, 1, 2015.

Corbett AM, Sieber S, Wyatt N, Lizzi J, Flannery T, Sibbit B, and Sanghvi S. Increasing Neurogenesis with Fluoxetine, Simvastatin and Ascorbic Acid Leads to Functional Recovery in Ischemic Stroke, Recent Patents on Drug Delivery and Formulation, 9, 158-166, 2015.

Friedrich O, Reid MB, Van den Berghe G, Vanhorebeek I, Hermans G, **Rich MM**, Larsson L. The Sick and the Weak: Neuropathies/Myopathies in the critically ill - Cellular Mechanisms of complex Disease Entities in the ICU, Physiological Reviews, 95, 1025-109, 2015.

Jiang MC, **Elbasiouny SM**, Collins WF 3rd, Heckman CJ. The transformation of synaptic to system plasticity in motor output from the sacral cord of the adult mouse', J. Neurophysiology, 114(3), 1987-2004, 2015.

Jurcsisn JG, Rye RL, Ali J, Barr BL, **Wyatt CN**. The CamKK inhibitor STO609 causes artefacts in Ca2+ imaging and inhibits KCa in mouse carotid body type I cells, Adv Exp Med Biol, 860, 17-24, 2015.

Keoni C and **Brown TL**, Inhibition of apoptosis and efficacy of pancaspase inhibitor, Q-VD-OPh, in models of human disease, Journal of Cell Death, 8, 1-7, 2015.

McGovern VL, Massoni-Laporte A, Wang X, Le TT, Le HT, Beattie CE, **Rich MM**, Burghess AHM. Plastin 3 Expression Does Not Modify Spinal Muscular Atrophy Severity in the 7 SMA Mouse, PLOS 1, 10, online, 2015.

Novak KR, Norman J, Mitchell JR, Pinter MJ and **Rich MM**. Sodium channel slow inactivation as a therapeutic target for myotonia congenita, Annals of Neurology, 77, 320-332, 2015.
Pye RL, Dunn EJ, Ricker EM, Jurcsisn JG, Barr BL, **Wyatt CN**. Acutely administered leptin increases [Ca2+]i and BKCa currents but does not alter chemosensory behaviour in rat carotid body type I cells, Adv Exp Med Biol, 860, 61-67, 2015.

Pye, RL, Dunn EJ, Ricker E M, Jurcsisn J G, Barr BL and **Wyatt CN**. Acutely administered leptin increases [Ca2+]i and BKCa currents but does not alter chemosensory behaviour in rat carotid body type I cells, Advances in experimental Medicine and biology. (In Press).

Ricker EM, Rye RL,. BarrBL, **Wyatt CN**. Selective mu and kappa opioid agonists inhibit voltage-gated Ca2+ entry in isolated neonatal rat carotid body type Icells, Adv Exp Med Bio, 860, 49-54, 2015.

Rinehart EM, Dixon DA, **Bigley NJ**. Identification of Nectin-1 and Herpes Virus Entry Mediator (HVEM) Receptors on Neuro-2A Cells in Development of a Co-culture System to Mimic Transduction of HSV-1 from Keratinocyte to Neuronal Cells, J Virol Techniques, 2015.

Susuki K and Kuba H. Activity-dependent regulation of excitable axonal domains, J Physiol Sci, 2015.

Susuki K, Otani Y, and Rasband MN, Submembranous molecular complex stabilizes nodes of Ranvier, Exp Neurol, 2015 (In Press).

Vincent JA, Nardelli P, Gabriel HM, Deardorff AS, **Cope TC**. Complex impairment of IA muscle proprioceptors following traumatic or neurotoxic injury, J. Ant, 227(2), 221-30, 2015.

Williams KJ, Benjamin C, Lewis D, **Bigley NJ**, Hussain S. Evidence for inhibition of Dengue virus binding in the presence of silver nanoparticles, J. Nanobiotech, 2015 (In Press).

Yoo S-W, Motary MG, **Susuki K**, Prendergast J, Mountney A, Hurtado A, and Schnaar RL. Sialylation regulates brain structure and function. FASEB J , 29, 3040-3053, 2015.

Books, chapters, reviews

Ion Channels and Transporters of Epithelia in Health and Disease; Chapter 3: Physiologic influences of transepithelial K secretion (**D. Halm**)

Posters, Platforms

A computational model of temperature dependent intracellular pH regulation, EB 2015, Boston, MA 03/28/2015 - 04/01/2015, S.A. Contreras, M.C. Quintero, **R.W. Putnam**, J.M. Santin, L.K. Hartzler and J. M Cordovez, (Poster).

A preliminary ionic current model for central chemosensitive neurons, EB 2015, Boston, MA 03/28/2015 - 04/01/2015, M.C. Quintero, J. M. Cordovez and **R.W. Putnam**, (Poster).

Aldosterone and b-adrenergic activation of colonic K+ secretion requires BK channels (KCa1.1), Experimental Biology 2015, Boston MA 03/28/2015 - 04/01/2015. S Halm and **D Halm**, (Poster).

Aldosterone and b-adrenergic activation of colonic K+ secretion requires BK channels (KCa1.1), Ohio Physiological Society Annual Meeting, University of Toledo, Toledo, Ohio 10/17/2015. S.T. Halm and **D.R. Halm**, (Poster).

Aldosterone and b-adrenergic signaling for K secretion in distal colonic mucosa converge at membrane trafficking, Society of General Physiologists 69th Annual Meeting: Macromolecular Local Signaling Complexes, Marine Biological Laboratory, Woods Hole, MA 09/16/2015 - 09/20/2015. S. Halm and **D.R. Halm**, (Poster).

AMPK knockdown in placental labrynthine progenitor cells results in altered differentiation and restriction of critical energy resources, Wright State University Research Scholarship Forum, Dayton, OH 04/10/2015. A. Waker, R.L. Pye, R.E. Albers, S.R. Doliboa, **C.N. Wyatt, T.L. Brown, D.A. Mayes**, (Poster).

AMPK knockdown in Placental Labryonthine Progenitor Cells Results in Altered Differentiation and Restriction of Critical Energy Resources. Wright State University Celebration of Research, WSU, Dayton OH 04/10/2015, C.W. Waker, R.L. Pye, R.E. Albers, S.A. Doliboa, C.N. Wyatt, T.L. Brown, & D.A. Mayes, (Poster).

Analysis of proprioceptive sensory afferent inputs on populations of spinal interneurons in neonatal mice, Annual Meeting of the Society for Neuroscience, Chicago, IL 10/17/2015 - 10/21/2015, **D.R. Ladle**, B. Gosky, T. Rapetti, P. Painter, Y. Dai, (Poster).

Debates Combination of Team-based Learning with the Flipped Class Approach. Teaching for Student Success Symposium: Reducing the Achievement Gap, , Dayton, OH 08/25/2015, **M. Kraszpulski**, (Platform).

Development of educational research project regarding the impact of paper color on studentsÕ exam performance. , Teaching for Student Success Symposium: Reducing the Achievement Gap, Dayton, OH 8/25/2015, **M. Kraszpulski**, (Poster).

Distinct morphological and biochemical changes are associated with the early stages of blastogenesis in murine T lymphocytes, Celebration of Research, Scholarship and Creative Activities, Wright State University (abstract)., Dayton 04/10/2015. J. Gibson, and **J. A. Kozak**, (Poster).

Effects of inactivation of TRPM7 kinase sctivity on its channel activity in mice, Biophysical Society 59th Annual Meeting Abstracts., Baltimore, MD 02/07/2015 - 02/11/2015. T. Kaitsuka, C. Katagiri, P. Beesetty, K. Nakamura, S. Hourani, K. Tomizawa, K., **J. A. Kozak**, M. Matsushita, (Poster).

Effects of intracellular pH on synaptic transmission: Differences in evoked and spontaneous release., Society of Integrative and Comparative Biology, West Palm Beach, Florida 01/03/2015 - 01/07/2015, R.L. Cooper, Z.R. Majeed, C. Malloy, S.L.E. Blumich, W.-Y. Chung and **R.W. Putnam**, (Poster).

Factors influencing the inclination of whole body and organ donation among medical students, 29th Annual Conference of Human Anatomy and Physiology Society, San Antonio, TX 05/23/2015 - 05/28/2015. **B. Kraszpulska**, (Poster).

Factors influencing the inclination of whole body and organ donation among medical students, Central Research Forum, WSU BSOM, Dayton, OH 10/22/2015, **B. Kraszpulska**, (Poster).

Glial betaII spectrin stabilizes nodal and paranodal molecular organization, Society for Neuroscience, Chicago, IL 10/17/2015 - 10/21/2015, **K. Susuki**, D. R. Zollinger, K.-J. Chang, C. Zhang, C.-R. Tsai, Y. Liu, and M. N. Rasband, (Poster).

Lentiviral Gene Targeting, Wright State University Research Scholarship Forum, Dayton, OH 04/10/2015. M. Kaufman, R. Albers, and **T.L. Brown**, (Poster).

Measuring the acute effects of leptin on isolated neonatal rat carotid body type I cells. Midwest Graduate Research *Symposium, University of Toledo, March 2015. Selected Oral Presentation O29., Midwest Graduate Research Symposium, University of Toledo, Toledo, OH 03/21/2015, R.L. Pye, E. Dunn, E.M. Ricker, J.G. Jurcsisn, B.L. Barr and* **C.N. Wyatt**, (Platform).

Mechanical stress disrupts neuron-glia interactions at nodes of Ranvier., The 58th Annual Meeting of the Japanese Sciety for Neurochemistry, Omiya, Japan 9/11/2015 - 9/13/2015, Y, Otani, L. M. Yermakov, and **K. Susuki**, (Poster).

Metabolic Characterization of MPNST Cell Lines. Children's Tumor Foundation International Meeting, Monterey, CA 06/06/2015 - 06/10/2015, C.W. Waker, S. El-Amouri, and **D.A. Mayes**. (Poster).

Metabolic Characterization of MPNST Cell Lines. Wright State University Celebration of Research, WSU, Dayton OH 04/10/2015, C.W. Waker, S. El-Amouri, and **D.A. Mayes**, (Poster).

Multidisciplinary development of an undergraduate neuroscience program., First Annual Teaching for Student Success Symposium: Reducing the Achievement Gap, Wright State University 08/25/2015, **P. M. Sonner,** (Poster).

Placental-Specific Hypoxia Inducible Factor 1 alpha as a Model of Preeclampsia, International Federation of Placental Associations (IFPA), Brisbane, Australia 08/09/2015. R.E. Albers, M.R. Kaufman, C. Keoni, M. Hughes, B. Natale, D. Natale, and **T.L. Brown**, (Poster).

Placental-Specific Prolonged Activity of Hypoxia-Inducible Factor 1 alpha (HIF-1): A Mouse Model of Preeclampsia, Wright State University Research Scholarship Forum, Dayton, OH 04/10/2015. R.E. Albers, M.R. Kaufman, C. Keoni, S. Doliboa, M. Hughes, B. Natale, D. Natale, and **T.L. Brown**, (Poster).

Reduced Motoneuron excitability in Sepsis, Neuroscience, Chicago, IL 10/17/2015 - 10/21/2015, P. Nardelli, **T.C. Cope, M.M. Rich**, (Poster).

Single-cell Na+ flux assay for measurement of TRPM7 channel activity, Biophysical Society 58th Annual Meeting Abstracts, San Francisco, CA 02/07/2015 - 02/11/2015. S. Hourani, P. Beesetty, M. Matsushita and **J. A. Kozak**, (Poster).

Stroke Physical Rehabilitation: Impact on Motor Functional Recovery in Drug-Treated versus Vehicle-Treated Rats, 2015 International Stroke Conference, Nashville, Tennessee 02/11/2015 - 02/13/2015. M. Ragas, M. Balch, A. Hensley, K. Reynolds, D. Wright, B. Kerr and **A.M. Corbett**, (Poster).

The Impact of Paper Color on StudentsÕ Exam Performance. Teaching for Student Success Symposium: Reducing the Achievement Gap, , Dayton, OH 8/25/2015, **M. Kraszpulski** and J. Jones, (Poster).

TRPM7 channel activity in transgenic mice lacking TRPM7 kinase activity, Ohio Physiological Society Annual Meeting Abstracts, Toledo, OH 10/29/2015. P. Beesetty, M. Matsushita and **J.A. Kozak**, (Poster).

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

Adrenergic Regulation of Intestinal Ion Secretion, Cystic Fibrosis Data Conference, Division of Pulmonary Medicine and Gastroenterology, University of Cincinnati, Cincinnati, Ohio, 09/14/2015 **(D. Halm)**.

Metabolic Regulation of the BBB, The Department of Biology; Clemson University, Clemson SC, 02/27/2015 - 02/28/2015 **(D. Halm)**.

Molecular mechanisms of myelinated nerve formation and injury, Joint meeting of the Japanese Association of Anatomies and the Physiological Society of Japan, Kobe, Japan, 3/21/2015 - 3/23/2015 **(K. Susuki)**.

Molecular mechanisms of myelinated nerve formation and injury, Seminar at the Neuroscience Center, Brigham Young University, Provo, UT, 11/19/2015 **(K. Susuki)**.

Challenges in detecting viral vector sequences in animal excretions, Midwest Area Biosafety Network, Webinar, 04/16/2015 **(D. Wooley)**.

Viral Vector Technology and Risk Assessment, ABSA International, Webinar Series, 09/21/2015 - 09/25/2015 **(D. Wooley)**.

Virus against virus: A novel gene-therapy-based approach toward treating HIV infection, Miami University, Oxford, OH, 02/25/2015 **(D. Wooley)**.

Don't Hold Your Breath: The Acute Hypoxic Ventilatory Response. The Henry M. Jackson Foundation, Aerospace Toxicology Program, Wright Patterson Airforce Base, WPAFB, OH, 6/24/2015 **(C. Wyatt)**.

Consultantships [sponsor activity]

T. Cope to Dr. Huub Maas
T. Cope to Dr. Marie-Pascal Cote
T. Cope to Georgia Tech
T. Cope to Georgia Tech
T. Cope to Hiltsje Smilde

T. Cope to Kyle Blum and Lina Ting, Georgia Tech visitors

Other recognition [e.g. editorships, reviewer awards]

Editorial Board Memberships

American Journal of Physiology **(A. Kozak)**
American Journal of Physiology, Cell Physiology **(T. Brown, D. Halm)**
Experimental Brain Research **(T. Cope)**
Experimental Neurology **(M. Rich)**
Journal of Applied Physiology **(R. Putnam)**
Journal of Cell and Molecular Biology **(N. Bigley)**
Journal of Cell Signaling **(N.Bigley)**
Journal of Comparative Neurology **(T. Cope)**
Journal of Developmental Biology **(T. Brown)**
Journal of Neurophysiology **(T. Cope)**
Journal of Neuroscience **(T. Cope)**
Journal of Physiology (London) **(T. Cope)**
Neurorehabilitation & Neural Repair **(T. Cope)**
Physiological Reports **(R. Putnam)**
The Journal of Cell Death **(T. Brown)**
The Open Stem Cell Journal **(T. Brown)**
Trends in Neuroscience **(T. Cope)**

Granting agency study section memberships

Boonshoft School of Medicine Research Committee **(T. Cope)**
Cancer Research Associates **(D. Wooley)**
National Institutes of Health - NICHD Pregnancy and Neonatology Section **(T. Brown)**
National Institutes of Health **(C. Wyatt)**
National Institutes of Health CSR, NDPR Study Section **(D. Ladle)**
National Institutes of Health WPNRC Special Emphasis Panel **(T. Brown)**
NIH CSR, NCF Study Section **(D. Ladle)**
Welcome Trust **(D. Halm)**
Wright State University College of Science and Math **(T. Brown)**

Offices held in national professional organizations

Ohio Physiological Society (Chapter of American Physiological Society), Treasurer **(D. Halm)**

Scientific Program Committee, American Biological Safety Association, Chair **(D. Wooley)**

Outreach programs

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

Horizons in Medicine **(G. Nieder)**

STEMM: Exploring Human Anatomy An Interactive Anatomy Lab Experience **(L. Ream, B. Kraszpulska, B. Severt)**

STREAMS. This program is funded by the National Institutes of Health to encourage members of under-represented minority groups and students with disabilities to choose careers in cardiovascular-related research.

(**R. Putnam and S. Elbasiousny**, **P. Sonner** mentored students and **R. Putnam** is a program admissions committee member.)

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

Student clubs and activities

Operation Smile WSU – WSU chapter of Operation Smile which works to provide life-saving cleft palate and cleft lip surgeries to children in need throughout the world. (**N. Ritucci**)

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

National Science Olympiad (**C. Wyatt**)

6 Summary of Service Activities

Student advising

Undergraduate student research direction

Gibson, Jennifer **(A. Kozak)**

Rodarte, Casandra **(A. Kozak)**

Graduate students

Doctoral - Thesis

Deardorff, Adam S. *Regulation of Motoneuron Firing Properties: Intrinsic and Circuit-Based Mechanisms.* **R. Fyffe**

Pye, Richard L. *Measuring the Acute Physiological Effects of Leptin in the Carotid Body.* **C. Wyatt**

Romer, Shannon Hunt. *The Organization of Kv2.1 Channel Proteins in the Membrane of Spina lMotoneurons: Regulation by Injury and Cellular Activity.* **R. Fyffe**

Anatomy Master – Thesis

Jaggers, Robert M. *Evaluating the Biocompatibility of a Material that is an Integral Part of a Totally Implantable and Sustainable Hearing Aid (TISHA) Device in the Mouse Cochlea.* **R. Goldenberg**

Magee, Corin W. *Efficacy of Mastery-Based and Autonomy-Supportive Neuroanatomy Curriculum in Graduate Level Human Neurobiology Course.* **D. Ladle**

Rapetti, Todd J. *Connectivity of Monosynaptic Ia afferents on Renshaw Cells in Neonatal Mice.* **D. Ladle**

Ricker, Ellen M. *The Inhibitory Effects of Opioids on Voltage-Gated Calcium Influx in Neonatal Rat Carotid Body Type I Cells.* **C. Wyatt**

Xanthos, Evan D. *Angiotensin-II Receptor Blocker and Its Effect on Depressive-Like Behavior During Maternal Separation.* **D. Hennessy**

Anatomy Master – Non-thesis

Beam, Austin (Anatomy MS, course option): **Advisor: L. Ream**

Bostic, Matthew (Anatomy MS, course option): **Advisor: L. Ream**

Danis, Victoria (Anatomy MS, course option): **Advisor: L. Ream**

Eduafo, Augusta (Anatomy MS, course option): **Advisor: L. Ream**

Hopkins, Jerry (Anatomy MS, course option): **Advisor: L. Ream**

Larkin, Jennifer (Anatomy MS, course option): **Advisor: L. Ream**

Mauer, Ellen (Anatomy MS, course option): **Advisor: L. Ream**

Shukrullah, Muhammad Zafar (Anatomy MS, course option): **Advisor: L. Ream**

Smith, Trista (Anatomy MS, course option): **Advisor: L. Ream**

Sulehria, Tahir (Anatomy MS, course option): **Advisor: L. Ream**

Tran, Jenny (Anatomy MS, course option): **Advisor: L. Ream**

Physiology & Neuroscience Master – Thesis

Dunn, Eric J. *Effect of Somatostatin on Voltage-Gated Calcium Influx in Isolated Neonatal Rat Carotid Body Type I Cells.* **C. Wyatt**

Gabriel, Hanna M. *Correlations Between Sensory Encoding and Central Morphology of Muscle Proprioceptors in the Rat.* **T. Cope**

Huges, Saline R. *Effect of Sleep Deprivation on Performance in a Water Radial Arm Maze (WRAM) Task.* **R. Jankord**

Jackson, Mark P. *The Effect of Scalp Tissue on Current Shunting during Anodal Transcranial Direct Current Stimulation (tDCS).* **R. Jankord**

Waker, Christopher A. *Metabolic Characterization of MPNST Cell Lines*. **D. Mayes**

Wieczerzak, Krystyna, B. *Senorimotor Analysis of Oxalipatin Treated Rats*. **T. Cope**

Willen, Regina M. *Factors Determining the Effects of Human Interaction on the Cortisol Levels of Shelter Dogs.* **M. Hennessy**

Microbiology & Immunology Master – Thesis

Al Kamal, Nasrah Ali. *Immunotherapy for human breast cancer.* **N. Bigley**

Alajman, Amal Fahad. *Comparing Antibody-Coated Immune Beadds with Flow Cytometry to Measure β-2 Microglubulin+ Murine Spleen Cells.* **N. Bigley**

Almutariri, Mubarak H. *The Imact of HSV-1 Infection, SOCS1 peptide, a nd SOCS3 peptide mimetic on Cell Viability, Morphology and Cytoskeleton Proteins of Unpolarized and Cytokine-Polarized M1 RAW 264.7 Murine Macrophages*. **N. Bigley**

Sharma, Hanoor. *Identification of Protein-Protein Interactions of Amyotrophic Lateral Sclerosis Associated Protein TDP-43.* **N. Bigley**

Subahi, Riham Abbas. *Changes in Cytoskeleton Proteins in HSV-1 Infection of J774A.1 Macrophage Phenotype.* **N. Bigley**

Committee membership/officer [indicate if committee chair]

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

Admissions Committee **(G. Nieder, B. Kraszpulska, R. Putnam)**
Biennium 1 Subcommittee of the Faculty Curriculum Committee **(A. Corbett, L. Ream, G. Nieder, M. Rich, N. Ritucci)**
Biennium One Electives Subcommittee **(B. Kraszpulska)**

Cells, Tissues, and Organ Systems Content Committee **(L. Ream, Chair, A. Corbett, M. Rich)**
Curriculum Change (Doctoring) **(C. Wyatt Co-Chair)**
Human Structure Steering Committee **(G. Nieder, Chair, B. Kraszpulska)**
Medical School Curriculum Reform Committee **(M. Rich)**
Neurology Executive Committee **(T. Cope)**
Neuroscience Institute Physician Council **(T. Cope)**
Neuroscience Institute Fourth Annual Symposium Planning Committee **(M. Rich, Chair)**
Neuroscience Institute Steering Committee **(M. Rich, Chair)**
Nomination Committee **(L. Ream)**
Research Committee **(C. Wyatt)**
Respiratory Steering Committee **(N. Ritucci)**
Strategic Planning Focus Committee – Education **(B. Kraszpulska)**
Student Appeals Committee **(G. Nieder)**
WrightCurriculum Task Force - Meaningful Clinical Experiences Subgroup **(G. Nieder)**

Biomedical Sciences Committee Memberships

Admissions Committee (**C. Wyatt, Chair)**
Curriculum Committee **(A. Corbett, D. Halm, A. Kozak)**
Five Year External BMS Review Committee **(T. Brown)**
Integrative Biology and Toxicology Area **(D. Wooley)**
Nominating Committee **(D. Ladle, C. Wyatt)**
Program Planning Review Committee **(C. Wyatt)**

Neuroscience, Cell Biology and Physiology Committee Memberships

Activities and Accomplishments **(D. Wooley)**
Advisory Committee **(A. Corbett, Chair, B. Kraszpulska, D. Ladle, L. Ream)**
Annual Evaluation Screening Committee **(L. Ream, Chair, N. Bigley, M. B. Kraszpulska, Rich, C. Wyatt)**
Cell signaling search committee **(C. Wyatt, Chair)**
Promotion and Tenure Committee **(R. Putnam, Chair, D. Halm, G. Nieder)**
Sensorimotor Integration (SMI) **(C. Wyatt)**
Neuroimmunology Group (**T. Brown, Chair, N. Bigley**)

Wright State University

Academic Policies Committee **(C. Wyatt)**
Board of Directors, Academy of Medicine **(T. Cope)**
Exploratory Committee, Ph.D. Program Development in Math and Physics **(T. Brown)**
Institutional Biosafety Committee **(D. Ladle)**
LACUC Institutional Laboratory Animal Care and Use Committee **(C. Wyatt, Chair, T. Brown, Interim Vice Chair, M. Rich, D. Ladle)**
LACUC Investigative Subcommittee **(T. Brown)**
Neuroscience Institute Translation Research Group **(T. Cope)**
Radiation Safety Committee **(A. Corbett)**
Research Conduct and Ethics Investigative Committee **(T. Brown)**
Search Committee for Ohio Scholars **(T. Cope)**
University Parking Committee **(D. Wooley)**

Wright State University College of Science and Mathematics

Curriculum Committee **(N. Ritucci)**
Mediation Committee **(D. Halm)**
Promotion and Tenure Committee **(D. Halm, G. Nieder)**
University College Academic Standing Review and Appeals Committee **(B. Kraszpulska)**
Women in Science Giving Circle Committee **(A. Corbett, B. Kraszpulska)**

Microbiology & Immunology Committee Memberships

Admissions Committee of M&I Graduate Program **(N. Bigley, T. Brown)**

Wright State Graduate School

Curriculum Subcommittee of Graduate Studies Committee **(L. Ream, Chair)**
Graduate Directors Council **(L. Ream)**
Graduate Studies Committee **(L. Ream)**

Hospital or affiliated institution [Premier Health Partners]

Premier Health Partners Neuroscience Steering Committee **(M. Rich)**

National

American Biological Safety Association **(D. Wooley)**
NIH Recombinant DNA Advisory Committee **(D. Wooley)**
Promotion and Tenure Ad Hoc Reviewer for the University of California San Diego **(R. Putnam)**
Scientific Program Committee, **(D. Wooley)**

7 Patient Care Summary

Mark Rich, M.D., Ph.D. – 180 ambulatory visits in 2015

8 Honors and awards [Faculty or staff]

The Faculty Excellence Award, Southwestern Ohio Council for Higher Education (SOCHE) **(S. Elbasiouny)**
The Early Career Achievement Award, Wright State University **(S. Elbasiouny)**
Boonshoft School Medicine Teaching Excellence Award for 2014-2015 **(L. Ream)**
Boonshoft School Medicine Innovation in Medical Education **(M. Rich)**
Boonshoft School of Medicine Class of 2016 Teaching Excellence Award, 2013-2014 **(N. Ritucci)**
College of Science and Mathematics Undergraduate Students Choice Award, 2015 **(N. Ritucci)**
2nd place for poster in Theme II: Learning innovations that span disciplines at the Teaching for Students Success Symposium at Wright State University **(P. Sonner)**

9 Hosted events [CME, etc.]

Fourth Annual Neuroscience Symposium, Breakthroughs in Neuroimaging
Science Olympiad

10 Other information