



# **Annual Report: Basic Science Department**

## **January 1, 2017-December 31, 2017**

Madhavi Kadakia, Ph.D.  
Professor and Chair

For the period including  
January 1, 2017 — December 31, 2017

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## Statement from the Chair/Associate Dean

In 2017, we had a total of 2 BMB admin staff, 14 Ph.D. students, 17 Master's students, 4 undergraduates, 3 post-docs and 5 research associates. Of the 31 graduate students, 13 students graduated by end of 2016 (5 Ph.D. and 8 Master's students).

BMB faculty received a total of 26 funded grants (national, local and internal) totaling \$1,652, 249 (\$1,152,504 in direct costs and \$499,744 in indirects costs).

BMB faculty reported a total of 26 manuscripts in 2017.

Students and faculty from the department presented a total of 29 posters and/or talks on their research at local forums (Central research forum, Celebration of Research, Women in STEMM institute forum, BMB Research Retreat, BMS research retreat held at WSU), and several national and international meetings. In addition, BMB faculty presented 11 invited talks which included research meetings.

Dr. Leffak organized the 19<sup>th</sup> Annual Midwest DNA Repair Symposium at WSU in 2017

In 2017, we have 19 majors enrolled in the BMB undergraduate program and 7 intending transfer students. A total of 12 BMB students are involved in research on campus or at AFRL (includes 4 sophomores, 5 juniors, and 3 seniors as of Fall 2018). Four of BMB undergraduates have been featured for their research, publications and/or awards.

BMB held a full day workshop to promote self-directed learning which was attended by all BMB faculty. We redeveloped BMB 4210 into a more active learning course with the help of an internal teaching Innovation grant. This grant also included funds for a day long workshop on active learning and BMB education by Dr. Jennifer Loertscher, an expert in the field.

In 2017, BMB faculty further developed Origins 1 module for the Wright curriculum. The SMD 8170 Origins 1 module, which covers the fundamentals of molecular biochemistry with reference to normal and disease states, had a highly successful debut in 2017. BMB faculty were heavily involved in curriculum planning beginning in 2014 with the Foundations Leadership Group (Dr. Paietta, co-chair) and ending with subsequent development of the module with the Origins 1 Module Committee. Origins 1 represents a newly designed module that is set-up entirely with engaged learning accomplished through peer instruction (PI) and team-based learning (TBL) modalities. The first run had outstanding student learning outcomes with all students passing the module. BMB faculty involved in various teaching roles include Dr. Paietta (Course Director, PI, TBL), Dr. Markey (TBL), Dr. Reo (PI, TBL) and Dr. Schmidt (PI, TBL).

In 2017, Dr. Leffak received the Outstanding Senior Faculty Award by Academy of Medicine, Wright State University. The Robert A. Weisman Graduate Student Achievement Award, received by Dr. Cambronero's student, Ramya Ganesan in 2017.

In August 2017, BMB held its annual BMB faculty retreat.

BMB faculty was involved in several outreach activities. BMB faculty was a speaker at an event hosted local American Cancer Society reception at Nutter Center. BMB faculty participated as a judge at the Montgomery County Science Day, Intel International Science and Engineering Fair and At the Miami Valley Career Technology center Biotechnology day held at WSU, Science Olympiad, 5/18/2017, located at WSU. BMB faculty participated in take Our Sons and Daughters To Work Day, 4/6/2017, This program is located at WSU

## 2 Programs/Divisions

Name of Division or Program	Director	Dates
M.S. in BMB.	Dr. John Paietta	Jan 1-2017-present
B.S. in BMB	Dr. Chad Campbell	Jan 1-2017-present

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

Name and Academic Position	Research Interests
<b>Dr. Cambroner</b>	<p>Our laboratory studies the molecular mechanisms underlying cell movement of blood leukocytes and cancer cells. We have a proven track record in the area of cell signaling for 17 years. Our efforts concentrate on the regulation of the signaling molecule phospholipase D (PLD) and we have become leaders in the field. We proved that the enzyme PLD2 is necessary for inflammation and leukocyte chemotaxis in seminal papers (Blood and FASEB J). We were the first group to explain how PLD2 biological activity is regulated, by discovering new molecular associations through SH2 domains with the signaling molecules Grb2, Sos and Rac2 (Oncogene, JMB, JBC and MCB). We have also provided the groundbreaking demonstration (PNAS; Cell Signaling, 2011) that a phospholipase can act as a GTPase exchange factor, GEF, and have mapped the enzymatic catalytic site (JBC, 2012; J Cell Science, 2013). Our team will continue to investigate the intracellular signaling hierarchy that controls chemotaxis. We are using a multi-disciplinary approach to do this, involving contemporary molecular, biochemical, genetic, cellular and physiological tools. Our long-term goal is to find ways (an inhibitor) to prevent the accumulation of leukocytes that cause chronic inflammation and tissue damage in the heart. In a 2nd line of research, we are applying our mechanistic understanding of cell migration to breast cancer cell invasion, with the ultimate goal of finding ways to prevent breast cancer metastasis in the lung (Oncogene, 2013). We have recently demonstrated the role of PLD in specific microRNAs involved in the Epithelial to Mesenchymal transition (EMT) in breast cancer cells (JBC, 2015, MCB, 2015).</p>

Name and Academic Position    Research Interests

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**Dr. Campbell**

This past year I have been the major contributor to the development of many courses in the BS in BMB program. I was the course director for Biochemistry and Molecular Biology I and II, BMB 1000: Freshman Seminar (Spring and Fall), BMB 2100: Introduction to Biochemistry, BMB 2000: Careers in BMB, BMB 3850: Biochemistry Laboratory and taught 4 lectures in BMB 3220: Biochem for Pre-Meds (Spring and Fall). This year I have taken on the role of BMB advisor guiding the transfer of students into our major and the reception of our first incoming Freshman Class. In Fall I was appointed the BMB undergraduate program director, responsible for program evaluation, development and administration. Additionally, I have also participated on various different committees at the departmental and college level and worked with the department chair in efforts related to undergraduate program marketing and BMB major social gatherings. Finally, I was also responsible for the redevelopment of BMB 4210 into a more active learning course via the appropriation of a TIG; in this effort I oversaw the visitation of Dr. Jennifer Loertscher who put on a full day workshop on active learning and BMB education.

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**Dr. Cho**

The Ras GTPases comprising three main isoforms H-, N- and K-Ras operate at the plasma membrane as molecular switches in essential signaling pathways. Approximately 15% of all human carcinomas have activating point mutations in RAS genes. Oncogenic K-Ras mutants are found in 90 percent of pancreatic, 45 percent of colorectal and 35 percent of lung cancers. Despite significant efforts to directly target Ras activity, no anti-Ras drugs have been developed and taken into the clinic. Since Ras proteins must be anchored to the inner leaflet of the plasma membrane for full biological activity, inhibition of K-Ras plasma membrane interaction is a valid therapeutic approach to abrogate oncogenic K-Ras activity. My research investigates molecular mechanisms of K-Ras interaction with the plasma membrane, and discovery of compounds and proteins that regulate K-Ras plasma membrane interaction. Such compounds and/or proteins may be a starting point to develop novel anti-cancer therapies that specifically target K-Ras-driven cancers.

From a high content cell-based screen of chemical and human siRNA libraries, I identified both exogenous and endogenous regulators of the K-Ras plasma membrane interaction. Three classes of compounds and a set of proteins that induce K-Ras dissociation from the plasma membrane were identified. The mechanisms, which reduced K-Ras signaling were:

(1) Increased K-Ras phosphorylation by the AMPK/eNOS/PKG pathway, and (2) perturbation of cellular phosphatidylserine (PS) distribution. Characterization of these novel mechanisms will provide new insight into K-Ras

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**Name and Academic Position    Research Interests**

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**Dr. Craig**

plasma membrane interactions, and form the basis of a novel approach to inhibit K-Ras plasma membrane interaction.

I obtained my BA in microbiology from Miami University in 1993, my MS in biological sciences in 2001, and my PhD in Systems Biology in 2015.

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**Dr. Kadakia**

My research program employs bench-based research that integrates clinical studies with the goal of translating biomedical research findings to the bed-side. My laboratory has focused on three areas of research. The first area is focused on identification of signaling pathways that play a role on cancer and development. We are studying the mechanism by which p53 family members, comprising of both oncogenes and tumor suppressors, are deregulated in non-melanoma skin cancer. Specifically, my laboratory has been studying the role of p53 family of proteins (p53, p63 and p73) either directly or via modulation of other proteins in development and progression of cancer. Regulation of vitamin D receptor (VDR) by p63 and p73 is another major focus in my laboratory. We are studying the feedback mechanisms by which VDR/Vitamin D signaling pathway regulates p63 and thereby affecting cell survival or inhibition of metastases. Other projects in the laboratory are focused on the effect of post-translational modifications of p63 on its biological function.

The second area of focus in my laboratory has been to identify biomarkers that can help differentiate different stages of cancer and in long term lead to personalized patient care. Towards this goal I have obtained grant funding to purchase state-of-the art, next-generation sequencing (NGS) tools as well as a high throughput, real time PCR machine which will aid in these studies. Developments in next generation sequencing (NGS) technology have revolutionized our understanding of the complexity of cellular gene expression. NGS provides a better understanding of the molecular mechanisms involved and is the most suitable approach to develop biomarker discovery pipelines. We will compare the differential expression of known microRNAs in tissue and plasma samples from patients with Barrett's esophagus (BE) and Esophageal adenocarcinoma (EAC) in order to identify circulating microRNA biomarkers for early detection of EAC. Endoscopy is currently the only way to diagnose BE and EA, so identification of noninvasive biomarkers is critical for the improvement of current screening tools and for the identification of patients at high risk for progression to cancer who will benefit from surveillance. We have also used NGS to identify microRNAs and mRNAs regulated by both VD3 and p63.

In addition, my laboratory has obtained funding from Ohio federal research network and Multi-university related research initiative from office of Naval research to study microRNA as biomarkers for motion disorders and High intensity training, respectively.

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**Name and Academic Position    Research Interests**

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**Dr. Leffak**

The work in our laboratory is built on our discovery of the human c-myc origin of DNA replication. There are currently two major project directions underway. The first is the identification of proteins that bind to the c-myc replication origin and the mechanism by which they promote the initiation of DNA synthesis. The second is the use of the c-myc replication origin in the design and genetic engineering of human cell models of disease (myotonic dystrophy type 1, Huntington disease, spinocerebellar ataxia type 10, polycystic kidney disease) caused by the instability of short, microsatellite DNA sequences.

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**Dr. Long**

Below are the personnel who have worked in the lab during 2017. We have been actively performing research projects as described below.

1. Weiwen Long, Ph.D., the Lab PI, has been training and supervising students and postdoctoral fellow on their research projects. In addition, the PI has also been conducting experiments for developing new research projects in the lab.
  2. Cheng Zhang, M.D., Research Assistant 2, joined the lab on April 1, 2015 and has been conducting a project about ERK3 in lung tumorigenesis and a project about ERK3's function in insulin secretion.
  3. Lobna Elkhadragey, a BMS Ph.D. graduate student, has been conducting projects on the molecular regulations of ERK3 gene expression and kinase activity in cancer cells.
  4. Hadel Mohammed A Alsaran, a Master student in BMB department, has been conducting a project on ERK3 gene mutations in cancer.
  5. Aldharee, Hitham Abdulrahman, a Master student in BMB department, joined the lab in October, 2015 and has been conducting a project about the interplay between ERK3 and RhoGDI/PAK signaling.
  6. Brian James Caprul, a Bio-star program undergraduate student, has been conducting a project on miRNAs regulated by ERK3 and their functions in cancer cell migration/invasion.
  7. Marion Morel, Postdoctoral Fellow, has been working on the regulation of ERK3 protein stability in cancers.
  8. Astha Shakya, a BMS Ph.D. student, is working on a project about the regulation of IL-6/Stat3 signaling pathway by ERK3.
  9. Amanda Kaye Myers, a BMS Ph.D. student, is working on a project about the role of ERK3 in regulating phospho-lipid signaling.
  10. Eid Alshammari, a BMB master student, is working on a project about the interplay of P63 and ERK3 in skin cancer.
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**Dr. Markey**

My research also involves several projects through my role as Director of the Center for Genomics Research. These include collaborative proposals and projects with several other laboratories and small businesses.

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**Name and Academic Position    Research Interests**

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	<p>Current projects include genotyping of human specimens to understand the role of germline variation in athletic performance and response to physical training, and determining the role of genotype and microRNA expression on susceptibility to motion sickness.</p>
<b>Dr. Paietta</b>	<p>A newly developing area of research in my laboratory is the identification and study of novel gene control elements termed riboswitches. In particular, we are examining the regulation of eukaryotic gene expression by riboswitches. Riboswitches, which are non-coding RNAs that selectively bind target molecules and alter gene expression levels by a variety of mechanisms, offer new opportunities for a variety of medical and biotechnology applications. In addition, we are continuing our work on the molecular genetic study of fungal sulfur metabolism. Our work involves the study of a complex control network of regulatory proteins that sense the level of sulfur and direct subsequent cellular responses.</p>
<b>Dr. Paliy</b>	<p>Areas of Research Interests:</p> <ul style="list-style-type: none"><li># Role of intestinal bacteria in human health and in gastrointestinal diseases such as IBD, IBS, and obesity.</li><li># Metabolic interactions in complex microbial communities.</li><li># Use of metabolic and mathematical modeling to study biological principles.</li></ul> <p>Methodologies used</p> <ul style="list-style-type: none"><li># Standard microbiology techniques</li><li># Standard molecular biology methods</li><li># Gene expression profiling with microarrays and qPCR</li><li># High-throughput sequencing and data analysis</li><li># Microbial community analysis by 16S RNA sequencing, phylogenetic microarrays, and FISH</li><li># Bioinformatics and computational biology</li><li># Biostatistics and phylogenetic analysis</li></ul>
<b>Dr. Ren</b>	<p>The goal of my research is to elucidate a pathway that controls the clearance of dysfunctional mitochondria (mitophagy) which could be manipulated to protect patients from muscle injury and age-related diseases. This application is an advancement of our recent discovery that lipin1 plays an intriguing role in mitophagy by maintaining mitochondrial integrity and function. We recently generated some unique mouse models including GFP-tagged lipin1-deficient LC3 transgenic mice, and skeletal muscle-specific lipin1 deficient mice. These unique mouse models can be used to monitor the autophagy/mitophagy process efficiently. We will determine the underlying mechanisms of lipin1 in regulating mitophagy and in the control of LPIN1-related rhabdomyolysis and muscle wasting.</p> <p>The second area of focus in my laboratory has been to examine the role of Lipin1 in regulating fate transdifferentiation of myogenic progenitors between skeletal muscle and adipose tissue. Our previous work in global lipin1 deficient (fld) mice demonstrate that lipin1 plays a major role</p>

**Name and Academic Position    Research Interests**

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in SM regeneration. Current work from our laboratory using newly generated cell type-specific mouse model, myf5-cre;Lipin1fl/fl conditional knockout (Lipin1myf5+KO) mice unequivocally shows that lipin1 is a major determinant of SM and adipose tissue development. The overall goal of this research is to identify biological mechanisms that regulate cell fate and transdifferentiation of the SM, BAT and WAT cell lineages. The results of this study should help in developing new strategies to improve SM metabolism and promote adipose browning for the treatment of obesity and metabolic syndrome.

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**Dr. Reo**

In general, my research interest is focused in the development and application of nuclear magnetic resonance (NMR) based metabolomics in biomedical research. Several projects strive to develop this technology as a tool to: (1) assess tissue function/dysfunction; (2) detect exposure to chemical toxicants and assess related health effects; and (3) diagnose health status and disorders of the intestinal tract. Metabolite profiles from blood serum, urine, fecal extracts, or tissue extracts are measured by NMR spectroscopy and correlated with other biological/biochemical indices. Multivariate data analyses and bioinformatics tools are used to help visualize, analyze, and interpret complex data, and relate or correlate this information to disease processes or toxicity.

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**Dr. Schmidt**

Miami University, Oxford, OH  
May 2012  
Ph.D. Chemistry and Biochemistry (Ann Hagerman, advisor)  
Dissertation Title: Tannins in Natural Soil Systems

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**Dr. Todd**

Amber Todd received an AS from Cottey College, a BA in biochemistry from Mount Holyoke College, and her Ph.D. in Biomedical Sciences from Wright State University. Her dissertation research focused on genetics education research at the high school level. She completed a postdoctoral fellowship at Wright State University focusing on educational assessment in genetics at the high school and college level. She has published multiple first author papers in peer-reviewed journals in the field of science education and presented at several international conferences. She is currently the Director of Assessment for the Office of Medical Education for the Boonshoft School of Medicine at Wright State University and is also an Adjunct Assistant Professor in the Department of Biochemistry & Molecular Biology at Wright State University.

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# 4 Teaching

## Graduate teaching

### Dr. Cambronero

#### **Spring 2017**

BMB-8990: Biochemistry Research, 7 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS-7600: Molecular Biology of Inherited Diseases, 9 credit hours, 14 students, 26 total contact hours (11 lecture hours, 15 non-contact hours), Team taught, Classroom course, Course Director: Dr. Michael Leffak, Taught 9 hours + 2 hours in the mock grant review session

SMD-521: CATOS, 5 credit hours, 110 students, 18 total contact hours (8 lecture hours, 10 non-contact hours), Team taught, Classroom course, Course Director: Dr. Larry Ream, 8 (5 lecture hours + 3 TBL microscopy on Blood direct supervision of students)

#### **Summer 2017**

BMB-9970: Lab Rotation Research, 4 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

#### **Fall 2017**

BMB-7530: Molecular Signaling, 4 credit hours, 11 students, 31 total contact hours (11 lecture hours, 20 non-contact hours), Team taught, Classroom course, Course Director: Course Director, Was course director and taught in this course my own lectures

BMB-8990: Biochemistry Research, 7 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB-9970: Lab Rotation Research, 4 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

SMD-551: Hematology, 3 credit hours, 109 students, 38 total contact hours (8 lecture hours, 30 non-contact hours), Team taught, Classroom course, Course Director: Course Director, I was the Course Director (attended nearly everybody elses lectures, total time 30 hours) and I taught 6 hours (5 mine, 1 substituted Dr. Trouts lecture) + 2 hours supervision TBL

### Dr. Campbell

#### **Spring 2017**

BMB 1000: Freshman Seminar, .5 credit hours, 4 students, total contact hours lecture hours, non-contact hours), Seminar

BMB 1010: Topics In Biochemistry, .5 credit hours, 5 students, total contact hours ( lecture hours, non-contact hours), Seminar

BMB 2100: Introduction to Biochemistry, 2 credit hours, 7 students, 30 total contact hours (25 lecture hours, 5 non-contact hours), Classroom course, Course Director: Chad Campbell, Taught all lectures

mostly in the active learning style to introduce to fundamental concepts of Biochemistry. Also created and graded all assessments in the course.

BMB 3220: Biochemistry for Pre-Meds, 3 credit hours, 17 students, 8 total contact hours (3 lecture hours, 5 non-contact hours), Team taught, Classroom course, Course Director: Dr. Schmidt, For this course I taught 2 classes (3 lecture hours) covering cell signaling and gene expression. For this course I also developed one exam and proctored two more.

BMB 4230: Biochemistry and Molecular Biology II, 3 credit hours, 29 students, 36 total contact hours (27 lecture hours, 9 non-contact hours), Team taught, Classroom course, Course Director: Dr. Chad Campbell, It was my responsibility to teach 27 lectures and three review sessions as well as prepare and grade three in class and three out of class assessments. Four exams were proctored.

### **Fall 2017**

BMB 1000: Freshman Seminar, .5 credit hours, 18 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 2000: Careers in BMB, 1 credit hour, 8 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 3220: Biochemistry for Pre-Meds, 3 credit hours, 50 students, 8 total contact hours (3 lecture hours, 5 non-contact hours), Team taught, Classroom course, Course Director: Dr. Schmidt, For this course I taught 2 classes (3 lecture hours) covering cell signaling and gene expression. For this course I also developed one exam and proctored two more.

BMB 3850: Biochemistry Laboratory, 3 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 4210: Biochemistry and Molecular Biology I, 3 credit hours, 46 students, 40 total contact hours (31 lecture hours, 9 non-contact hours), Team taught, Classroom course, Course Director: Dr. Chad Campbell, It was my responsibility to cover Thirty-one lectures and four review sessions. I also generated four in class assessments on those lectures all of which I proctored. Additionally, for the first time much of the course has been adapted to the active learning approach all of which was generated by myself. This included the incorporation of online homework and in class activities. These activities ranged from pre prepared workbook assignments, clicker sessions and self-prepared classroom activities. The final third of the course was given in the traditional lecture style as new material has not yet been generated for those topics.

### **Dr. Kadakia**

#### **Spring 2017**

BMB/BMS 7520: Biochemistry and Molecular Biology II, 13 credit hours, 26 students, 18 total contact hours (13 lecture hours, 5 non-contact hours), Team taught, Classroom course, Course Director: Madhavi Kadakia, In addition to lectures I contributed to one HW assignment, 1 recitations, and 2 exams. Thus the non-lecture contact hours include: 1-hr recitation + (2 x 2-hr exams) = 5 hrs.

BMB 8990: Biochemistry Research, 9 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9950: Non - Dissertation Research, 2 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

### **Summer 2017**

BMB 8990: Biochemistry Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 9950: Non Dissertation Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

**Fall 2017**

BMB 9950: Non Dissertation Research, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

**Dr. Leffak**

**Spring 2017:**

BMB 7030: Research Ethics, .5 credit hours, 10 students, 8 total contact hours (8 lecture hours, 0 non-contact hours), Classroom course, Course Director: Leffak, course organizer

BMB 7670: Molecular Basis of Inherited Disease, 3 credit hours, 5 students, 15 total contact hours (6 lecture hours, 9 non-contact hours), Team taught, Classroom course, Course Director: Leffak, course organizer; I attended all classes. Other contact hours were for student presentations.

BMS 7670: Molecular Basis of Inherited Disease, 3 credit hours, 11 students, 15 total contact hours (6 lecture hours, 9 non-contact hours), Team taught, Classroom course, Course Director: Leffak, course organizer; I attended all classes. Other contact hours were for student presentations.

BMS 9950: Dissertation Research, 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

**Fall 2017**

BMB 7500: 20 credit hours, 21 students, 26 total contact hours (20 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: Leffak, course organizer

BMB 8990: 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BIO 4990: Special Problems in Biology, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 7500: 3 credit hours, 2 students, 26 total contact hours (20 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: Leffak, course organizer

**Dr. Long**

**Spring 2017**

BMB 7670: Molecular Basis of Inherited Diseases, 3 credit hours, 18 students, 12 total contact hours (9 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffak, My lectures were focused on protein kinase signaling in inherited human diseases. I taught 6 lectures and attended Proposal presentations.

BMB 8990 04: Biochemistry Research, 5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 9000: Advanced Seminar in Biochemistry and Molecular Biology, 1 credit hour, 7 students, 2 total contact hours (0 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Weiwen Long, as the course director, conducting dissertation research

BMS 9960 – 04: Laboratory Rotation I, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9960 – 04: Laboratory Rotation I, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9900 04: Biochemistry Advanced Seminar, 1 credit hour, 3 students, 2 total contact hours (0 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Weiwen Long, As the course director, conducting dissertation research

### **Summer 2017**

BMB 8990 - C05: Biochemistry Research, 10 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990 C06: Dissertation Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

### **Fall 2017**

BMB 7530 – 01: Molecular Signaling, 3 credit hours, 4 students, 11 total contact hours (9 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Julian Cambroner, I taught 7 lectures (1 hr and 20 min each) and one exam (2 hrs)

BMB 8990 05: Biochemistry Research, 2 credit hours, 1 students, total contact hours ( lecture hours, non-contact hours), Laboratory

BMB 9000 01: Advanced Seminar in Biochemistry and Molecular Biology, 1 credit hour, 6 students, 2 total contact hours (0 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Weiwen Long, as the course director

BMS 9910 04: Molecular Signaling, 3 credit hours, 4 students, 11 total contact hours (9 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Julian Cambroner, I taught 7 lectures (1 hr and 20 min each) and one exam (2 hrs)

BMS 9950 02: Non-Dissertation Research, 2 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990 – 05: Dissertation Research, 5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

### **Dr. Markey**

#### **Spring 2017**

BMB 8990: Biochemistry Research, credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

#### **Summer 2017**

BMB 8990: Biochemistry Research, credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

SMD 535: Pathobiology and Therapeutics, 5 credit hours, 115 students, 2 total contact hours (2 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Paul Koles, TBL for Genetic Disorders

SMD 8170: Origins I, 7 credit hours, 115 students, 6 total contact hours (4 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, I was on the committee that designed WrightQ questions for this class, which were later removed in favor of other pedagogical methods. I designed two TBL sessions instead (TBLs 6 and 7), Neoplasia and CML. Each includes

learning objectives, application exercises, iRATs, and exam questions, and an exam review session Q&A.

### **Fall 2017**

BMB 3850: Biochemistry Lab, 3 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 8990: Biochemistry Research, credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

SMD 8175: Origins II, 6 credit hours, 115 students, 2 total contact hours (2 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Smita Krishnamurthy, I assisted with the TBL for Neoplasia.

### **Dr. Paietta**

#### **Spring 2017**

BMB 6990: Special Problems in Biochemistry, 3 credit hours, 1 students, 10 total contact hours (9 lecture hours, 1 non-contact hours), Classroom course, Course Director: John Paietta, Ran all aspects of course. This served as a replacement for Research Perspectives for a M.S. student who was starting the program in the Spring term rather than the Fall term. Sessions were run on an individual basis.

BMB 7670: Molecular Basis of Inherited Disease, 3 credit hours, 5 students, 9 total contact hours (8 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffak, Taught material on model organisms and the analysis of inherited disease, as well as, aspects of amino acid metabolism and inherited disease.

BMB 8990: Biochemistry Research, 4.5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory.

BMS 7670: Molecular Basis of Inherited Disease, 3 credit hours, 11 students, 9 total contact hours (8 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffak, Taught material on model organisms and the analysis of inherited disease, as well as, aspects of amino acid metabolism and inherited disease.

#### **Fall 2017**

BMB 4020: Research Perspectives, 1 credit hour, 2 students, 8 total contact hours (7 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Ran course in role of Director of BMB M.S. Program. The remainder of course meeting times not taught by myself (approx. half the course) were taught by other BMB faculty (1 class meeting/faculty). This was the first run of the undergraduate portion of Research Perspectives under the BMB 4020 listing.

BMB 6020: Research Perspectives, 3 credit hours, 6 students, 8 total contact hours (7 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Ran course in role of Director of BMB M.S. Program. The remainder of course meeting times not taught by myself (approx. half the course) were taught by other BMB faculty (1 class meeting/faculty). BMB 6020 is taken by MS students and is cross-listed with BMB 4020

SMD 8170: Origins 1, 7 credit hours, 115 students, 37 total contact hours (25 lecture hours, 12 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Module (course) director. Involved in the synthesis, organization and implementation of this new module as part of the new curriculum launch in BSOM. Ran peer instruction sessions on amino acid metabolism, heme synthesis, jaundice, nucleotide metabolism, DNA structure, DNA replication, RNA structure, transcription, gene regulation, protein synthesis, DNA repair/mutation, genome rearrangements,

recombinant DNA and clinical molecular genetics. Assisted with Team-based Learning (TBL) sessions involving cases in nucleotide metabolism, DNA replication and repair, and amino acid metabolism. In addition, due to the joint board final with Origins 2, as well as, the retake board exam my course director/instructor duties (review sessions, exam construction, targeted individual and group help sessions) continued through early January 2018.

### **Dr. Paliy**

#### **Spring 2017**

BMB 4230: Biochemistry II, 3 credit hours, 29 students, 8 total contact hours (7 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Chad Campbell

BMB 7670: Molecular Basis of Inherited Diseases, 3 credit hours, 9 students, 10 total contact hours (10 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffak, Taught a section of the class focused on the inheritance of human microbiota. The class was cross-listed with BMS 7670

BMB 8990: Biochemistry Research, .5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 8990: Biochemistry Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation research, 5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9910: Special topics, 1 credit hour, 1 students, 15 total contact hours (13 lecture hours, 2 non-contact hours), Classroom course, Course Director: Oleg Paliy, Special topics class focused on human gut microbiota and techniques of its interrogation

BMS 9990: Dissertation research, 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

#### **Summer 2017**

BMB 8990: Biochemistry Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 8990: Biochemistry Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation research, 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

ES 8130: Dissertation research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

#### **Fall 2017**

BMB 7530: Molecular Signaling, 3 credit hours, 8 students, 7 total contact hours (6 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Julian Cambroner, Taught a section of the class focused on the microbial signaling. The class was cross-listed with BMS 9910-04

BMB 8000: Brownbag seminar, 1 credit hour, 5 students, total contact hours (lecture hours, non-contact hours), Seminar

BMS 9990: Dissertation research, 5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation research, 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

ES 8130: Dissertation research, 2 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

M&I 8990: Biochemistry Research, 8 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

### **Dr. Ren**

#### **Spring 2017**

BMB-7670-01: Molecular Basis Inherited Disease, 3 credit hours, 15 students, 7.5 total contact hours (6 lecture hours, 1.5 non-contact hours), Team taught, Classroom course, Course Director: Dr. Michael Leffak, I provided an outline to students where i discussed the components of a proposal highlighting the sections concerned with significance, background, and gap in knowledge. i taught strategy involved an analysis of papers from the primary scientific literature to demonstrate how a research project is designed and conducted., This course taught students to write a research (mock) grant proposal.

#### **Summer 2017**

BMB 8990-09: Graduate Research, .515 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 8990-11: Biochemistry Research, .515 credit hours, 2 students total contact hours (lecture hours, non-contact hours), Laboratory

#### **Fall 2017**

BMB 7530: Molecular Signaling, 6 credit hours, 8 students, 7 total contact hours (6 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Dr. Julian Cambroner, I taught 6 lecture hours and gave one exam for this course. , The aim of this course is to provide an integrative view of cell signaling in mammalian and prokaryotic cells, covering (a) the transduction of signals from the cell membrane to the cytoplasm to the nucleus; (b) focusing on regulation of the pathways and structural changes of molecules; (c) studying in detail major cellular specific pathways; (d) tying them up to biomedical/pathological themes and (e) providing the students with the necessary intellectual tools to dissect relevant papers in the field that will be presented and discussed in class.

BMB-7020: Research Perspective, 3 credit hours, 5 students, 1 total contact hours (1 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Dr. John Paietta, I introduced the research focus and projects in my lab to graduate students and discussed papers published from my lab.

BMB 9000: Introduction to Research, 3 credit hours, 10 students, total contact hours (lecture hours, non-contact hours), Team taught, Seminar

### **Dr. Reo**

#### **Spring 2017**

BMB/BMS 7520: Biochemistry & Molecular Biology II, 3 credit hours, 26 students, 23.5 total contact hours (16 lecture hours, 7.5 non-contact hours), Team taught, Classroom course, Course Director: Nicholas Reo, In addition to lectures I contributed to two HW assignments, 3 recitations, and 3 exams.

Thus the non-lecture contact hours include: recitation (3 @ 1 h each) + exams (2 @ 1.25 h + 1 Final @ 2 h) = 7.5 h.

BMB 8990: BMB Research, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9950: Non-dissertation Research, 4 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9960: Laboratory Rotation, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

SMD 571: Molecular Basis of Medicine - Remediation, 10 credit hours, 5 students, 2 total contact hours (2 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Lawrence Prochaska, Conducted a 2.0 hr review class for students who needed to remediate the course. Then I submitted questions for a remediation exam that was given in March 2017.

### **Summer 2017**

BMB 8990: BMB Research, 3 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9950: Non-dissertation Research, 6 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

### **Fall 2017**

BMB 8990: BMB Research, 1 credit hour, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9950: Non-dissertation Research, 5 credit hours, 1 students, total contact hours (lecture hours, non-contact hours), Laboratory

SMD 8570: Origins 1, 10 credit hours, 115 students, 21 total contact hours (19 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Peer Instruction (10 h) + Team-based Learning (9 h) + two 1-h review sessions.

### **Dr. Schmidt**

#### **Spring 2017**

BMB 3220: Biochemistry for Pre-Med, 3 credit hours, 17 students, 45 total contact hours (37 lecture hours, 8 non-contact hours), Team taught, Classroom course, Course Director: Michael Schmidt, I was the course director and taught the majority of the course.<sup>37</sup>

BMB 7520: Molecular Biochem II, 3 credit hours, 26 students, 22 total contact hours (16 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: Nick Reo, I taught 16 lectures in this course

WrightQ, credit hours, 8 students, 25 total contact hours (24 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Colleen Hayden, I was trained and conducted WrightQ sessions

#### **Summer 2017**

BMB 3220: Biochemistry for Pre-Med, 3 credit hours, 25 students, 39 total contact hours (39 lecture hours, 0 non-contact hours), Classroom course, Course Director: Michael Schmidt, This course was taught online in the summer of 2017. I was the only instructor



## **Fall 2017**

BMB 3220: Biochemistry for Pre-Med, 3 credit hours, 50 students, 45 total contact hours (37 lecture hours, 8 non-contact hours), Team taught, Classroom course, Course Director: Michael Schmidt, I was the course director and taught the majority of the course.

BMB 3850: Biochem Lab, 3 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 4210: Biochem and Mol Biology, 3 credit hours, 45 students, 9 total contact hours (8 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Chad Campbell, I taught the introduction and Acid/Base

BMB 7500: Molecular Biochemistry 1, 3 credit hours, 23 students, 22 total contact hours (19 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffack, I taught the first half of this course. Covering the introductory information along with the material about proteins and enzymes.

WQC8102.2017: Origins 1, credit hours, 115 students, 22 total contact hours (13 lecture hours, 9 non-contact hours), Team taught, Classroom course, Course Director: John Paighta, I was responsible for just over 1/3 of the PI material.

## **Graduate student thesis supervisor**

### **Dr. Cambronero**

Kristen Fite, M. D./Ph.D.

Ramya Ganesan, Ph.D.

Padmashree Prasad, M. S. Student

Taylor Miller, M. S.

### **Dr. Kadakia**

BMB Mentor for Masters student Akshay Hira

BMB Mentor for Masters student Eid Alshammari

BMB Minyi Chen, MS Student Committee

BMS Jeannette Loyer-Manger, PhD student committee

BMS Lobna Elkhadragey, PhD student committee

BMS Member of the BMS Academics Policies Committee

BMS Mentor for PhD student, Amjad Alahthmi

BMS Mentor for PhD student, Andrew Stacy

BMS Mentor for PhD student, Reilly Clark

### **Dr. Leffak**

Student Research Committee, Alan Cone

Student Research Committee, Daniel Miranda

Student Research Committee, Jama Abdulrahman

Student Research Committee, John Trombley

Student Research Committee, Melissa Ward

Student Research Committee, Sara Siebert

### **Dr. Long**

Student Research Committee, As a research committee member for the following graduate students:

Elliott Hayden, Ph.D. student

Stacy, Andrew J., Ph.D. student

Amjad Aljagthmi, Ph.D. student

Prithy Martis, Ph.D. student  
Langni Liu, Ph.D. Student  
Rajalakshmi Santhanakrishnan, Ph.D. student  
Taylor Miller, M.S.  
Amjad Aljagthmi, M.S.  
Caitlin Castagno, M.S.

### **Dr. Markey**

BMB, John Trombley M.S. committee  
BMB, Sarah Kovar MS committee  
BMS, Alex Gordon PhD committee  
BMS, Andrew Stacy PhD committee  
BMS, Hima Yalamanchili Ph.D. committee

### **Dr. Paietta**

Student Research Committee, Student Research Committee for Amnah Obidan (M.S.)  
Student Research Committee, Student Research Committee for Kristen Fite (BMS Ph.D.)  
Student Research Committee, Student Research Committee for Trupthi Mehta (M.S.)

### **Dr. Paliy**

Student Research Committee, Committee member for BMS PhD student: Angela Campo  
Student Research Committee, Committee member for BMS PhD student: Sara Seibert

### **Dr. Ren**

BMB, Member in Amjad Ahmed R Aljagthmi's Thesis Committee  
BMB, Member in Hitham Abdulrahman A Aldharee's Thesis Committee  
BMB, Member in Minyi Chen's Thesis Committee  
BMB, Member in Sarah Kovar's Thesis Committee  
BMB, Mentor in Abdullah Ali A Alshudukhi's Thesis Committee  
BMB, Mentor in Abdulrahman Jama's Thesis Committee

### **Dr. Reo**

Student Research Committee, BMS PhD Dissertation Committee (Denise Kramer)  
Student Research Committee, BMS PhD Dissertation Committee (Hima Yalamanchili)  
Student Research Committee, BMS PhD Dissertation Committee (Marjorie Markopoulos)  
Student Research Committee, BMS PhD Dissertation Committee (Shimpi Bedi)  
Student Research Committee, BMS PhD Dissertation Committee (Xiu Huan Yap)  
Student Research Committee, M.S. Thesis Committee in BMB (Abdullah Alshudukhi)

### **BMB Masters student thesis committee member**

### **Dr. Cambroner**

Padmashree Prasad, M. S. Student  
Taylor Miller, M. S.

### **Dr. Kadakia**

BMB Mentor for Masters student Akshay Hira  
BMB Mentor for Masters student Eid Alshammari  
BMB Minyi Chen, MS Student Committee

### **Dr. Leffak**

Student Research Committee, Alan Cone  
Student Research Committee, Daniel Miranda  
Student Research Committee, Jama Abdulrahman

Student Research Committee, John Trombley  
Student Research Committee, Melissa Ward  
Student Research Committee, Sara Siebert

**Dr. Long**

Taylor Miller, M.S.  
Amjad Aljagthmi, M.S.  
Caitlin Castagno, M.S.

**Dr. Markey**

BMB, John Trombley M.S. committee  
BMB, Sarah Kovar MS committee

**Dr. Paietta**

Student Research Committee, Student Research Committee for Amnah Obidan (M.S.)  
Student Research Committee, Student Research Committee for Trupthi Mehta (M.S.)

**Dr. Paliy**

Student Research Committee, Committee member for BMS PhD student: Angela Campo  
Student Research Committee, Committee member for BMS PhD student: Sara Seibert

**Dr. Ren**

BMB, Member in Amjad Ahmed R Aljagthmi's Thesis Committee  
BMB, Member in Hitham Abdulrahman A Aldharee's Thesis Committee  
BMB, Member in Minyi Chen's Thesis Committee  
BMB, Member in Sarah Kovar's Thesis Committee  
BMB, Mentor in Abdullah Ali A Alshudukhi's Thesis Committee  
BMB, Mentor in Abdulrahman Jama's Thesis Committee

**Dr. Reo**

Student Research Committee, M.S. Thesis Committee in BMB (Abdullah Alshudukhi)

**BMS PhD student committee**

**Dr. Cambroner**

Padmashree Prasad, M. S. Student  
Taylor Miller, M. S.

**Dr. Leffak**

Student Research Committee, Alan Cone  
Student Research Committee, Daniel Miranda  
Student Research Committee, Jama Abdulrahman  
Student Research Committee, John Trombley  
Student Research Committee, Melissa Ward  
Student Research Committee, Sara Siebert

# 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]

## **Dr. Cambronero**

NIH, PLD as a GEF or as a lipase in Leukocyte chemotaxis, P.I. Julian G. Cambronero, (1/1/2017 to 3/31/2017) Total \$125000, Direct Current Year \$85000, Indirect Current Year \$40000, Total cost for entire grant period \$1100000, 20% salary for Dr. Cambronero.

## **Dr. Cho**

NIH/NCI, K-RAS PLASMA MEMBRANE INTERACTIONS: A TRACTABLE THERAPEUTIC TARGET, P.I. Kwang-jin Cho, (12/1/2017 to 11/30/2018) Total \$249000, Direct Current Year \$168243, Indirect Current Year \$80757, Total cost for entire grant period \$747000, 16.7% salary for Dr. Cho.

## **Dr. Kadakia**

Ohio Federal Research Network, Motion Sickness interactions with Spine Disorders, P.I. Ali Reiter, (9/19/2016 to 9/18/2018) Total \$76760, Direct Current Year \$59973, Indirect Current Year \$16787, Total cost for entire grant period \$133000, 5% salary for Dr. Kadakia.

Office of Naval Research-Multi University Research Investigation (MURI) , Precision High Intensity Training through Epigenetics, P.I. Dr. Timothy Broderick, (9/1/2016 to 8/31/2017) Total \$83298.34, Direct Current Year \$56282.67, Indirect Current Year \$27015.67, Total cost for entire grant period \$1508485, 10% salary for Dr. Kadakia.

NIH R01, Role of DNp63alpha in Vitamin D mediated cell survival in skin cancer, P.I. Madhavi Kadakia, (4/1/2012 to 3/31/2017) Total \$272655, Direct Current Year \$186750, Indirect Current Year \$85905, Total cost for entire grant period \$1382833, 17% salary for Dr. Kadakia.

NIH, Telomere length dynamics in relation to the changes in Adiposity and metabolic risk, P.I. Miryoung Lee, (9/23/2016 to 8/31/2016) Total \$24220, Direct Current Year \$16365, Indirect Current Year \$7855, Total cost for entire grant period \$121101, 3% salary for Dr. Kadakia.

## **Dr. Leffak**

NIGMS, Mechanisms of Replication-Dependent Microsatellite Instability in Human Disease, P.I. Ira Michael Leffak, (9/9/2017 to 8/31/2021) Total \$99000, Direct Current Year \$66000, Indirect Current Year \$33000, Total cost for entire grant period \$1200000, 20% salary for Dr. Leffak.

## **Dr. Long**

NCI 1R01CA193264-01, ERK3 Kinase Signaling in Lung Cancer, P.I. Weiwen Long, (06/01/2017 to 5/31/2018) Total \$338550, Direct Current Year \$228750, Indirect Current Year \$109800, Total cost for entire grant period \$1692750, 25% salary for Dr. Long.

DOD CDMRP, Role of SRC-3Æ4 in the Progression and Metastasis of Castration-Resistant Prostate Cancer, P.I. Weiwen Long, (07/01/2017 to 06/30/2018) Total \$241855, Direct Current Year \$163416, Indirect Current Year \$78439, Total cost for entire grant period \$241855, 30% salary for Dr. Long.

### **Dr. Markey**

Rogosin Institute, Chemoresistant cancer stem cells undergo gene changes that drive tumor recurrence, P.I. Prithy Martis, (06/10/2016 to 04/05/2017) Total \$1000, Direct Current Year \$1000.

Ohio Federal Research Network, Human Performance and Human Sciences: Ohio Federal Research Network; Cycle II: Motion Sickness Interactions with Spine Disorders (MOSSD), P.I. Timothy Broderick, (9/1/2016 to 8/31/2018) Total \$686309, Direct Current Year \$571112, Indirect Current Year \$115197, Total cost for entire grant period \$1097484, 20% salary for Dr. Markey.

Department of Defense, Precision High Intensity Training through Epigenetics (PHITE), P.I. Timothy Broderick, (06/01/2016 to 05/31/2021) Total \$1538485.48, Direct Current Year \$1402489, Indirect Current Year \$135996.48, 10% salary for Dr. Markey.

Central State University, Quantitative PCR and other quality control for honeybee sequencing project, P.I. Hongmei Li-Byarlay, PhD, (12/7/2017 to 12/7/2018) Total \$520, Direct Current Year \$520, Total cost for entire grant period \$520.

Ischemia Care, LLC, Validation of Affymetrix Clariom S Arrays for Clinical Diagnostics, P.I. Robert Feeney, (12/1/2016 to 1/31/2017) Total \$1414, Direct Current Year \$1285, Indirect Current Year \$129, .02% salary for Dr. Markey.

### **Dr. Paliy**

DAGSI, Biomolecular interaction of nanoparticles and other aerospace chemicals with gut microbial and metabolite profiles, P.I. Oleg Paliy, (06/01/2015 to 12/31/2018) Total \$41028, Direct Current Year \$32562, Indirect Current Year \$8466, Total cost for entire grant period \$155520, 8% salary for Dr. Paliy.

Ginkgo Bioworks / DARPA, Ginkgo Bioworks CRISPR IGS pilot project, P.I. Oleg Paliy, (12/16/2016 to 10/09/2017) Total \$32297, Direct Current Year \$21822, Indirect Current Year \$10475, Total cost for entire grant period \$32297, 8% salary for Dr. Paliy.

NIH NIDDK, Intestinal epithelial cell regulation of allergic inflammation at distant sites, P.I. Prosper Boyaka, (07/01/2015 to 04/30/2020) Total \$25650.41, Direct Current Year \$17331.31, Indirect Current Year \$8319.1, Total cost for entire grant period \$123977, 5% salary for Dr. Paliy.

NSF MRI, MRI: Acquisition of High Performance Computer Cluster for Multidisciplinary Computational Research and Education, P.I. Amit Sharma, WSU, (9/1/2015 to 8/30/2018) Total \$5000, Direct Current Year \$5000, Indirect Current Year \$0, Total cost for entire grant period \$150000.

American Heart Association, Protective effects of short chain fatty acids against infective endocarditis, P.I. Dr. Yvonne Sun, (01/01/2016 to 12/31/2017) Total \$14000, Direct Current Year \$14000, Indirect Current Year \$0, Total cost for entire grant period \$28000, 5% salary for Dr. Paliy.

### **Dr. Reo**

NIH, RO1, Intestinal Epithelial Cell Regulation of Allergic Inflammation at Distant Sites, P.I. P.N. Boyaka, (7/1/2015 to 4/30/2020) Total \$9986, Direct Current Year \$6747, Indirect Current Year \$3239, Total cost for entire grant period \$29909, 2.67% salary for Dr. Reo.

### **Extramural**

#### **Dr. Reo**

DoD, Henry Jackson Foundation for the Advancement of Military Medicine, Mechanistic Interpretations of Hypobaric and Hyperoxic Using Metabolomics and Proteomics, P.I. Nicholas V. Reo, (11/1/2015 to 4/30/2017) Total \$0, Direct Current Year \$0, Indirect Current Year \$0, Total cost for entire grant period

\$103735, 10% salary for Dr. Reo.

DoD, Henry Jackson Foundation for Advancement of Military Medicine, Air Force Research Laboratory, Metabolomics Analysis of Fecal Extracts in a Humanized Microbiome Mouse Model, P.I. Nicholas V. Reo, (5/1/2017 to 10/31/2018) Total \$92240, Direct Current Year \$70567, Indirect Current Year \$21673, Total cost for entire grant period \$207541, 15% salary for Dr. Reo.

DoD, Henry Jackson Foundation for the Advancement of Military Medicine, NMR-based urinary metabolomics in rats exposed to burn pit emissions and respirable sand, P.I. Nicholas V. Reo, (11/1/2015 to 4/30/2017) Total \$53446, Direct Current Year \$36112, Indirect Current Year \$17334, Total cost for entire grant period \$240504, 15% salary for Dr. Reo.

Internal

**Dr. Campbell**

Wright State University, 2016 Teaching Innovation Grant Proposal: The Redevelopment of BMB 4210 into a Student-Centered, Active Learning Majors Course, P.I. Dr. Chad Campbell, (1/1/2017 to 12/31/2017) Total \$6000, Direct Current Year \$6000, Indirect Current Year \$0, Total cost for entire grant period \$6000.

**Dr. Kadakia**

Neuroscience Institute, Premier Health Brain Behavior Fellowship, P.I. Tim Broderick, (10/23/2016 to 9/30/2018) Total \$330000, Direct Current Year \$330000, Total cost for entire grant period \$660000.

**Dr. Markey**

Ampliseq cancer hotspot sequencing, P.I. Jeffery Traver, MD PhD and Dan Spandau, PhD, (1/24/2017 to 7/5/2017) Total \$3200, Direct Current Year \$3200, Total cost for entire grant period \$3200.

Wright State University, Characterization of Gene Expression in Muscle Proprioceptive Afferents, P.I. David Ladle, (05/16/2016 to 06/30/2017) Total \$20000, Direct Current Year \$20000, Total cost for entire grant period \$20000.

Wright State University, Diagnostic Biomarkers of Ischemic Stroke Identified in Patient Blood: A Clinical/Translational Study, P.I. James Olson, (08/22/2016 to 08/21/2018) Total \$25000, Direct Current Year \$25000.

Gene expression in response to sciatic nerve compression, P.I. Keiichiro Susuki, PhD, (3/1/2017 to 12/31/2017) Total \$2127, Direct Current Year \$2127, Total cost for entire grant period \$2127.

**Dr. Reo**

WSU Teaching Innovation Grant, The Redevelopment of BMB 4210 into a Student-Centered, Active Learning Majors Course, P.I. Chad Campbell, (11/1/2016 to 10/31/2017) Total \$6000, Direct Current Year \$6000, Indirect Current Year \$0, Total cost for entire grant period \$6000.

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

**Dr. Cambroner**

Dr. Cambroner J and Ganesan, 'Targeting PLD genetically and pharmacologically', Methods Molecular Biology, 2017.

Abdulnour RE, Howrylak JA, Tavares AH, Douda DN, Henkels KM, Miller TE, Fredenburgh LE, Baron RM, Gomez-Cambroner J, Levy BD., 'Phospholipase D isoforms differentially regulate leukocyte responses to acute lung injury', J Leukoc Biol., 2017.

Gomez-Cambronero J and Ganesan R, 'Targeting PLD genetically and pharmacologically', *Methods in Molecular Biology*, 2017.

Gomez-Cambronero J and Henkels K, 'Phospholipase D-isoform D2 (PLD2)', *Encyclopedia of Signaling Molecules*, Springer Science LLC, Chapter 23, pp. 1678-90, 2017.

Gomez-Cambronero J, Morris AJ, Henkels KM., 'PLD Protein-Protein Interactions With Signaling Molecules and Modulation by PA', *Methods Enzymol*, 583, 327-357, 2017.

Miller TE, Gomez-Cambronero J., 'A feedback mechanism between PLD and deadenylase PARN for the shortening of eukaryotic poly(A) mRNA tails that is deregulated in cancer cells.', *Biol Open.*, 6(2):, 176-186, 2017.

### **Dr. Cho**

Cho KJ\*, Prakash P\*, Sayyed-Ahmad A\*, Dolino DM, Chen W, Li H, Grant BJ, Hancock JF, Gorfe AA., 'Computational and biochemical characterization of two partially overlapping interfaces and multiple weak-affinity K-Ras dimers.', *Scientific Reports*, 7, 40109, 2017.

Fehrenbacher N, Tojal da Silva I, Ramirez C, Zhou Y, Cho KJ, Kuchay S, Shi J, Thomas S, Pagano M, Hancock JF, Bar-Sagi D, Philips MR., 'The G protein-coupled receptor GPR31 promotes membrane association of KRAS.', *Journal of Cell Biology*, 216, 2329-2338, 2017.

Mustachio LM, Lu Y, Tafe LJ, Memoli V, Rodriguez-Canales J, Mino B, Villalobos PA, Wistuba I, Katayama H, Hanash SM, Roszik J, Kawakami M, Cho KJ, Hancock JF, Chinyenetere F, Hu S, Liu X, Freemantle SJ, Dmitrovsky E., 'Deubiquitinase USP18 Loss Mislocalizes and Destabilizes KRAS in Lung Cancer.', *Mol Cancer Res.*, 15, 905-914, 2017.

Sarkar-Banerjee S, Sayyed-Ahmad A, Prakash P, Cho KJ, Waxham MN, Hancock JF, Gorfe AA., 'Spatiotemporal Analysis of K-Ras Plasma Membrane Interactions Reveals Multiple High Order Homooligomeric Complexes.', *Journal of the American Chemical Society*, 139, 13466-13475, 2017.

van der Hoeven D, Cho KJ, Zhou Y, Ma X, Chen W, Naji A, Montufar-Solis D, Zuo Y, Kovar SE, Levental KR, Frost JA, van der Hoeven R, Hancock JF., 'Sphingomyelin metabolism is a regulator of KRAS function.', *Molecular and Cellular Biology*, pii: MCB.00373-17.

### **Dr. Craig**

R.J. Clark, M.P. Craig, S. Agrawal and M. Kadakia, 'microRNA Involvement in the Onset and Progression of Barretts Esophagus: a systematic review', *Oncotarget*, 2018.

A.J., Stacy, M.P. Craig, S. Sakaram and M. Kadakia, 'ΔNp63 and microRNAs: leveraging the epithelial-mesenchymal transition.', *Oncotarget*, 8(2), 2114-2129, 2017.

K. Baltrunaite, M.P. Craig, S. Palencia-Desai, P. Chaturvedi, R.N. Pandey, R.S. Hegde and S. Sumanas , 'ETS transcription factors Etv2 and Fli1b are required for tumor angiogenesis. ', *Angiogenesis*, 20(3), 307-323, 2017.

### **Dr. Kadakia**

Reilly Clark, Michael Craig, Andrew Stacy, Sangeeta Agrawal, Madhavi Kadakia, 'microRNA Involvement in the Onset and Progression of Barrett's Esophagus (in preparation)', *Oncotarget*.2018

### **Dr. Leffak**

Gadgil R, Barthelemy J, Lewis T, Leffak M., 'Replication stalling and DNA microsatellite instability.', *Biophys Chem.*, pii: S0301-4622(16)30374-X. doi: 10.1016/j.bpc.2016.11.007., 2017.

Leffak, 'Break-induced replication links microsatellite expansion to complex genome rearrangements. ', Bioessays, doi: 10.1002/bies.201700025, epub, 2017.

### **Dr. Long**

Alsaran H, Elkhadragey L, Shakya A, Long W., 'L290P/V mutations increase ERK3's cytoplasmic localization and migration/invasion-promoting capability in cancer cells', Scientific Reports, 7(1), 14979, 2017.

Zhang C, Xiao X, Chen M, Aldharee H, Chen Y, Long W., 'Liver kinase B1 restoration promotes exosome secretion and motility of lung cancer cells', Oncology Reports, 39, 376, 2018.

### **Dr. Markey**

EMP Almazan, SL Lesko, MP Markey, L Rouhana, 'Girardia dorotocephala transcriptome sequence, assembly, and validation through characterization of piwi homologs and stem cell progeny markers', Developmental Biology.

L. M. Havemann, D.R. Cool, P. Gagneux, M.P. Markey, J.L. Yaklix, R.A. Maxwell, A. Iyer, S.R. Lindheim, 'Vulvodinia: What We Know and Where We Should Be Going', Journal of Lower Genital Tract Disease, 2, 150-156, 2017.

P Wong, M Markey, CM Rapp, RM Darrow, A Ziesel, DT Organisciak, 'Enhancing the efficacy of AREDS antioxidants in light-induced retinal degeneration', Molecular Vision, 23, 718-739, 2017.

S Varia, D Cheedu, M Markey, K Torres-Shafer, VP Battini, A Bubulya, PA Bubulya, 'Alignment of Mitotic Chromosomes in Human Cells Involves SR-Like Splicing Factors Btf and TRAP150', International Journal of Molecular Science, 9, E1956, 2017.

### **Dr. Paliy**

M.C. Jugan, A.J. Rudinsky, A. Gordon, D.L. Kramer, J.B. Daniels, O. Paliy, P. Boyaka, C. Gilor, 'Effects of oral Akkermansia muciniphila supplementation in healthy dogs following antibiotic administration', Am J Vet Res.

V. Shankar, M. Gouda, J. Moncivaiz, A. Gordon, N.V. Reo, L. Hussein, and O. Paliy, 'Differences in gut metabolites and microbial composition and functions between Egyptian and US teenagers are consistent with consumed diets', mSystems, 2, e00169-16, 2017.

V. Shankar, R. Agans, and O. Paliy, 'Advantages of phylogenetic distance based constrained ordination analyses for the examination of microbial communities', Sci Reports, 7, 6481, 2017

### **Dr. Reo**

I. Sibomana, N.J. DelRaso, D.R. Mattie, M.L. Raymer, and N.V. Reo, 'Furosemide enhances the sensitivity of urinary metabolomics for assessment of kidney function', Metabolomics, 13, 1-17, 2017.

V. Shankar, M. Gouda, J. Moncivaiz, A. Gordon, N.V. Reo, L. Hussein, and O. Paliy, 'Differences in gut metabolites and microbial composition and functions between Egyptian and US children are consistent with their diets', mSystems (American Society of Microbiology publication), 2, e00169-16, 2017.

### **Dr. Schmidt**

Schmidt, M.A., Halvorson, J.J., Hagerman, A.E., Gonzalez, J.M., 'Macronutrients and metals released from soils by solutions of naturally occurring phenols.', Journal of Plant Nutrition and Soil Science, 180, 544-553, 2017.



## Published abstracts

### **Dr. Cambroner**

Ganesan, R and Gomez-Cambroner, J., Involvement of PLD in Macrophage polarization (M1-to-M2), American Association of Immunologists, Orlando, FL 5/12/2017 - 5/16/2017 (Platform).

Ganesan, R, Wrensall LE and Gomez-Cambroner, J., A new role for phospholipase D in Atherosclerosis, Society of Leukocyte Biology, Vancouver, CA 9/27/2018 - 9/30/2018 (Platform).

### **Dr. Kadakia**

Clark R, Zhang J, Agrawal S, Craig MP, Kadakia MP., Differential microRNA signatures in Esophageal Cancer. , Celebration of Research, Wright State University, Dayton, Ohio 4/21/2017 - (Poster).

Stacy AJ, Craig MP, Zhang J, and Kadakia MP, DNp63a and TIP60: Potential implications in cancer and aging, Celebration of Research, Wright State University, Dayton, Ohio 4/21/2017 - (Poster).

Aljagthmi A, Hill NT, Sakaram S, Kadakia MP, Np63 suppresses EMT through modulation of the Rac1 via miR320a, Celebration of Research, Wright State University, Dayton , Ohio 4/21/2017 - (Poster).

Clark R, Zhang J, Agrawal S, Craig MP, Kadakia MP, Differential microRNA signatures in Esophageal Cancer , Central Research Forum, Wright State University, Dayton Ohio 10/5/2017 - 10/5/2017 (Poster).

Stacy AJ, Craig MP, Zhang J, and Kadakia MP, DNp63a and TIP60: Potential implications in cancer and aging. Central Research Forum, Wright State University, Dayton Ohio 10/5/2017 - 10/5/2017 (Poster).

Aljagthmi A, Hill NT, Sakaram S, Kadakia MP, Np63 suppresses EMT through modulation of the Rac1 via miR320a, Graduate Student Assembly Research Symposium, Wright State University, Dayton Ohio. 4/17/2017 - 4/17/2017 (Poster).

### **Dr. Leffak**

Gadgil, R., Lewis, T., Leffak, M., Chromosome breakage at microsatellite repeat sequences, 19th Annual Midwest DNA Repair Symposium, WSU 5/13/2017 - 5/14/2017 (Poster).

### **Dr. Long**

Lobna Elkhadragey, Hadel Alsaran and Weiwen Long, Intramolecular regulation of ERK3 kinase activity and its role in lung cancer cell migration, keystone symposia meeting, Kinases: Next-Generation Insights and Approaches, Colorado 3-05-2017 - 03-09-2017 (Poster).

Lobna Elkhadragey, Hadel Alsaran and Weiwen Long, Novel insights into the regulation of ERK3 kinase activity and its ability in promoting cancer cell invasiveness, American Association for Cancer Research annual conference, Washington DC 4-1-2017 - 4-5-2017 (Poster).

Lobna Elkhadragey, Hadel Alsaran and Weiwen Long, Importance of the activation loop phosphorylation for the activity and functions of ERK3, The Annual Celebration of Research, Wright State University, Dayton, Ohio 04-21-2017 - 04-21-2017 (Oral Presentation).

Hitham Aldharee and Weiwen Long, ERK3 role in regulating RhoGDI-PAK signaling axis in cancer cells, the keystone symposia meeting, Kinases: Next-Generation Insights and Approaches, Colorado, March 5-9, 2017, Colorado 03-05-2017 - 03-09-2017 (Poster).

Hadel Alsaran, Lobna Elkhadragey and Weiwen Long, Cancer-related mutations of ERK3 promotes cancer cell invasiveness, ASBMB annual conference, Chicago 4-22-2017 - 04-26-2017 (Poster).

Hadel Alsaran, Lobna Elkhadragey and Weiwen Long, Cancer-related mutations of ERK3 promotes cancer cell invasiveness, The Annual Celebration of Research, Wright State University, Dayton, Ohio 4-21-2017 - 04-21-2017 (Poster).

Brian Caprul, Lobna Elkhadragey, Natasha Hill, Madhavi Kadakia, Weiwen Long, miR-6087 is a gene target of ERK3 and a novel factor promoting cancer cell migration and invasion, The Annual Celebration of Research, Wright State University, Dayton, Ohio 04-21-2017 - 04-21-2017 (Oral Presentation).

Brian Caprul, Lobna Elkhadragey, Natasha Hill, Madhavi Kadakia, Weiwen Long, miR-6087 is a gene target of ERK3 and a novel factor promoting cancer cell migration and invasion, Annual Biomedical Research Conference for Minority Students (ABRCM) , Phoenix, Arizona 11-01-2017 - 11-04-2017 (Oral Presentation).

Astha Shakya, Minyi Chen, Michael Markey, Weiwen Long, ERK3 negatively regulates IL-6 signaling by suppressing STAT3 phosphorylations via SOCS3, Central Research Forum, Boonshoft School of Medicine, Wright State University 10-05-2016 - 10-05-2016 (Poster).

Lobna Elkhadragey, Minyi Chen, Cheng Zhang, Hadel Alsaran and Weiwen Long, ERK3 kinase plays important roles in cancer cell growth and invasiveness, The 16th International Symposium, Society of the Chinese Bioscientists in America, Hangzhou, China 06-29-2017 - 07-03-2017 (Poster).

#### **Dr. Markey**

P.C. Martis, A. Dudley, M.A. Laramore, H.L. Gazda, M.P. Markey, B.H. Smith, L.S. Gazda, Chemoresistant cancer stem cells undergo gene changes that drive tumor recurrence, AACR Annual Meeting, Washington, D.C. 4/1/2017 - 4/5/2017 (Poster).

PK Lauf, M Markey, S AyygŸn, and NC Adragna, Digitalis, Transcription and Apoptosis, Lake Cumberland Biological Transport Group 2017 meeting, Jamestown, KY 6/18/2017 - 6/20/2017 (Platform).

#### **Dr. Paietta**

J.V. Paietta, Regulation of sulfur metabolism in Neurospora crassa, 29th Fungal Genetics Conference, Asilomar Conference Center, Pacific Grove, California - (Poster).

#### **Dr. Paliy**

M. Jugan, A. Rudinsky, O. Paliy, A. Gordon, J. Daniels, P. Boyaka, C. Gilor, Effects of Akkermansia muciniphila on markers of intestinal permeability in dogs following antibiotic treatment, ACVIM forum 2017, National Harbor, MD 6/8/2017 - 6/10/2017 (Poster).

#### **Dr. Ren**

Hongmei Ren, The new role of lipin1 in myogenic progenitor differentiation to muscle and adipose tissues, International Conference and Exhibition on Biochemistry, Molecular Biology: R&D , Chicago, Illinois, USA 11/02/2017 - 11/03/2017 (invited talk).

Abdullah Ali A Alshudukhi, Dengtong Huang, Abdulrahman Jama, Qing Jun Wang, Hongmei Ren, Role of lipin1 in skeletal muscle mitophagy, Wright State University Central Research Forum, Wright State University - (Poster).

Abdulrahman Jama, Dengtong Huang, Abdullah Ali A Alshudukhi, Karim Nadra, Roman Chrast, Hongmei Ren, Lipin1 regulates skeletal muscle differentiation through the PKC/HDAC5/MEF2/MyoD-

mediated pathway, Wright State University Central Research Forum, Wright State University student Union - (Poster).

Dengtong Huang, Abdulrahman Jama, Abdullah Ali A Alshudukhi, Karim Nadra, Roman Chrast, Hongmei Ren, Lipin1 stimulates the transdifferentiation of Myf5-expressing progenitors into myoblasts versus brown pre-adipocytes , Wright State University Central Research Forum, Wright State University - (Poster).

### **Dr. Reo**

N. Grobe, L. Narayanan, D.N. Brown, S.T. Law, I. Sibomana, N.V. Reo, T.R. Sterner, and D.R. Mattie, Lipid composition of the auditory pathway for ototoxicity studies involving jet fuel exposure, Society of Toxicology 56th Annual Meeting, Baltimore, MD 3-12-2017 - 3-16-2017 (Poster).

M.K. Makley, A.E. Neuforth, A. Campo, N.V. Reo and D.A. Mahle , Mechanistic interpretation of hypobaria and hyperoxia using metabolomics in brain of Sprague Dawley rats , Society of Toxicology 56th Annual Meeting, Baltimore, MD 3-12-2017 - 3-16-2017 (Poster).

### **Consultantships**

#### **Dr. Cambroner**

Universidad Autonoma de Madrid

#### **Dr. Paliy**

Ginkgo Bioworks

## **6** Summary of Service Activities

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

#### **BMB committee service**

#### **Dr. Campbell,**

BMB Curriculum Committee  
BMB Undergraduate Lab Development  
BMB Undergraduate Oversight Committee  
BMB Undergraduate research committee

#### **Dr. Cho,**

BMB, Weisman Travel Award

#### **Dr. Kadakia,**

Chair for BMB 2017  
BMB Mentor for Masters student Akshay Hira  
BMB Mentor for Masters student Eid Alshammari

BMB Minyi Chen, MS Student Committee

**Dr. Leffak,**

BMB FDC  
BMB Search Committee Chair  
BMB Undergrad. Honors Research Committee  
BMB Undergrad. Program Committee  
BMB Undergrad. Research Committee

**Dr. Long,**

By laws committee of BMB: 01/2017-present  
BMB, Member of BMBs Master program admission committee  
BMB, New faculty search committee of BMB department: 2015-present

**Dr. Markey,**

BMB Bylaws Committee  
BMB, Caitlin Castagno MS committee  
BMB, Holiday Party Committee  
BMB, John Trombley M.S. committee  
BMB, Sarah Kovar MS committee

**Dr. Paietta,**

BMB Faculty Search Committee  
BMB M.S. Program Director

**Dr. Paliy,**

BMB Undergraduate Research Committee

**Dr. Ren,**

BMB, Member in Amjad Ahmed R Aljagthmi's Thesis Committee  
BMB, Member in Hitham Abdulrahman A Aldharee's Thesis Committee  
BMB, Member in Minyi Chen's Thesis Committee  
BMB, Member in Sarah Kovar's Thesis Committee  
BMB, Mentor in Abdullah Ali A Alshudukhi's Thesis Committee  
BMB, Mentor in Abdulrahman Jama's Thesis Committee  
BMB Undergraduate Curriculum Committee

**Dr. Reo,**

BMB, Department Bylaws Review Committee  
BMB, Department Faculty Development Committee  
BMB, Undergraduate Program Oversight Committee  
BMB, Weisman Graduate Student Award Selection Committee

**Dr. Schmidt,**

BMB, Departmental Curriculum Committee

### **BSOM committee service**

#### **Dr. Kadakia,**

SOM Associate Director for Center of Genomics Research  
SOM Member of the Student Promotion committee

#### **Dr. Leffak,**

SOM, Faculty Curriculum Committee

#### **Dr. Paietta,**

SOM, Foundations of Clinical Medicine (FCM) Committee (this was previously called the BI committee)  
SOM, Origins 1 Steering Committee  
SOM, WCSC (Wright Curriculum Steering Committee)

#### **Dr. Reo,**

SOM, BSOM Curriculum Development Committee for Origins 1 Course  
SOM, BSOM Faculty Promotion and Advancement Committee  
SOM, Steering Committee Member for Origins 1 Course

#### **Dr. Schmidt,**

SOM, Faculty Curriculum Committee

### **Wright State University Science and Math**

#### **Dr. Campbell,**

College of Science and Math Teaching Awards Committee  
College of Science and Math Undergraduate Curriculum Committee  
COSM Advisors meetings  
COSM New Student Orientation Committee

#### **Dr. Leffak,**

CoSM FDC  
CoSM Undergrad Petitions Committee

#### **Dr. Paietta,**

CoSM, Graduate Studies Committee

### **BMS program committee service**

#### **Dr. Kadakia,**

BMS Jeannette Loyer-Manger, PhD student committee  
BMS Lobna Elkhadragey, PhD student committee  
BMS Member of the BMS Academics Policies Committee

BMS Mentor for PhD student, Amjad Alahthmi  
BMS Mentor for PhD student, Andrew Stacy  
BMS Mentor for PhD student, Reilly Clark

**Dr. Leffak,**

BMS Academic Policies Committee

**Dr. Long,**

BMS, BMS admission committee, elected

**Dr. Markey,**

BMS, Alex Gordon PhD committee  
BMS, Andrew Stacy PhD committee  
BMS, Hima Yalamanchili Ph.D. committee

**Dr. Paliy,**

BMS Curriculum committee  
Student Research Committee, Committee member for BMS PhD student: Angela Campo  
Student Research Committee, Committee member for BMS PhD student: Sara Seibert

**Dr. Ren,**

BMS, Biomedical Sciences PhD Program Committee Member  
BMS, Member in Ishita Haider's PhD Dissertation Committee

**Dr. Reo,**

BMS, BMS Program Admissions Committee  
Student Research Committee, BMS PhD DISSERTATION COMMITTEE (Denise Kramer)  
Student Research Committee, BMS PhD DISSERTATION COMMITTEE (Hima Yalamanchili)  
Student Research Committee, BMS PhD DISSERTATION COMMITTEE (Marjorie Markopoulos)  
Student Research Committee, BMS PhD DISSERTATION COMMITTEE (Shimpi Bedi)  
Student Research Committee, BMS PhD DISSERTATION COMMITTEE (Xiu Huan Yap)  
Student Research Committee, M.S. Thesis Committee in BMB (Abdullah Alshudukhi)

**Wright State University**

**Dr. Cambroner,**

University, IACUC

**Dr. Kadakia,**

University, Faculty Senate  
University, Member of Ad Hoc Research Committee for Faculty senate

**Dr. Long,**

University, IACUC member

**Dr. Markey,**

University, Graduate Council BSOM faculty representative  
University, Graduate Council Membership Committee

**Dr. Paliy,**

University, WSU Institutional Biosafety committee

**Dr. Reo,**

University, Academic Reorganization Review Steering Committee  
University, Faculty Senate  
University, Research Council (Member, Representative from Faculty Senate)

**Student research committee service**

**Dr. Leffak,**

Student Research Committee, Alan Cone  
Student Research Committee, Daniel Miranda  
Student Research Committee, Jama Abdulrahman  
Student Research Committee, John Trombley  
Student Research Committee, Melissa Ward  
Student Research Committee, Sara Siebert

**Dr. Long,**

Student Research Committee, As a research committee member for the following graduate students:  
Elliott Hayden, Ph.D. student  
Stacy, Andrew J., Ph.D. student  
Amjad Aljagthmi, Ph.D. student  
Prithy Martis, Ph.D. student  
Langni Liu, Ph.D. Student  
Rajalakshmi Santhanakrishnan, Ph.D. student  
Taylor Miller, M.S.  
Amjad Aljagthmi, M.S.  
Caitlin Castagno, M.S.

**Dr. Paietta,**

Student Research Committee, Student Research Committee for Amnah Obidan (M.S.)  
Student Research Committee, Student Research Committee for Kristen Fite (BMS Ph.D.)  
Student Research Committee, Student Research Committee for Trupthi Mehta (M.S.)

**Dr. Paliy,**

Student Research Committee, Committee member for BMS PhD student: Angela Campo  
Student Research Committee, Committee member for BMS PhD student: Sara Seibert

**Dr. Reo,**

Student Research Committee, BMS PhD Dissertation Committee (Denise Kramer)  
Student Research Committee, BMS PhD Dissertation Committee (Hima Yalamanchili)  
Student Research Committee, BMS PhD Dissertation Committee (Marjorie Markopoulos)  
Student Research Committee, BMS PhD Dissertation Committee (Shimpi Bedi)  
Student Research Committee, BMS PhD Dissertation Committee (Xiu Huan Yap)  
Student Research Committee, M.S. Thesis Committee in BMB (Abdullah Alshudukhi)

**Other**

**Dr. Campbell,**

Sinclair Biotech Advisory Board

# 7

## Patient Care Summary

Not applicable

# 8

## Honors and awards [Faculty or staff]

**Awards**

**Dr. Leffak**

WSU BSoM Academy of Medicine Senior Faculty Award, received by Dr. Leffak.

**Outreach Program**

**Dr. Markey**

Science Olympiad, 5/18/2017, This program is located at WSU.

Take Our Sons and Daughters To Work Day, 4/6/2017, This program is located at WSU.

**Special Interest Program**

**Dr. Markey**

Montgomery County Science Day, Intel International Science and Engineering Fair (I judged science fair projects for ISEF.), 3/4/2017, This program is located at Dayton, OH.

The Robert A. Weisman Graduate Student Achievement Award, Dr. Cambroner, Ramya Ganesan, This program is located at WSU.



# 9

## Hosted events [CME, etc.]

Not applicable

# 10

## Other information

### **Dr. Cambroner**

Breast Cancer in Triple Negative Cells dependent on PLD, Universidad Complutense, Madrid, Spain, 6/25/2017 - 6/26/2017.

Intracellular exosome biogenesis depends on PLD and PA signaling, BioGUNE-Centro Superior Investigaciones Cientificas, Bilbao, Spain, 6/21/2017 - 6/22/2017.

PLD Cell Signaling and Cancer, Universidad del Pais Vasco (UPV), Bilbao, Spain, 6/20/2017 - 6/21/2017.

### **Dr. Kadakia**

A glimpse into the faculty research in the department of Biochemistry and Molecular Biology., Central Research Forum, Wright State University, 10/5/2017.

Role of DNp63a, youngest sibling of p53 family in cancer and development, AMGDB (Association of Medical and Graduate Departments of Biochemistry) annual meeting, Oxaca, Mexico, 1/12/2017 - 1/16/2017.

Np63 suppresses cell invasion by modulating RAC1 activity via miR-320a. , Puerto Rico INBRE and COBRE symposium, Puerto Rico, 5/19/2017 - 5/20/2017.

### **Dr. Markey**

CGR Update 2017, BMB Faculty Retreat, Dayton, OH, 8/25/2017.

Personalized Medicine, Science Olympiad, Wright State University, 5/18/2017.

What is Molecular Biology? Donovan Elementary School Expert Friday, Lebanon, OH, 9/22/2017.

### **Dr. Ren**

Role of lipin1 in lipid metabolism and mitochondrial plasticity, Biological Sciences, Wright State University, NEC Auditorium, Wright State University, 3/13/2017.

The new role of lipin1 in myogenic progenitor differentiation to muscle and adipose tissues, International Conference and Exhibition on Biochemistry, Molecular Biology: R&D, Chicago, Illinois, USA, 11/02/2017 - 11/03/2017.