



Department of/Office of Biochemistry & Molecular Biology

Annual Report:

January 2019 – December 2019

Madhavi Kadakia, Ph.D.
Professor and Chair

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Statement from the Chair/Associate Dean

In 2019, we had a total of 2 BMB admin staff, 13 Ph.D. students, 15 Master's students, 15 undergraduate researchers, 1 post-doctoral fellow and 4 research associates. Of the 28 graduate students (13 Ph.D. and 10 Master's students), 3 M.S. students graduated by end of 2019. In, September 2019, BMB held its annual BMB faculty retreat.

BMB faculty received a total of funded grants (national, local and internal) totaling \$1,319,916 (\$793,892 in direct costs and \$384,978 in indirect costs). BMB published a total of 23 manuscripts in 2019. Students and faculty from the department presented 53 posters and/or talks on their research at local forums (Central Research Forum, Celebration of Research, COSM research celebration day), and several national and international meetings. In addition, BMB faculty presented 5 invited talks which included research meetings. . Dr. Ren filed two patents: (1) LIPIN-1 as a Novel Therapy Target of Muscular Dystrophy US Provisional Patent Application – 62/864,146, filed 06/20/2019. (2) Blood-based Biomarkers for the Detection of Colorectal Cancer US Patent Application – 16/428,517, filed 05/31/2019

In 2019, SMD 8170 Origins was the third offering of the module reflecting the implementation of the new and innovative WrightCurriculum. Major changes or improvements for 2019 were as follows: 1) All learning events from the prior year were carefully evaluated and refinements introduced throughout the module; 2) A major change of schedule in Origins was incorporated where a five-week block of primarily biochemistry was followed by the insertion of five-weeks of the Human Architecture module. Following the anatomy block, the Origins module restarted and began with the topic of molecular biology proceeding to the ending topics in pharmacology and physiology. The Origins schedule change was necessary due to the limited availability of classroom space for Human Architecture; 3) nearly all of the TBL learning events were substantially revised and had four new clinical faculty assisting with these sessions. Student performance in the Origins module was excellent (all students qualified to sit for the board final) and well-received by the students as reflected in their evaluations.

The Undergraduate BMB program graduated 5 students (3 in spring and 2 in fall) with two students receiving a departmental honors diploma for their lab research efforts. We expect an additional 7 students to graduate in the spring of 2020. Three new elective courses were offered for the first time in 2019, including Cell signaling, Molecular Biology of RNA, and Molecular Biology of Cancer. Additionally, BMB 3990 was developed as an undergraduate teaching assistant course where teaching assistants helped facilitate active learning teaching strategies. The BMB students will now take Applied Calculus offered by the math department. In 2019, a 4+1 program was developed which integrates the undergrad program to the master's program in BMB. This overlap removes one semester of coursework from the student load and allows the students to graduate in 5 years (including a summer semester between years 4 and 5) instead of the normal 6. The faculty approved of the program and we expect the program will be accepted and in place by the beginning of Fall 2020.

Dr. Oleg Paliy's student Jennifer Cano received the LSAMP Undergraduate Research Award. In 2019, BMB faculty member Dr. John Paietta received the COSM Excellence in Medical Education Award and Dr. Nicholas Reo received the BSoM Faculty Mentor Award for Basic Science Faculty.

2 Programs/Divisions

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

3 Fully Affiliated Faculty

Name and Academic Position	Research Interests
Campbell, Chad	<p>This past year I have served as the Undergraduate Program Director and as such was responsible for program evaluation, development and administration. In the Spring, I was the course director for BMB 1010: Topics in Biochemistry, BMB 2100: Introduction to Biochemistry and BMB 3900: Scientific Communications and taught in BMB 4230: Biochemistry and Molecular Biology II. In the Fall, I was the course director for BMB 1000: Freshman Seminar, BMB 2000: Careers in BMB, BMB 3850: Biochemistry Laboratory, BMB 4100: Senior Reflection and BMB 4210: Biochemistry and Molecular Biology I. Additionally, for the first time I used BMB 3990 to employ successful students from previous BMB 4210 semesters as learning assistants in the current semester of BMB 4210. I received very positive course evaluations from students in both the Spring and Fall semester. I have served as the BMB program advisor guiding students in our major and those transferring into our major towards successful graduation. Moreover, I have also participated on various different committees at the departmental (7) and college (3) level and worked with the department chair in efforts related to undergraduate program marketing and outreach and BMB major social gatherings. External to</p>

Name and Academic Position	Research Interests
Cho, Kwang-Jin	<p>institutional service I was also highly active in the research community as a publication reviewer (8 reviews) and reviewer of new content materials for publishers. Finally, I was able to grow as a professional through the attendance of the ASBMB Education Symposium where I was able to connect with many professors in the US, update my teaching pedagogies and learn more about program accreditation.</p> <p>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.</p> <p>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 plasma membrane interactions, and form the basis of a novel approach to inhibit K-Ras plasma membrane interaction.</p>
Craig, Michael	<p>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.</p>

Name and Academic Position	Research Interests
Kadokia, Madhavi	<p>My research program employs bench-based research that integrates clinical studies with the goal of translating biomedical research findings to the bedside. 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. Our studies demonstrated that vitamin D receptor (VDR) is regulated by p63 and p73, another member of the p53 family and its biological significance. Our studies on examining the mechanism behind feedback regulation of p63 by VDR and VD3 demonstrated a dose dependent effect of VD3 on inhibition or promotion of cell survival which further provided an insight into its use as a chemotherapeutic adjuvant for anti-cancer therapy and fill the gap in the understanding of VD3 mediated regulation of Np63 levels and its role in the development and progression of non-melanoma skin cancer. We have identified the histone acetyltransferase TIP60 as a regulator of p63 stability and activity. Since TIP60 regulates the cellular response to DNA damage, we are investigating the potential implications of the TIP60/p63 axis in the DNA damage response and chemoresistance. Further, we have identified a novel mechanism by which p63 regulates cancer cell migration and invasion through regulation of the rho GTPase RAC1, thus providing key insights into the role that p63 plays in cancer progression and metastasis. Taken together, these studies will address the discrepancy whether VD3 inhibits or promotes cell survival and provide further insight into the role that p63 plays in its use as a chemotherapeutic adjuvant for anti-cancer therapy and fill the gap in the understanding of VD3 mediated regulation of Np63 levels and its role in the development and progression of non-melanoma skin cancer. Further, my laboratory is currently focused on identification of microRNAs regulated by p63 and how it impacts its downstream signaling and its role in cancer progression.</p> <p>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</p>

Name and Academic Position	Research Interests
	<p>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 Barretts 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 EAC, 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.</p> <p>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.</p>
Leffak,Ira	<p>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.</p>
Long, Weiwen	<p>Below are the personnel who have worked in the lab during 2019. We have been actively performing research projects as described below.</p> <p>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</p>

Name and Academic Position	Research Interests
	<p>been conducting experiments for developing new research projects in the lab.</p> <p>2. Marion Morel, Postdoctoral Fellow, has been working on the role of FBXL16 in regulating the stability of oncoproteins in cancers, including ERK3, c-myc and ERK3.</p> <p>3. Astha Shakya: was originally a BMS Ph.D. student and later changed to be a BMB Master student. She worked on a project about the regulation of IL-6/Stat3 signaling pathway by ERK3.</p> <p>4. Amanda Kaye Myers, a BMS Ph.D. student, has been working on a project about the role of ERK3 in regulating phospho-lipid signaling.</p> <p>5. Krushangi Shah, a BMS Ph.D. student, has been working on a project about the role of FBXL16 in ER+ breast cancer.</p> <p>7. Eid Alshammari, a BMB master student, worked on a project about the interplay of P63 and ERK3 in skin cancer.</p> <p>8. Nicole Walters, a BMB Master student, has been working on the role of FBXL16 in regulating ER alpha protein stability in breast cancer.</p> <p>9. Katherine A. Popp, a BMB Honor undergraduate student, worked on a project on the regulation of ERK3 subcellular localization by DGKzeta.</p>
Markey, Michael	<p>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.</p> <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. We are also undertaking a survey of MDM4 splice variation in human skin and melanomas.</p>
Paietta, John	<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</p>

Name and Academic Position	Research Interests
Ren, Hongmei	<p data-bbox="675 226 1386 321">of a complex control network of regulatory proteins that sense the level of sulfur and direct subsequent cellular responses.</p> <p data-bbox="675 369 1386 898">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 data-bbox="675 940 1386 1535">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 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.</p>
Reo, Nicholas	<p data-bbox="675 1587 1386 1879">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</p>

Name and Academic Position	Research Interests
	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.
Schmidt, Michael	<p>Miami University, Oxford, OH May 2012 Ph.D. Chemistry and Biochemistry (Ann Hagerman, advisor) Dissertation Title: Tannins in Natural Soil Systems</p> <p>Edinboro University, Edinboro, PA May 2007 B.S. Biochemistry</p>

4 Teaching

Baccalaureate

Dr. Campbell **Spring 2019**

BMB 2100: Introduction to Biochemistry, 2 credit hours, 12 students, 24 total contact hours (21 lecture hours, 3 non-contact hours), Classroom course, Course Director: Chad Campbell, Taught all lectures mostly in the active learning style to introduce the fundamental concepts of Biochemistry. Also created and graded all assessments in the course.

BMB 3900: Scientific Communications, 2 credit hours, 5 students, 23 total contact hours (22 lecture hours, 1 non-contact hours), Classroom course, Course Director: Chad Campbell, My role in this course was to facilitate the improvement of scientific writing through many drafts and revisions of a standard IMRaD style journal article. In addition, students learned about scientific grant proposals, alternative science writing genres and various scientific article reading strategies.

BMB 4230: Biochemistry and Molecular Biology II, 3 credit hours, 43 students, 13 total contact hours (10 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Dr. Oleg Paliy. It was my responsibility to teach 10 lectures about cellular signaling and Whole-body Metabolism and run one review session and generate one final exam, which was also proctored.

Fall 2019

BMB 1000: Freshman Seminar, .5 credit hours, 15 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 1010: Topics In Biochemistry, .5 credit hours, 23 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 2000: Careers in BMB, 1 credit hour, 15 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 3850: Biochemistry Laboratory, 3 credit hours, 14 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 3990: Undergraduate Teaching Assistant, 2 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 4100: Senior Reflection, 1 credit hour, 10 students, 16 total contact hours (14 lecture hours, 2 non-contact hours), Classroom course, Course Director: Chad Campbell. The purpose of this course is for BMB students to finalize their learning centered portfolios, generate career documents towards the application to a job or higher education degree, to evaluate the BMB program and produce and present a final senior project. I facilitated all the above objectives with one on one mentoring with each student.

BMB 4210: Biochemistry and Molecular Biology I, 3 credit hours, 88 students, 43 total contact hours (38 lecture hours, 5 non-contact hours), Team taught, Classroom course, Course Director: Dr. Chad Campbell, It was my responsibility to cover all lectures in the course. I also generated four in class assessments on those lectures all of which I proctored. This course has been completely 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.

Dr. Cho**Spring 2019**

BMB 1010: Topics in Biochemistry and Molecular Biology, .5 credit hours, 23 students, 0 total contact hours (0 lecture hours, 0 non-contact hours), Classroom course, Course Director: Chad Campbell, I shadowed Dr. Chad Campbell for the whole semester.

Dr. Campbell and I occasionally met outside of the classroom to discuss about how to run the class.

BMB 4750: Molecular Biology of Cancer, 3 credit hours, 5 students, 7.5 total contact hours (6 lecture hours, 1.5 non-contact hours), Team taught, Classroom course, Course Director: Dr. Michael Markey, I prepared lecture material and taught 4 classes. Also participated in proctoring the final exam.

Fall 2019

BMB-4444: Cell Signaling, 3 credit hours, 6 students, 13.5 total contact hours (12 lecture hours, 1.5 non-contact hours), Team taught, Classroom course, Course Director: D. Weiwen Long, My teaching hours for this course were 12 hours. It was a new course, so I had to develop the lectures from the scratch.

BMB 4020: Research Perspectives in Biochemistry and Molecular Biology, 3 credit hours, 12 students, 1 total contact hours (1 lecture hours, 0 non-contact hours), Classroom course, Course Director: Dr. John Paietta, I presented and discussed one of my research article with students for 1 hour. Also, Ms. Ms. Nicole Walters performed a rotation in my laboratory on 8/26/19 - 9/27/19.

BMB 4870-01: Biochemistry Seminar (Brown Bag), 1 credit hour, 13 students, total contact hours (lecture hours, non-contact hours), Seminar

Dr. Craig
Spring 2019

BMB3900: Scientific Communication, 2 credit hours, 5 students, 5 total contact hours (5 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Chad Campbell, Prepared lectures and in-class activities for 5 lectures. Observed the rest of the class sessions throughout the course.

Fall 2019

BMB3850: Biochemistry Laboratory, 3 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

Dr. Leffak
Spring 2019

BMB 4750: Mol. Biol. of Cancer, 3 credit hours, 5 students, 3 total contact hours (3 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Dr. Markey, 3 class meetings

BMB 4990: Undergraduate Research, 1 credit hour, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

Summer 2019

BMB 4990: Undergraduate Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 4990: Undergraduate Research, 3 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

Dr. Long
Spring 2019

BMB 4750: Molecular Biology of Cancer, 3 credit hours, 5 students, 6 total contact hours (6 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Michael Markey. My lectures were focused on cancer angiogenesis and metastasis. I taught 4 lectures (totally about 6 lecture hours).

BIO 4990-04: Undergraduate Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Summer 2019

BMB 4950 C01: Honors Research in Biochemistry - BMB 4950 C01, 4 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 4444: Cell Signaling - BMB 4444 01, 3 credit hours, 6 students, 19.5 total contact hours (16.5 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Julian Cambroner, I was the course director and taught 11 lectures (1 hr and 30 min each) and 2 exams (3 hrs)

BMB 4990 01: Undergraduate Research - BMB 4990 01, 4.5 credit hours, 8 students, total contact hours (lecture hours, non-contact hours), Laboratory

Dr. Markey**Spring 2019**

BMB 4700: Molecular Biology of RNA, 3 credit hours, 10 students, 6 total contact hours (6 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Covered 4 lectures of class during the strike.

BMB 4750: Molecular Biology of Cancer, 3 credit hours, 5 students, 19.5 total contact hours (19.5 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Michael Markey, Directed the class. Taught 13 class periods including lectures, exams, and a review session.

Summer 2019

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

Fall 2019

BMB 3850: Biochemistry Laboratory, 3 credit hours, 14 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 4020: Research Perspectives, 1 credit hour, 9 students, 1 total contact hours (1 lecture hour, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Taught one session about my research.

Dr. Paietta**Spring 2019**

BMB 3030: Research Ethics, 1 credit hour, 12 students, 16 total contact hours (14 lecture hours, 2 non-contact hours), Classroom course, Course Director: John Paietta, Course director and instructor. Instructor for all 14 weeks of course

BMB 4700: Molecular Biology of RNA, 3 credit hours, 11 student, 43 total contact hours (40 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Dr. John Paietta, Course director and instructor for majority of course. Newly developed course.

BMB 4700: Molecular Biology of RNA, 3 credit hours, 11 student, 43 total contact hours (40 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Dr. John Paietta, Course director and instructor for majority of course. Newly developed course.

BMB 4020: Research Perspectives, 1 credit hour, 9 students, 5 total contact hours (4 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 course was taught by myself and by other BMB faculty (1 class meeting/faculty). This was the third run of the undergraduate portion of Research Perspectives under the BMB 4020 listing.

Dr. Paliy

Spring 2019

BMB 4230: Biochemistry II, 3 credit hours, 42 students, 22 total contact hours (20 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Oleg Paliy, Course director, taught section on carbohydrate metabolism

BMB 4750: Molecular Biology of Cancer, 3 credit hours, 5 students, 3.5 total contact hours (3 lecture hours, .5 non-contact hours), Team taught, Classroom course, Course Director: Michael Markey, Taught a section of the class focused on the inheritance of human microbiota. The class was cross-listed with BMS 7670

BMB 4870: Brownbag seminar for undergraduate students, 1 credit hour, 4 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 4990: Undergraduate Research, 2 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 4990: Undergraduate Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Summer 2019

BMB 4990: Undergraduate Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 4990: Undergraduate Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Dr. Ren

Spring 2019

BMB 4750: Molecular Biology of Cancer, 3 credit hours, 5 students, 6 total contact hours (6 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Dr. Michael Markey, I taught 6 lecture hours for this course

Fall 2019

BMB 4444: Cell Signaling, 3 credit hours, 6 students, 13 total contact hours (11 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Weiwen Long, I taught 11 lectures hours for this course

BMB-4990-09: Undergraduate Research, .5 to 15 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

BIO-4950-01: Senior Honors Research, .5 to 15 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Dr. Reo

Spring 2019

BMB 4000: Biochemistry Seminar, 1 credit hour, 24 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 4230: Biochemistry & Molecular Biology II, 3 credit hours, 42 students, 10 total contact hours (8 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Oleg Paliy, I provide 8 one-hour lectures + 1 one-hour review class + 1 exam

BMB 4990: Biochemistry Research, 2 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

BMB 4990: Biochemistry Research, 3 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 4000: Biochemistry Seminar, 1 credit hour, 18 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 4020: Research Perspectives, 1 credit hour, 9 students, 1 total contact hours (1 lecture hour, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, I gave a 1 hour presentation on my research. This course is cross-listed with BMB 6020.

Dr. Schmidt

Spring 2019

BMB 2100: Intro to Biochemistry, 2 credit hours, 12 students, 5 total contact hours (4 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Chad Campbell, I taught during the AAUP strike

BMB 4001: Fundamentals of Biochemistry, 3 credit hours, 21 student, 48 total contact hours (40 lecture hours, 8 non-contact hours), Classroom course, Course Director: Michael Schmidt, I was the course director and taught the entire course

BMB 4001: Fundamentals of Biochemistry A, 3 credit hours, 21 student, 42 total contact hours (40 lecture hours, 2 non-contact hours), Classroom course, Course Director: Michael Schmidt, I was the course director and taught the entire course (mostly online)

Summer 2019

BMB 4001: Fundamentals of Biochemistry B, 3 credit hours, 18 students, 42 total contact hours (40 lecture hours, 2 non-contact hours), Classroom course, Course Director: Michael Schmidt, I was the course director and taught the entire course (mostly online)

Fall 2019

BMB 3850: Biochem Lab, 3 credit hours, 14 students, total contact hours (lecture hours, non-contact hours), Team taught, Laboratory

BMB 4001: Fundamentals of Biochemistry, 3 credit hours, 15 students, 48 total contact hours (40 lecture hours, 8 non-contact hours), Classroom course, Course Director: Michael Schmidt, I was the course director and taught the entire course

Graduate students, including thesis supervision

Dr. Cho

Spring 2019

BMB 7520: Molecular Biochemistry II, 3 credit hours, 19 students, 9 total contact hours (6 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: Dr. Nick

Reo, I prepared my teaching material and taught 6 classes. Also participated in proctoring the final exam and exam review session.

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

Summer 2019

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

Fall 2019

BMB 6020: Research Perspectives in Biochemistry and Molecular Biology, 3 credit hours, 12 students, 1 total contact hours (1 lecture hours, 0 non-contact hours), Classroom course, Course Director: Dr. John Paietta, I presented and discussed one of my research article with students for 1 hour. Also, Ms. Ms. Nicole Walters performed a rotation in my laboratory on 8/26/19 - 9/27/19.

BMB 8000-01: Biochemistry Seminar (Brown Bag), 1 credit hour, 13 students, total contact hours (lecture hours, non-contact hours), Seminar

BMS 9900-06: Biochemistry Seminar (Brown Bag), 1 credit hour, 13 students, total contact hours (lecture hours, non-contact hours), Seminar

Dr. Craig

Spring 2019

BMB7670: Molecular Basis of Inherited Disease, 3 credit hours, students, 1 total contact hours (1 lecture hour, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta.

Dr. Kadakia

Spring 2019

BMS 8990: Biochemistry Research, 10.5 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9950: Non-Dissertation Research, 10 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

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

Summer 2019

BMS 8990: Biochemistry Research, 1 credit hour, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation Research, 9 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

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

Fall 2019

BMS 9990: Dissertation Research, 11 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

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

Dr. Leffak

Spring 2019

BMB 7030: Research Ethics, .5 credit hours, 6 students, 8 total contact hours (8 lecture hours, 0 non-contact hours), Classroom course, Course Director: ML, teacher

BMB 7670: Molecular Basis of Inherited Disease, 3 credit hours, 5 students, 18 total contact hours (14 lecture hours, 4 non-contact hours), Team taught, Classroom course, Course Director: ML, course organizer

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

BMS 7030: Research Ethics, .5 credit hours, 6 students, 8 total contact hours (8 lecture hours, 0 non-contact hours), Classroom course, Course Director: ML, teacher

BMS 7670: Molecular Basis of Inherited Disease, 3 credit hours, 4 students, 18 total contact hours (14 lecture hours, 4 non-contact hours), Team taught, Classroom course, Course Director: ML, course organizer

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

BMS 9970: Laboratory Rotation, 1 credit hour, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9970: Laboratory Rotation, 2 credit hours, 1 student, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 7500: Molecular Biochemistry, 3 credit hours, 21 student, 25 total contact hours (19 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: ML, course organizer

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

BMS 7500: Molecular Biochemistry, 3 credit hours, 5 students, 25 total contact hours (19 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: ML, course organizer

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

Dr. Long

Spring 2019

BMB 7670: Molecular basis of inherited diseases, 3 credit hours, 9 students, 16 total contact hours (10.5 lecture hours, 5.5 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 7 lectures and attended Proposal presentations.

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

BMS 9990: Dissertation Research - BMS 9990 04, 4 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation Research - BMS 9990 03, 3 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990: Dissertation Research - BMS 9990 01, 1 credit hour, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

Summer 2019

BMS 9990 C06: Dissertation Research - BMS 9990 C06, 6 credit hours, 15 students, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMS 9990 04: Dissertation Research -BMS 9990 04, 4 credit hours, 5 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 9990 05: Dissertation Research - BMS 9990 05, 5 credit hours, 10 students, total contact hours (lecture hours, non-contact hours), Laboratory

Dr. Markey

Spring 2019

BMB 8990: Biochemistry Research, 3 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

Summer 2019

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

Fall 2019

BMB 6020: Research Perspectives, 1 credit hour, 3 students, 1 total contact hours (1 lecture hour, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Taught one session about my research.

BMB 7660: Systems Biology, 3 credit hours, 8 students, 13.5 total contact hours (13.5 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Oleg Paliy,

Covered 9 class periods, 13.5 hours of class. Assigned and graded papers to discuss, homework assignments, one exam, and TBL questions.

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

Dr. Paietta

Spring 2019

BMB 7670: Molecular Basis of Inherited Disease, 3 credit hours, 5 students, 6 total contact hours (5 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, 3 credit hours, 3 students, total contact hours (lecture hours, non-contact hours), Laboratory

BMS 7670: Molecular Basis of Inherited Disease, 3 credit hours, 4 students, 6 total contact hours (5 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.

Summer 2019

BMB 8990: Biochemistry Research, 6 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

Fall 2019

BMB 6020: Research Perspectives, 3 credit hours, 3 students, 5 total contact hours (4 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Ran course in role as Director of BMB M.S. Program. The course was taught by myself and by other BMB faculty (1 class meeting/faculty). BMB 6020 is taken by MS students and is cross-listed with BMB 4020. Coordinated graduate student lab selection and related course assignments.

Dr. Paliy

Spring 2019

BMB 7670: Molecular Basis of Inherited Diseases, 3 credit hours, 9 students, 6.75 total contact hours (6 lecture hours, .75 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 8000: Brownbag seminar, 1 credit hour, 8 students, total contact hours (lecture hours, non-contact hours), Seminar

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

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

Summer 2019

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

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

Fall 2019

BMB 7660: Systems Biology, 3 credit hours, 8 students, 18.5 total contact hours (17 lecture hours, 1.5 non-contact hours), Team taught, Classroom course, Course Director: Oleg Paliy, Course director, developed and oversaw the course, taught sections on microbial ecology and multivariate statistics, ran team-based learning exercise. The class was cross-listed with BMS 9910 - 03 and ES 7990 – 05

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

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

Dr. Ren**Spring 2019**

BMB 7670: Molecular Basis of Inherited diseases, 3 credit hours, 9 students, 8 total contact hours (6 lecture hours, 2 non-contact hours), Team taught, Classroom course, Course Director: Dr. Michael Leffak , I taught 6 lecture hours for this course

Fall 2019

BMB 8990-C09: Non-Dissertation Research, 21 credit hours, 2 students, total contact hours (lecture hours, non-contact hours), Laboratory

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

Dr. Reo**Spring 2019**

BMB 9000: Biochemistry Seminar, 1 credit hour, 24 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB/BMS 7520: Biochemistry & Molecular Biology II, 3 credit hours, 19 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.

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

Summer 2019

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

SMD 8570: Origins 1, 10 credit hours, 120 students, 22.5 total contact hours (19.5 lecture hours, 3 non-contact hours), Team taught, Classroom course, Course Director: John Paietta & Michael Matott, Peer Instruction (13.5 h) + Team-based Learning (6 h) + 2-h review session + 1 hr review. NOTE: This course spans Summer and Fall semesters.

Fall 2019

BMB 4000: Biochemistry Seminar, 1 credit hour, 18 students, total contact hours (lecture hours, non-contact hours), Seminar

BMB 6020: Research Perspectives, 3 credit hours, 3 students, 1 total contact hours (1 lecture hour, 0 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, I gave a 1 hour presentation on my research. This course is cross-listed with BMB 4020.

BMB 7660: Systems Biology, 3 credit hours, 8 students, 8 total contact hours (7 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Oleg Paliy, I presented 7 hr of lecture + 1 HW assignment + 1 Exam. I also prepared a team learning activity for the class and graded this written project for two teams.

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

Dr. Schmidt

Spring 2019

BMB 7520: Molecular Biochem II, 3 credit hours, 19 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

Fall 2019

BMB 7500: Molecular Biochemistry 1, 3 credit hours, 26 students, 23 total contact hours (19 lecture hours, 4 non-contact hours), Team taught, Classroom course, Course Director: Michael Leffak, I taught the first half of this course. Covering the introductory information along with the material about proteins and enzymes.

Undergraduate medical education

Dr. Long

Fall 2019

Medical School course: Origins, credit hours, n/a students, 3 total contact hours (3 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: I taught Peer Instruction 18: Receptors and Signaling, which has 3 lecture hours.

Dr. Markey

Fall 2019

SMD 817520: Origins II, 9 credit hours, 120 students, 9 total contact hours (9 lecture hours, 0 non-contact hours), Team taught, Classroom course, Course Director: Smita Krishnamurthy, Two peer instruction sessions, One TBL for Neoplasia section. I did the classroom session design and presentation as well as the writing of the questions.

Dr. Paietta

Fall 2019

SMD 8170: Origins, 7 credit hours, 120 students, 56 total contact hours (26 lecture hours, 30 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, Module (course) co-director. Involved in the synthesis, organization and implementation of this module as part of the new curriculum 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, my course director/instructor duties (review sessions, exam construction, targeted individual, TBL assistance, and group help sessions) continued from July 29, 2019 to the final Dec. 20, 2019 (and through the final exam retake Jan. 3, 2020.)

Dr. Reo
Fall 2019

P&N 6300: Medical Cell Biology & Physiology, 3 credit hours, 8 students, 13 total contact hours (8 lecture hours, 5 non-contact hours), Team taught, Classroom course, Course Director: Adrian Corbett, I provided 8 hrs of lecture + 2 quizzes (20 min each) + 1 midterm exam (30%). I also attended two classes in which students gave presentations on various topics. I participated in the grading processes for these oral presentations (4 hrs). Thus the total contact hours for non-lecture is 5 hrs.

Dr. Schmidt
Spring 2019

Dr. Schmidt, Spring 2019, N/A: Wright Q First Year, credit hours, 8 students, 25 total contact hours (24 lecture hours, 1 non-contact hours), Team taught, Classroom course, Course Director: Amanda Bell, I was trained and conducted Wright sessions.

Fall 2019

WQC8102.2019: Origins 1, credit hours, 120 students, 28 total contact hours (22 lecture hours, 6 non-contact hours), Team taught, Classroom course, Course Director: John Paietta, I was responsible for just over 1/3 of the PI material.

Graduate student thesis supervisor

Dr. Cho

BMB, PhD student committee, Amjad Aljagthmi
BMB, MS student committee, Abdulrahman (Abdi) Jama
BMB, MS student committee, Trupthi Metha
BMB, MS student committee chair, Christian Garrido
BMB, MS student committee chair, Sarah Kovar

Dr. Kadakia

BMB, Mentor for Masters student Akshay Hira
BMB, Mentor for Masters student Eid Alshammari
BMB, MS student committee, Astha Shakya
BMB, MS student committee, Stacy Simmons
BMB, PhD student committee, Krushangi Shaw
BMS, Mentor for PhD student, Amjad Alahthmi
BMS, Mentor for PhD student, Andrew Stacy
BMS, MS student committee, John Trombley

BMS, PhD Student Committee, Reilly Clark

Dr. Leffak

Student Research Committee, Amanda Myers
Student Research Committee, Daniel Miranda
Student Research Committee, Jama Abdulrahman
Student Research Committee, John Trombley
Student Research Committee, Melissa Ward
Student Research Committee, Sara Seibert

Dr. Long

BMB, PhD student committee, Stacy, Andrew J.
BMB, PhD student committee, Amjad Aljagthmi
BMS, PhD student committee, Prithy Martis
PharmTox, PhD student committee, Langni Liu
Biology, PhD student committee, Rajalakshmi Santhanakrishnan
BMS, PhD student committee, Christopher A. Waker
Biology, PhD student committee, Melissa J. Ward
BMB, PhD student committee, Rujuta YashodhanGadgil
BCBP, PhD student committee, Jananie Rockwood
BMB, PhD student committee, Abdulrahman Jama
BMB, PhD student committee, Abdullah Ali Alshudukhi

Dr. Markey

BMB, Akshay Hira M.S. committee
BMB, Andrew Browder M.S. committee
BMB, John Trombley M.S. committee
BMB, Padmashri Pasad M.S. committee
BMB, Weismann travel grant committee
BMS, Alex Gordon PhD committee
BMS, Andrew Stacy PhD committee
BMS, Langni Liu PhD committee
BMS, Prithy Martis PhD committee

Dr. Paietta

Student Research Committee for Sumudu Rajakaruna (Ph.D. student)

Dr. Paliy

Student Research Committee, BMS representative on BMS PhD committee for: Xiu-Huan Yap
Committee member for BMS PhD student: Angela Campo
Committee member for BMS PhD student: Sara Seibert
Thesis director for BMS PhD student: Alex Grodon
Thesis director for ES PhD student: Sumudu Rajakaruna

Dr. Ren

Akshay Hira's Master's Dissertation Committee
Amanda Kaye Myers's PhD Dissertation Committee
Astha Shakya's Master's Dissertation Committee
Eid Salem Alshammari's Master's Dissertation Committee
Ishita Haider's PhD Dissertation Committee

Jananie Rockwood's PhD Dissertation Committee
Krushangi Nirav Shah's PhD Dissertation Committee
Mentor in Rajsi Yogeshkumar Thakers Masters Dissertation Committee
Mentor in Abdullah A Alshudukhis PhD Dissertation Committee
Mentor in Abdulrahman Jamas Masters and PhD Dissertation Committee
Mentor in Sandhya R. Sattiraju's Master's Dissertation Committee

Dr. Reo

BMB MS Thesis Committee (Andrew Browder)
BMS Ph.D. Dissertation Committee (Abdullah Alshudukhi)
BMS Ph.D. Dissertation Committee (Angela Campo)
BMS Ph.D. Dissertation Committee (Denise Kramer)
BMS Ph.D. Dissertation Committee (Xiu Huan Yap)
MS Thesis Committee (Mohammad Awad)

5 Scholarly Activity

Funded grants

Extramural

Dr. Cho

NIH/NCI, K-RAS PLASMA MEMBRANE INTERACTIONS: A TRACTABLE THERAPEUTIC TARGET, P.I. Kwang-Jin Cho, (01/01/2019 to 11/30/2019) Total \$228250, Direct Current Year \$154223, Indirect Current Year \$74027, Total cost for entire grant period \$747000, 16.67% salary for Dr. Cho.

Dr. Craig

Office of Naval Research-Multi University Research Investigation (MURI), Precision High Intensity Training through Epigenetics, P.I. Dr. Timothy Broderick, (9/1/2016 to 8/31/2021) Total \$256093.59, Direct Current Year \$172399.54, Indirect Current Year \$83694.05, Total cost for entire grant period \$1508485.

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 8/31/2021) Total \$256093.59, Direct Current Year \$172399.54, Indirect Current Year \$83694.05, Total cost for entire grant period \$1508485, 10% 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 \$11195.68, Direct Current Year \$8238.05, Indirect Current Year \$2957.63, 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, (06/01/2019 to 5/31/2020) Total \$338550, Direct Current Year \$228750, Indirect Current Year \$109800, Total cost for entire grant period \$1692750, 25% salary for Dr. Long.

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.

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.

American Heart Association, Protective effects of short chain fatty acids against infective endocarditis, P.I. Dr. Yvonne Sun, (01/01/2016 to 12/31/2019) Total \$0, Direct Current Year \$0, Indirect Current Year \$0, Total cost for entire grant period \$28000, 5% salary for Dr. Paliy.

U Wisconsin - Milwaukee RGI, Understanding and enhancing rhizobium-cereal interactions, P.I. Dr Gyaneshwar Prasad, (04/26/2018 to 06/30/2020) Total \$10000, Direct Current Year \$10000, Indirect Current Year \$0, Total cost for entire grant period \$30000, 3% salary for Dr. Paliy.

Dr. Ren

NIH 1R01NS102720-01A1, Exosomes from miR-primed endothelial progenitor cells for treating ischemic stroke, P.I. Ji Bihl Chen, (07/01/2018 to 06/30/2023) Total \$1860000, Direct Current Year \$1250000, Indirect Current Year \$610000, 10% salary for Dr. Ren.

Dr. Reo

DoD, Henry Jackson Foundation for the Advancement of Military Medicine, Mechanistic Interpretations of Hypobaric and Hyperoxia Using Metabolomics and Proteomics, P.I. Nicholas V. Reo, (7/1/2018 to 6/30/2019) Total \$35276, Direct Current Year \$23517, Indirect Current Year \$11759, Total cost for entire grant period \$70551, 2.5% salary for Dr. Reo.

DoD, Henry Jackson Foundation for Advancement of Military Medicine, Air Force Research Laboratory, Metabolomics Analysis of Urine and Fecal Extracts in Humans Exposed to High Altitude, P.I. Nicholas V. Reo, (11/1/2018 to 5/31/2019) Total \$68610, Direct Current Year \$47069, Indirect Current Year \$21541, Total cost for entire grant period \$96054, 15% salary for Dr. Reo.

DoD, Henry Jackson Foundation for Advancement of Military Medicine, Air Force Research Laboratory, Metabolomics Analysis of Urine and Fecal Extracts in Humans Exposed to High Altitude, P.I. Nicholas V. Reo, (10/1/2019 to 12/31/2019) Total \$19074, Direct Current Year \$12716, Indirect Current Year \$6358, Total cost for entire grant period \$19074, 7% salary for Dr. Reo.

Internal

Dr. Markey

Ashot Kozak, Ph.D., Comprehensive codon sequencing to verify changes to mouse Trpm7 genotype, P.I. Michael Markey, (1/7/2019 to 5/8/2019) Total \$1900, Direct Current Year \$1900, Indirect Current Year \$0, Total cost for entire grant period \$1900.

ITarun Goswami, Ph.D., Hydrogel effect on cultured keratinocytes, P.I. Michael Markey, (10/11/2019 to 11/20/2019) Total \$2285.83, Direct Current Year \$2285.83, Indirect Current Year \$0, Total cost for entire grant period \$2286.

Extramural - Not Funded

Dr. Long

Ohio Cancer Research, Defining ERK3 as a Downstream Target and Effector of BRAF Signaling: A New Potential Mechanism of Drug Resistance in Melanoma, P.I. Weiwen Long, Ph.D., 10% effort without salary request, Submitted 09/26/2019, Requested Total \$60000, Direct \$54546, Indirect \$5454 (Not Funded).

Dept. of the Army -- USAMRAA/DOD CDMRP Melanoma Research Program, Defining ERK3 as a Downstream Target and Effector of BRAF Signaling: A New Potential Mechanism of Drug Resistance in Melanoma, P.I. Weiwen Long, Ph.D., 3.6 calendar months/30% effort, Submitted 09/26/2019, Requested Total \$433678, Direct \$300000, Indirect \$133678 (Not Funded).

National Cancer Institute, Role of Np63 and TIP60 in Skin SCC Progression and Chemo resistance, P.I. Weiwen Long, Submitted 06/01/2019, Requested Total \$1875006, Direct \$1250000, Indirect \$625006 (Not Funded).

Dr. Ren

Sloan Research Fellowship, A potential therapeutic treatment for DMD, P.I. Hongmei Ren, Submitted 11/26/2019, Requested Total \$145000, Direct \$145000, Indirect \$0 (Not Funded).

DoD (DMD research program) Idea Development Award, Roles of lipin1 in skeletal muscle function and muscular dystrophy, P.I. Hongmei Ren, Submitted 8/19/2019, Requested Total \$330000, Direct \$300000, Indirect \$30000 (Not Funded).

Internal - Not Funded

Dr. Ren

Faculty Women in Science Giving Circle Award, The role of lipin1 in maintaining myofiber stability and integrity in Duchenne Muscular Dystrophy, P.I. Hongmei Ren, Submitted 04/01/2019, Requested Total \$5000, Direct \$5000, Indirect \$0 (Not Funded).

Extramural – Pending

Dr. Cho

Alfred P. Sloan Foundation, 2020 Alfred P. Sloan Research Fellowships in Computational and Evolutionary Molecular Biology, P.I. Kwang-jin Cho, Submitted 09/13/2019, Requested Total \$75000, Direct \$75000, Indirect \$0 (Pending).

Dr. Markey

Melanoma Research Alliance, Isoform analysis of MDM4 expression in melanoma to inform therapy design, P.I. Michael Markey, Submitted 11/18/2019, Requested Total \$99827, Direct \$99827, Indirect \$0 (Pending).

NIH, Mutagenic DNA replication in geriatric human skin, P.I. Michael Kemp, Submitted 10/3/2019, Requested Total \$2093947, Direct \$1470765, Indirect \$623182 (Pending).

NIH, Novel arterial sheath for stroke and other neurovascular interventions, P.I. Michael Markey, Submitted 8/14/2019, Requested Total \$183121, Direct \$122080, Indirect \$61041 (Pending).

Dr. Ren

Muscular Dystrophy Association, Lipin1 gene delivery improves dystrophic muscle pathology and function, P.I. Hongmei Ren, Submitted 11/26/2019, Requested Total \$330000, Direct \$300000, Indirect \$30000 (Pending).

NIH R01, The role of lipin1 in maintaining myofiber stability and integrity in Duchenne muscular dystrophy, P.I. Hongmei Ren, Submitted 10/24/2019, Requested Total \$1500000, Direct \$1000000, Indirect \$500000 (Pending).

Dr. Reo

DoD, Air Force Office of Scientific Research, Defense University Research Instrumentation Program (DURIP), To Establish a Joint DOD and WSU Center of Neuroimaging and Neuro-Evaluation of Cognitive Technologies, P.I. Matthew Sherwood, Submitted 5/17/2019, Requested Total \$1100000, Direct \$1100000, Indirect \$0 (Pending).

Publications

Papers in refereed journals

Dr. Cho

A.A. Gorfe and K.-J. Cho, 'Approaches to inhibiting oncogenic K-Ras', Small GTPase, 1-10, 2019.

J. Jung, K.-J. Cho, A. K. Najji, K. N. Clemons, C. O. Wong, M. Villanueva, S. Gregory, N. E. Karagas, L. Tan, H. Liang, M. A. Rousseau, K. M. Tomasevich, A. G. Sikora, I. Levental, D. V. Hoeven, Y. Zhou, J. F. Hancock, K. Venkatachalam, 'HRAS-driven cancer cells are vulnerable to TRPML1 inhibition', EMRO Reports, 20, 2019.

L. Tan, K.-J. Cho, W.E. Kattan, C.M. Garrido, Y. Zhou, P. Neupane, R. J. Capon, J. F. Hancock, 'Acylpeptide hydrolase is a novel regulator of KRAS plasma membrane localization and function', Journal of Cell Science, 132, 2019.

M. J. McCarthy, C. V. Pagba, P. Prakash, A. K. Najji, D.V. Hoeven, H. Liang, A. K. Gupta, Y. Zhou, K.-J. Cho, J. F. Hancock, and A. A. Gorfe, 'Discovery of High-Affinity Noncovalent Allosteric KRAS Inhibitors That Disrupt Effector Binding', ACS Omega, 4, 2921-2930, 2019.

Miller TE, Henkels KM, Huddleston M, Salisbury R, Hussain SM, Sasaki AT, Cho KJ., 'Depletion of phosphatidylinositol 4-phosphate at the Golgi translocates K-Ras to mitochondria', Journal of Cell Science, 132, 2019.

Dr. Craig

A.J. Stacy, J. Zhang, M.P. Craig, A. Hira, N. Dole and M.P. Kadakia, 'TIP60 up-regulates $\Delta Np63\alpha$ to promote cellular proliferation', Journal of Biological Chemistry, 294, 17007-17016, 2019.

M.P. Craig, S. Rajakaruna, O. Paliy, M. Sajjad, S. Madhavan, N. Reddy, J. Zhang M. Bottomley, S. Agrawal, and M.P. Kadakia, 'Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus, Clinical and Translational Gastroenterology, 11, 1-10, 2020.

Dr. Kadakia

AA Aljagthmi, NT Hill, M Cooke, MG Kazanietz, MC Abba, W Long and MP Kadakia, ' Δ Np63 α suppresses cells invasion by downregulating PKC /Rac1 signaling through miR-320a', Cell Death Dis, 12, 680, 2019.

AJ Stacy, J Zhang, MP Craig, A Hira, N Dole and MP Kadakia, 'TIP60 upregulates Δ Np63 α to promote cellular proliferation', J Biol Chem, 294, 17007-17016, 2019.

S Kim, L Xing, AE Islam, M Hisao, Y Ngo, OM Pavlyuk, RL Martineau, CM Hampton, C Crasto, J Slocik, MP Kadakia, JA Hagen, N Kelley-Loughnane, RR Naik, LF Drummy, 'In Operando Observation of Neuropeptide Capture and Release on Graphene Field-Effect Transistor Biosensors with Picomolar Sensitivity', ACS Appl Mater Interfaces, 11, 13927-13934, 2019.
Dr. Kadakia, Craig MP, Rajakaruna S, Paliy O, Sajjad M, Madhavan S, Reddy N, Zhang J, Bottomley M, Agrawal S, 'Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus', Clin Transl Gastroenterol, 11, 1-10, 2020.

Dr. Leffak

Gadgil, Rider, S.D., Lewis, T., Barthelemy, J., and Leffak, M., 'Analysis of Trinucleotide Repeat Stability by Integration at a Chromosomal Ectopic Site.', Methods Mol Biol., 2056, 2019.

Lewis, T. W., Barthelemy, J. R., Virts, E. L., Kennedy, F. M., Gadgil, R. Y., Wiek, C., Linka, R., Zhang, F., Andreassen, P. R., Hanenberg, H., Leffak, M., 'Deficiency of the Fanconi anemia E2 ubiquitin conjugase UBE2T only partially abrogates Alu-mediated recombination in a new model of homology dependent recombination.', Nucl. Acids Res., 47, 3503-3520, 2019.

Dr. Long

Aljagthmi AA, Hill NT, Cooke M, Kazanietz MG, Abba MC, Long W, Kadakia MP, ' Δ Np63 α suppresses cells invasion by downregulating PKC /Rac1 signaling through miR-320a', Cell Death Dis., 10, 680, 2019.

Elkhadragey L, Long W, 'A Radioactive in vitro ERK3 Kinase Assay', Bio-Protocol, 20, e3332, 2019.

Dr. Paliy

R.T. Agans, A. Gordon, S. Hussain, O. Paliy, 'Titanium Dioxide Nanoparticles Elicit Lower Direct Inhibitory Effect on Human Gut Microbiota Than Silver Nanoparticles', Tox Sci, 172, 411-416, 2019.

S. Pérez-Burillo, T. Mehta, A. Esteban-Muñoz, S. Pastoriza, O. Paliy, J.A. Rufián-Henares, 'Effect of in vitro digestion-fermentation on green and roasted coffee bioactivity: The role of the gut microbiota', Food Chemistry, 279, 252-259, 2019.

S. Pérez-Burillo, T. Mehta, S. Pastoriza, D.L. Kramer, O. Paliy, J.A. Rufián-Henares, Potential probiotic salami with dietary fiber modulates antioxidant capacity, short chain fatty acid production and gut microbiota community structure', LWT-Food Sci. Technol., 105, 355-362, 2019.

S. Rajakaruna, D.A. Freedman, A.R. Sehgal, X. Bui, and O. Paliy, 'Diet quality and body mass indices show opposite associations with distal gut microbiota in a low-income cohort', *J Food Sci Technol*, 4, 846-851, 2019.

Dr. Paliy, M.P. Craig, S. Rajakaruna, O. Paliy, M. Sajjad, S. Madhavan, N. Reddy, J. Zhang, M. Bottomley, S. Agrawal, M.P. Kadakia, 'Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus', *Clin Transl Gastroenterol*, 11, 1-10, 2020.

Dr. Ren

Dong L, Ma L, Ma GH, Ren H., 'Genome-wide Analysis Reveals DNA Methylation Alterations in Obesity Associated with High Risk of Colorectal Cancer.', *Sci Rep.*, 9 (1), 5100-5111, 2019.

Jama A, Huang D, Alshudukhi AA, Chrast R, Ren H., 'Lipin1 is required for skeletal muscle development by regulating MEF2c and MyoD expression.', *J Physiol.*, 597(3), 889-901., 2019.

Dr. Reo

I. Sibomana, N. Grobe, N.J. DelRaso, and N.V. Reo, 'Influence of Myo-inositol Plus Ethanolamine on Plasmalogens and Cell Viability During Oxidative Stress', *Chemical Research in Toxicology*, 32, 265-284, 2019.

N. Grobe, L. Narayanan, D.N. Brown, S.T. Law, I. Sibomana, P. Shiyanov, N.V. Reo, C.E. Hack, T.R. Sterner, and D.R. Mattie, 'Lipid, Water, and Protein Composition to Facilitate Kinetic Modeling of the Auditory Pathway', *Toxicology Mechanisms and Methods*, 29, 53-59, 2019.

N.J. DelRaso, C.A. Mauzy, B.A. Wong and N.V. Reo, 'Burn Pit Emission and Respirable Sand Exposures in Rats: NMR-based Urinary Metabolomics Assessment', *Air Force Research Laboratory Technical Reports*, AFRL-RH-WP-TR-2018-0061; AD1064148, 2019.

Significant presentations

Posters and Platform Presentations

Dr. Cho

T. E. Miller, K. M. Henkels, M., and K.-J. Cho, Depletion of phosphatidylinositol 4-phosphate at the Golgi translocates K-Ras to mitochondria, *FASEB Science Research Conference - The Regulation and Function of Small GTPases*, Olean, New York 06/23/2019 - 06/28/2019 (Poster).

S. E. Kovar, C. Fourman, C. Kinstedt, B. Williams, C. Morris, K.-J. Cho, D. M. Ketcha, Chalcones bearing a 3,4,5-trimethoxyphenyl motif are capable of selectively inhibiting oncogenic K-Ras signaling, *BOSM Central Research Forum, Wright State University* 10/17/2019 - 10/17/2019 (Poster).

C. Fourman, S. Kovar, C. Kinstedt, K.-J. Cho, and D. Ketcha, Lead Discovery for Pancreatic Cancer Therapy using Privileged Chalcone Scaffold, *2019 American Chemical Society - Dayton Section, Annual Poster Session, The Curran Place at the University of Dayton* 04/11/2019 - 04/11/2019 (Poster).

Dr. Craig

J. Zhang, M.P. Craig, A. Hira, M. Markey, M. Raymer, T. Broderick, and M. Kadakia, Differential MicroRNA Biomarker Expression in Response to Moderate and High Intensity Exercise Regimen, *BSOM Central Research Forum, Wright State University* 10/18/2019 - 10/18/2019

(Poster).

M.P. Craig, S. Rajakaruna, O. Paliy, M. Sajjad, S. Madhavan, N. Reddy, J. Zhang, M. Bottomley, S. Agrawal and M.P. Kadakia, Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus, BSOM Central Research Forum, Wright State University 9/19/2019 - 9/19/2019 (Poster).

J. Zhang, M.P. Craig, A. Hira, M. Markey, M. Raymer, T. Broderick, and M. Kadakia, Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus, COSM Festival of Research, Wright State University 9/19/2019 - 9/19/2019 (Poster).

N. Reddy, M.P. Craig, M. Sajjad, S. Agrawal and M.P. Kadakia, p63 Signatures in the Pathogenesis of Barrett's Esophagus, BSOM Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

N. Hmood, A. Hira, A.J. Stacy, M.P. Craig, J. Zhang, M.P. Kadakia, The role of Δ Np63 α and TIP60 in cisplatin-mediated DNA damage response, BSOM Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

A. Hira, A.J. Stacy, J. Zhang, M.P. Craig and M.P. Kadakia, TIP60 Regulation of Δ Np63 α is Associated with Cisplatin Resistance, BSOM Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

J. Zhang, M.P. Craig, A. Hira, M. Markey, T. Broderick and M.P. Kadakia, Differential MicroRNA Biomarker Expression in Response to Moderate and High Intensity Exercise Regimen, Ohio Physiological Society Meeting, Wright State University 9/19/2019 - 9/19/2019 (Poster).

A.J. Stacy, J. Zhang, M.P. Craig, A. Hira, N. Dole and M.P. Kadakia, TIP60 upregulates Δ Np63 α to promote cellular proliferation, Ohio Physiological Society Meeting, Wright State University 9/17/2019 - 9/17/2019 (Poster).

Dr. Kadakia

AJ Stacy and MP Kadakia, TIP60 upregulation of Np63 promotes cellular proliferation, BMB Brown Bag, Wright State University 9/24/2019 - 9/24/2019 (Platform).

A Aljagthmi, NT Hill, M Cooke, MG Kazanietz, MC Abba, W Long and MP Kadakia, Δ Np63 α suppresses cell invasion by modulating Rac1 activity, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

A Hira, AJ Stacy, J Zhang, MP Craig and MP Kadakia, TIP60 Regulation of Δ Np63 α is Associated with Cisplatin Resistance, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

N Hmood, A Hira, AJ Stacy, MP Craig, J Zhang and MP Kadakia, The role of Δ Np63 α and TIP60 in cisplatin-mediated DNA damage response, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

N Reddy, MP Craig, M Sajjad, A Agrawal and MP Kadakia, Δ Np63 α Signatures in the Pathogenesis of Barretts Esophagus, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

J Zhang, MP Craig, A Hira, M Markey, T Broderick and MP Kadakia, Differential MicroRNA Biomarker Expression in Response to Moderate and High Intensity Exercise Regimen, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

MP Craig, S Rajakaruna, O Paliy, M Sajjad, S Madhavan, N Reddy, J Zhang, M Bottomley, S Agrawal and MP Kadakia, Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus, Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

AJ Stacy and MP Kadakia, TIP60 upregulation of Δ Np63 α promotes cellular proliferation, Biomedical Sciences Seminar, Wright State University (Platform).

AJ Stacy, J Zhang, A Hira, MP Craig, MP Kadakia, TIP60 upregulates Δ Np63 α to promote cell proliferation and G2/M progression, CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

AJ Stacy and MP Kadakia, TIP60 regulation of Δ Np63 α promotes cellular proliferation, CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Platform).

A Hira, AJ Stacy, J Zhang, MP Craig and MP Kadakia, TIP60 regulation of Δ Np63 α is associated with cisplatin resistance, CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

A Aljagthmi and MP Kadakia, Np63 suppresses cell invasion by modulating Rac1 activity, BMB Brown Bag, Wright State University 9/17/2019 - 9/17/2019 (Platform).

J Zhang, MP Craig, A Hira, M Markey, T Broderick and MP Kadakia, Differential MicroRNA Biomarker Expression in Response to Moderate and High Intensity Exercise Regimen, CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

A Aljagthmi, NT Hill, M Cooke, MG Kazanietz, MC Abba, W Long and MP Kadakia, Δ Np63 α suppresses cell invasion by modulating Rac1 activity, Biomedical Sciences Seminar, Wright State University 9/16/2019 - 9/16/2019 (Platform).

AJ Stacy and MP Kadakia, TIP60 upregulation of Δ Np63 α promotes cellular proliferation, Weisman awardee presentation, Wright State University 5/15/2019 - 5/15/2019 (Platform).

A Hira, AJ Stacy, J Zhang, MP Craig and MP Kadakia, TIP60 upregulates Δ Np63 α to promote cell proliferation and G2/M progression, Ohio Physiological Society Meeting, Wright State University 9/20/2019 - 9/20/2019 (Poster).

A Aljagthmi and MP Kadakia, Δ Np63 α suppresses cell invasion by modulating Rac1 activity, Annual Meeting of the Ohio Valley Society of Toxicology, Procter and Gamble, Mason, OH 10/18/2019 - 10/18/2019 (Platform).

A Aljagthmi, NT Hill, M Cooke, MG Kazanietz, MC Abba, W Long and MP Kadakia, Δ Np63 α suppresses cell invasion by modulating Rac1 activity, Ohio Physiological Society Meeting, Wright State University 9/20/2019 - 9/20/2019 (Poster).

MP Craig, S Rajakaruna, O Paliy, M Sajjad, S Madhavan, N Reddy, J Zhang, M Bottomley, S Agrawal and MP Kadakia, Differential MicroRNA Signatures in the Pathogenesis of Barrett's Esophagus, Ohio Physiological Society Meeting, Wright State University 9/20/2019 - 9/20/2019

(Poster).

AJ Stacy, J Zhang, A Hira, MP Craig and MP Kadakia, TIP60 upregulates Δ Np63 α to promote cell proliferation and G2/M progression, Ohio Physiological Society Meeting, Wright State University 9/20/2019 - 9/20/2019 (Poster).

AJ Stacy, J Zhang, A Hira, MP Craig and MP Kadakia, TIP60 regulates Δ Np63 α and promotes SCC G2/M progression, Experimental Biology Conference, Orlando, Florida 4/8/2019 - 4/8/2019 (Poster).

AJ Stacy, J Zhang, A Hira, MP Craig and MP Kadakia, TIP60 upregulates Δ Np63 α to promote cell proliferation and G2/M progression, Annual Meeting of the Ohio Valley Society of Toxicology, Procter and Gamble, Mason, OH 10/18/2019 - 10/18/2019 (Poster).

Dr. Long

Astha Shakya, Minyi Chen, Michael Markey, Weiwen Long, ERK3 negatively regulates IL-6 signaling by suppressing STAT3 phosphorylations via SOC3, American Association for Cancer Research (AACR) Annual Conference 2019, Atlanta, GA 03-29-2019 - 04-03-2019 (Poster).

Amanda Myers, Hitham Aldharee, Shimpi Bedi, and Weiwen Long, Phosphatidic acid binds to ERK3 and stimulates phosphorylation of the ERK3 activation loop, American Association for Cancer Research (AACR) Annual Conference 2019, Atlanta, GA 03-29-2019 - 04-03-2019 (Poster).

Amanda Myers, Hitham Aldharee, Shimpi Bedi, and Weiwen Long, Phosphatidic acid binds to ERK3 and stimulates phosphorylation of the ERK3 activation loop, Boonshoft School of Medicine Central Research Forum, Wright State University, Dayton 10-17-2019 - 10-17-2019 (Poster).

Amanda Myers, Hitham Aldharee, Shimpi Bedi, and Weiwen Long, Phosphatidic acid binds to ERK3 and stimulates phosphorylation of the ERK3 activation loop, CoSM Festival of Research, Wright State University, Dayton 09-20-2019 - 09-20-2019 (Poster).

Katherine Popp, Amanda Myers, and Weiwen Long, ERK3 Interacts with DGK and May Alter its Subcellular Localization through the C34 Domain of ERK3, Boonshoft School of Medicine Central Research Forum, Wright State University, Dayton 10-17-2019 - 10-17-2019 (Poster).

Marion Morel and Weiwen Long, The F-box protein FBXL16 regulates the stability of c-myc oncoprotein, American Association for Cancer Research (AACR) Annual Conference 2019, Atlanta, GA 03-29-2019 - 04-03-2019 (Poster).

Marion Morel and Weiwen Long, The F-box protein FBXL16 regulates the stability of c-myc oncoprotein, Boonshoft School of Medicine Central Research Forum, Wright State University, Dayton 10-17-2019 - 10-17-2019 (Poster).

Krushangi Shah, Marion Morel, Weiwen Long, The F-Box protein FBXL16 inhibits SCF-E3 ligase activity and upregulates ER Signaling in breast Cancer, Gordon Research Conference/Hormone-Dependent Cancers, Newry, ME 04-08-2019 - 09-08-2019 (Poster).

Krushangi Shah, Marion Morel, Weiwen Long, The F-Box protein FBXL16 inhibits SCF-E3 ligase activity and upregulates ER Signaling in breast Cancer, BoSM Central Research Forum,

Wright State University, Dayton OH 10-17-2019 - 10-17-2019 (Poster).

Krushangi Shah, Marion Morel, Weiwen Long, The F-Box protein FBXL16 inhibits SCF-E3 ligase activity and upregulates ER Signaling in breast Cancer, CoSM Festival of Research, Wright State University, Dayton OH 09-20-2019 - 09-20-2019 (Poster).

Dr. Markey

M Markey, The Center for Genomics Research, BSoM Central Research Forum, Dayton, OH 10/17/2019 - 10/17/2019 (Poster).

J Zhang, M Craig, A Hira, M Markey, T Broderick, and M Kadakia, Differential MicroRNA Biomarker Expression in Response to Moderate and High Intensity Exercise Regimen, BSoM Central Research Forum, Dayton, OH 10/17/2019 - 10/17/2019 (Poster).

A Shakya, M Chen, M Markey and W Long, ERK3 negatively regulates IL-6/STAT3 signaling via SOCS3 in cancer cells, BSoM Central Research Forum, Dayton, OH 10/17/2019 - 10/17/2019 (Poster).

A Alatawi, M Markey, MDM4 Alternative Splicing in Melanoma, BSoM Central Research Forum, Dayton, OH 10/17/2019 - 10/17/2019 (Poster).

S Simmons and M Markey, Genetic polymorphisms are associated with response to physical training, BSoM Central Research Forum, Dayton, OH 10/17/2019 - 10/17/2019 (Poster).

M Markey, Next generation sequencing and other technologies at the WSU Center for Genomics Research, Festival of Flight - Wright Brothers Day, Dayton, OH 10/5/2019 - 10/5/2019 (Poster).

A Shakya, M Chen, M Markey and W Long, ERK3 negatively regulates IL-6/STAT3 signaling via SOCS3 in cancer cells, AACR Annual Meeting 3/29/2019 - 4/3/2019 (Poster).

Dr. Paliy

S. Rajakaruna, S. Pérez-Burillo, S. Pastoriza, O. Paliy, J Rufián-Henares, Bioactivity of food melanoidins is mediated by gut microbiota, WSU BSoM Central Research Forum, Dayton OH 10/17/2019 - 10/17/2019 (Poster).

Dr. Ren

Jama A, Huang D, Alshudukhi AA, Chrast R, Ren H., Lipin1 Regulates Myoblast Differentiation through the MyoD-Mef2c-HDAC5 Axis., Boonshoft School of Medicine Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

Alshudukhi AA, Zhu J, Huang D, Jama A, Smith JD, Wang QJ, Esser KA, Ren H., Lipin-1 regulates Bnip3-mediated mitophagy in glycolytic muscle., Boonshoft School of Medicine Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

Sandhya Ramani Sattiraju, Rebecca R. Reese, Abdullah A. Alshudukhi, Abdulrahman Jama, Elise M. Hill, Hongmei Ren., The impact of lipin1 deficiency on muscle degeneration, Boonshoft School of Medicine Central Research Forum, Wright State University 10/17/2019 - 10/17/2019 (Poster).

Alshudukhi AA, Zhu J, Huang D, Jama A, Smith JD, Wang QJ, Esser KA, Ren H., Lipin-1 regulates Bnip3-mediated mitophagy in glycolytic muscle., Annual CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

Jama A, Huang D, Alshudukhi AA, Chrast R, Ren H., Lipin1 Regulates Myoblast Differentiation through the MyoD-Mef2c-HDAC5 Axis, Bone and Muscle Interactions: The Mechanical and Beyond Meeting, Wright State University 8/16/2019 - 8/18/2019 (Poster).

Sandhya Ramani Sattiraju, Rebecca R. Reese, Abdullah A. Alshudukhi, Abdulrahman Jama, Elise M. Hill, Hongmei Ren., The impact of lipin1 deficiency on muscle degeneration, Annual CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

Jama A, Huang D, Alshudukhi AA, Chrast R, Ren H, Lipin1 Regulates Myoblast Differentiation through the MyoD-Mef2c-HDAC5 Axis, Annual CoSM Festival of Research, Wright State University 9/20/2019 - 9/20/2019 (Poster).

Alshudukhi AA, Zhu J, Huang D, Jama A, Smith JD, Wang QJ, Esser KA, Ren H., Lipin-1 regulates Bnip3-mediated mitophagy in glycolytic muscle., Bone and Muscle Interactions: The Mechanical and Beyond Meeting, Indiana Center for Musculoskeletal Health, Indianapolis, IN 46202 8/16/2019 - 8/19/2019 (Poster).

Hongmei Ren, Lipin1-mediated mitophagy in pathogenesis of muscular dystrophy, Image Grant Writing Workshop, Washington, D.C. 6/13/2019 - 6/15/2019 (Platform).

Jama A, Lipin1 Regulates Myoblast Differentiation through the MyoD-Mef2c-HDAC5 Axis, Meeting of Ohio Physiological Society, Wright State University 9/20/2019 - 9/21/2019 (Platform).

Invited Lectures

Dr. Cho

Glucose depletion translocates K-Ras to mitochondria by inhibiting phosphatidylinositol 4-kinase activity, Departmental Seminar for Biochemistry and Molecular Biology, Wright State University, 03/28/2019.

Dr. Kadakia

Mechanistic Insights into the Role played by p63 in Tumorigenesis, University of Dayton Biology Seminar Series, University of Dayton, 02/01/2019.

Mechanistic Insights into the Role played by p63 in Tumorigenesis, University of Lexington, Kentucky, University of Lexington, Kentucky, 11/14/2019.

Dr. Ren

Roles of lipin1 in the pathogenesis of skeletal muscle disorders, Boonshoft School of Medicine Central Research Forum, Wright State University, 10/17/2019.

Roles of lipin1 in the pathogenesis of skeletal muscle disorders, Department of Neuroscience, Cell Biology, and Physiology, Wright State University, 10/11/2019.

Consultantships

Dr. Markey

6 Summary of Service Activities

Student advising

Graduate Student (Ph.D. Student) - Thesis/Dissertation Co-Director

Dr. Reo

Angela Campo, Ph.D. Student, Faculty role: Thesis/Dissertation Co-Director, This student did not graduate this year., I serve as a co-mentor for this student who is employed at the Air Force Research laboratory (AFRL), Materials and Manufacturing Directorate., Angela is working on a research project that directly aligns with her job responsibilities at AFRL, and as such, her other co-mentor (Dr. Peter Mirau) is an AFRL scientist. She plans to use NMR spectroscopy in her research project and meets with me on a regular basis to discuss her research progress. She has also worked on a project in my laboratory (Reo project) during the time while she was developing her dissertation research project, and as a means to learn NMR techniques.

Graduate Student (Ph.D. Student) - Thesis/Dissertation Director

Dr. Cho

Kristen Rehl, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Kadakia

Akshay Hira, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Amjad Aljagthmi, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Andrew Stacy, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Leffak

Rujuta Gadgil, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Long

Amanda Myers, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Krushangi Shah, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Paliy

Alex Gordon, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Sumudu Rajakaruna, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Ren

Abdullah A. Alshudukhi, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Abdulrahman Jama, Ph.D. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Medical Student

Dr. Kadakia

Nikhil Reddy, Lab participation: 8hrs/week for 5 weeks

Post Doctorates

Dr. Leffak

S. Dean Rider, Research Assistant Professor, Part Time (87.5%), Research Assistant Professor

Dr. Long

Marion Morel, Full Time

Technician

Dr. Cho

Karen Henkels, Full Time

Taylor Miller, Full Time, Ms. Taylor Miller worked in my laboratory from Jan. 1, 2019 - March 8, 2019 as a lab assistant.

Dr. Reo

Andrew Neuforth, Part Time (75%), Andrew Neuforth is funded through grants. His percent time depends on the current status of my grant awards. During 2019, Andy was employed at 100% (Jan - Jun) and 51% (Jul - Dec). Thus the average percent time for this employee for 2019 is 75%.

William Couch, Part Time (9%), Mr. Couch is a part-time technician who helps with NMR maintenance/repairs and provides some technical support for research projects. This employee retired in Nov 2019.

Other

Dr. Cho

Kristina Cooke, LSAMP scholar, Part Time (%), LSAMP scholar, Kristina Cooke worked in my laboratory throughout the year (Spring, Summer and Fall semesters) as a LSAMP scholar.

Dr. Kadakia

Jin Zhang, Research Associate, Full Time, Research Associate, Research Associate

Dr. Leffak

Matilyn Shanahan, undergraduate student, Part Time (15%), undergraduate student, undergraduate student

Nathen Zavada, undergraduate student, Part Time (15%), undergraduate student, undergraduate student

Dr. Markey

Karleigh Kessler, Volunteer, Part Time (30%), Volunteer, Volunteer

Visiting Researcher

Dr. Leffak

David Hitch

Volunteer

Dr. Reo

Zachary Gnau, volunteer. Zachary is a former student (BMB major) who graduated in May 2019. He returned to the lab in Fall 2019 as a volunteer to gain more experience while waiting to apply to graduate schools.

Committee membership/officer

Department of Biochemistry and Molecular Biology (BMB)

Dr. Campbell

BMB, 4+1 committee

BMB, Curriculum Committee

BMB, Undergraduate Oversight Committee

BMB, Departmental Honors Committee

BMB, Program Assessment Committee

BMB, STEM Experience Committee

BMB, Weisman Travel Award Committee

BMB, Undergraduate Program Director

Dr. Cho

BMB, Admission Committee for BMB Master's Program

Dr. Craig

BMB, BMB Department Holiday Party Planning Committee

Dr. Kadakia

BMB, Chair for BMB 2019

BMB, Mentor for Masters student Akshay Hira
Wright State University, VPRI Search committee member

Dr. Leffak

BMB, BMB FDC
BMB, BMB Program Review Committee
BMB, Undergrad. Honors Research Committee
BMB, Undergrad. Program Committee

Dr. Long

BMB, 4 + 1 Program committee
BMB, BMB Outreach committee
BMB, BMB program review committee

Dr. Markey

BMB, Holiday Party Committee

Dr. Paietta

BMB M.S. Program Director
BMB Program Review Committee

Dr. Paliy

BMB, Weisman Award Committee

Dr. Ren

BMB, Masters student recruitment committee

Dr. Reo

BMB, 4+1 Program Development Committee (Chair). This committee worked to develop a new 4+1 program leading to a combined BS and MS degree in BMB. We developed the program of study and wrote the admissions criteria, program requirements, and guidelines for the program.
BMB, Bylaws Review Committee
BMB, Program Review Committee (Chair). This committee completed the on-line review and data entry process for the BMB undergraduate BS and graduate MS degree programs.
BMB, Undergraduate Curriculum Committee
BMB, Undergraduate Program Oversight Committee

Dr. Schmidt

BMB, 4 + 1 Committee
BMB, Departmental Curriculum Committee
BMB, Program Review Committee

Biomedical Sciences

Dr. Leffak

BMS, Academic Policies Committee

Dr. Long

BMS, BMS admission committee, elected

Dr. Markey

BMS, BMS Nominating Committee

Dr. Ren

BMS, Biomedical Sciences PhD Program Nomination Committee Member

Dr. Reo

BMS, Admissions Committee (BMS Program)

Dr. Paliy

BMS Curriculum committee

BMS PhD Program admission committee

Boonshoft School of Medicine

Dr. Kadakia

BSoM, Member of Dayton Children's Strategic Planning Committee

BSoM, Associate Dean of Research

Dr. Leffak

BSoM, BSoM Executive Committee

Dr. Long

BSoM, Origins Steering Committee

Dr. Paietta

BSoM, Faculty Curriculum Committee

BSoM, Foundations of Clinical Medicine Administrative Committee

BSoM, Foundations of Clinical Medicine Curricular Innovations Committee

BSoM, Origins Steering Committee

Dr. Reo

BSoM, Bylaws Committee

BSoM, Faculty Promotion and Advancement Committee

BSoM, Steering Committee Member for Origins Course in BSOM

Dr. Schmidt

BSoM, Center for Teaching and Learning Faculty Advisory Board

BSoM, Faculty Curriculum Committee

BSoM, Origins 1 Steering Committee

College of Science and Math

Dr. Campbell

CoSM, ASK Scholarship Committee

CoSM, College of Science and Math Undergraduate Curriculum Committee

CoSM, Scholarship Committee

Dr. Leffak

CoSM, Undergrad Petitions Comm.

Dr. Long

COSM P & T committee

Dr. Paietta

CoSM, COSM Steering Committee
CoSM, Graduate Studies Committee

Dr. Ren

CoSM Petition Committee Member

Wright State University

Dr. Kadakia

University, VPRI Search committee member

Dr. Long

University, IACUC member

Dr. Markey

University, Director, Wright State University Center for Genomics Research

Dr. Paietta

University, Graduate Curriculum Committee (GCC)

Dr. Paliy

University, WSU Institutional Biosafety committee

Dr. Reo

University, Faculty Senate
University, Bottled Gas Supplier Selection Committee
University, Research Council

Other Service

Dr. Campbell

Sinclair Biotech Advisory Board

Dr. Kadakia

Board of Directors, Association of Medical and Graduate Departments of Biochemistry
Board member for Dayton Veterans Affairs Research Foundation, Dayton, OH
Fellow of the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM)
Program for Women

Dr. Leffak

AAAS elected fellow (since 2008)
DNA Repair editorial board
JBC editorial board

Grant and Manuscript Review

Grant Proposal, Ad Hoc Reviewer:

Dr. Markey, Czech Science Foundation (Grantová agentura České republiky) (1)

Grant Proposal, As study section member:

Dr. Markey, National Cancer Institute (10)
Dr. Paliy, NIH ZRG1 DKUS-J (82) study section (4)

Journal Manuscript, Ad Hoc Reviewer:

Dr. Campbell, Advances in Physiology Education (APE) (1)
Dr. Campbell, Cell Biology Education (CBE) Lifesciences (3)
Dr. Campbell, Evolution: Education and Outreach (1)
Dr. Campbell, Journal of Research in Science Teaching (1)
Dr. Craig, Cell Biology (1)
Dr. Craig, Journal of Molecular Biology (1)
Dr. Leffak, Nucleic Acids Research (4)
Dr. Leffak, PLOS One (1)
Dr. Long, American Journal of Pathology (1)
Dr. Long, Breast Cancer Research (1)
Dr. Long, Cancer Letters (2)
Dr. Long, Cancer Science (2)
Dr. Long, Journal of Biological Chemistry (2)
Dr. Long, Journal of Cancer (1)
Dr. Long, Journal of Cellular and Molecular Medicine (1)
Dr. Long, Journal of Cellular Physiology (4)
Dr. Long, Oncogene (1)
Dr. Long, Oncology Reports (2)
Dr. Long, Scientific Reports (2)
Dr. Markey, BioTechniques (1)
Dr. Markey, Cellular Physiology and Biochemistry (1)
Dr. Paietta, PLOS ONE (1)
Dr. Paliy, Clin Gastroenterology Hepatology (1)
Dr. Paliy, PLOS One (2)

Journal Manuscript, As member of editorial board:

Dr. Leffak, JBC (10)
Dr. Paliy, EC Microbiology (1)
Dr. Paliy, Scientific Reports (3)
Dr. Ren, Current Research in Bioorganic & Organic Chemistry (5)
Dr. Ren, Current Trends in Metabolomics (1)
Dr. Ren, Journal of Biotech Research & Biochemistry (2)

Journal Manuscript, Other:

Dr. Ren, Chinese Journal of Biochemistry and Molecular Biology (1)

Other, Ad Hoc Reviewer:

Dr. Campbell, Society for Advancement of Biology Education Research (SABER) Abstract reviewer (9)

PERSONNEL

Undergraduate Student

Dr. Kadakia

Nabaa Hmood, Lab participation: 10hrs/week. This student is a STEM student. Did not complete any undergraduate research.

Sara Gundru, Lab participation: 10-15hrs/week. This student is a STEM student. Did not complete any undergraduate research.

Dr. Long

Katherine Popp, Lab participation: 20 hours per week. This student is an Honors student, Completed research during Spring 2019 on course BIO 4990-04/BMB 4990 01 (5 credit hours), I was the research advisor for Katherine Popp. She completed her thesis entitled ERK3 interacts with DGK and may alter the subcellular localization of DGK via C34 domain and graduated in Fall 2019.

Dr. Paliy

Jennifer Cano, Lab participation: 9. This student is N/A., Did not complete any undergraduate research, received NSF LSAMP Undergraduate Research Award for all 3 semesters in 2019

Rebekah Colliver, Lab participation: 9. This student is N/A., Did not complete any undergraduate research.

Dr. Ren

Elise M Hill, Lab participation: 10 hrs/week for 16 weeks. This student is a STEM student. Did not complete any undergraduate research.

Nour A Wahdan, Lab participation: 3 hrs/week for 10 weeks, This student is a STEM student., Completed research during Spring 2019 on course Senior Capstone- BIO4000-03 (1 credit hours).

Rebecca Reese, Lab participation: 12 hrs/week for 16 weeks. This student is an Honors student. Did not complete any undergraduate research.

Dr. Reo

Adam Petry, Lab participation: 6 hrs/week for 15 weeks. This student is a STEM student. Completed research during Spring 2019 on course BMB 4990 (2 credit hours). This student is a Chemistry major (senior) who is conducting research in my laboratory.

Zachary Gnau, Lab participation: 8 hrs/week for 15 weeks. This student is a STEM student. Completed research during Spring 2019 on course BMB 4990 (3 credit hours). This student is a BMB major (senior) who is conducting research in my laboratory.

Graduate Student (M. S. Student) - Lab Rotation Director

Dr. Cho

Nicole Walters, M. S. Student, Faculty role: Lab Rotation Director, 1 Semester in lab rotation

Graduate Student (M. S. Student) - Thesis/Dissertation Director

Dr. Leffak

French Damewood, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Dr. Long

Alshammari, Eid Salem, M. S. Student, Faculty role: Thesis/Dissertation Director, Thesis Title: Δ Np63 α Positively Regulates ERK3 Expression in Non-Melanoma Skin Cancer, This student graduated this year., They are now As a Lecturer in the Department of Clinical Laboratory

Sciences, College of Applied Medical Sciences, Jouf University, Sakaka, 72388, Saudi Arabia.

Nicole Waters, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Astha Shakya, Ph.D. Student, Faculty role: Thesis/Dissertation Director, Thesis Title: EXTRACELLULAR SIGNAL REGULATED KINASE 3 (ERK3) NEGATIVELY REGULATES IL-6/STAT3 SIGNALING VIA SUPPRESSOR OF CYTOKINE SIGNALING 3 (SOCS3), This student graduated this year. She is back in Nepal. Astha quit the BMS PhD program and graduated with a BMB MS degree.

Dr. Markey

Abdullah Alatwi, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Stacy Simmons, M. S. Student, Faculty role: Thesis/Dissertation Director, Thesis Title: Genotyping for response to physical training, This student graduated this year., They are now Alkermes, Wilmington, OH

Dr. Paliy

Cody Behm, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year, Cody has left master's program because of poor class grades

Dr. Ren

Rajsi Yogeshkumar Thaker, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

Sandhya Ramani Sattiraju, M. S. Student, Faculty role: Thesis/Dissertation Director, This student did not graduate this year.

7

Patient Care Summary

[If applicable. Include number of ambulatory visits, hospitalizations, surgeries, new techniques or programs developed; new collaborations.]

Not applicable.

8

Honors and awards [Faculty or staff]

Awards

Dr. Paietta, Excellence in Medical Education, received by Dr. Paietta.

Dr. Paliy, NSF LSAMP Undergraduate Research Award, received by Jennifer Cano.

Dr. Reo, BSOM Faculty Mentor Award for Basic Science Faculty, received by Dr. Reo.

Special interest program

Dr. Kadakia, BSoM visionary exercise, 11/12/19 - 11/13/19. This program is located at WSU.

9

Hosted events [CME, etc.]

Not applicable.

10

Other information

[Other information that represents your department's contribution to the academic mission of the Boonshoft School of Medicine.]

Dr. Leffak

Unstable Microsatellite DNA: Replication-Dependent Double Strand Breaks Lead to Highly Mutagenic Break-Induced Replication, FASEB Summer Research Conference Dynamic DNA Structures in Biology, 7/8/2018 - 7/13/2018.

Unstable Microsatellite DNA: Replication-Dependent Double Strand Breaks Lead to Highly Mutagenic Break-Induced Replication, 3rd International Conference on Molecular Biology & Nucleic Acids, Toronto, Canada, 8/27/2018 - 8/28/2018.

Dr. Kadakia

Annual Meeting of the Association of Medical and Graduate Departments of Biochemistry (AMGDB), Panama City, Panama 1/11/2018 - 1/15/2018

Dr. Long

Elucidating ERK3 kinase signaling in cancers: very challenging but exciting!, Seminar series of the Department of Biology, Wright State University, Wright State University, Dayton, Ohio, 01-08-2018.

Dr. Markey

Next Generation Sequencing in Cancer Care and Research, Dayton Area Hospital Tumor Registrars annual meeting, Beavercreek, OH, 4/10/2018.

Dr. Ren

The new role of lipin1 in myogenic progenitor differentiation to muscle and adipose tissues, Invited by Dr. Paul A Harding, Professor and Chair of Department of Biological Sciences, Miami University, 11/1/2018.

