



PennState
College of Medicine

POSTDOCTORAL SCHOLARS & FELLOWS CONNECT

Newsletter Issue 11 | February 2019

MOUSE PLANTARIS MUSCLE

Cross section from a mouse plantaris muscle stained for different myosin heavy chain isoforms (green, red, blue, and black represent different isoforms). During periods of muscle wasting, such as breast cancer bone metastases-induced cachexia, myofibers can be used as markers of metabolic and functional changes.

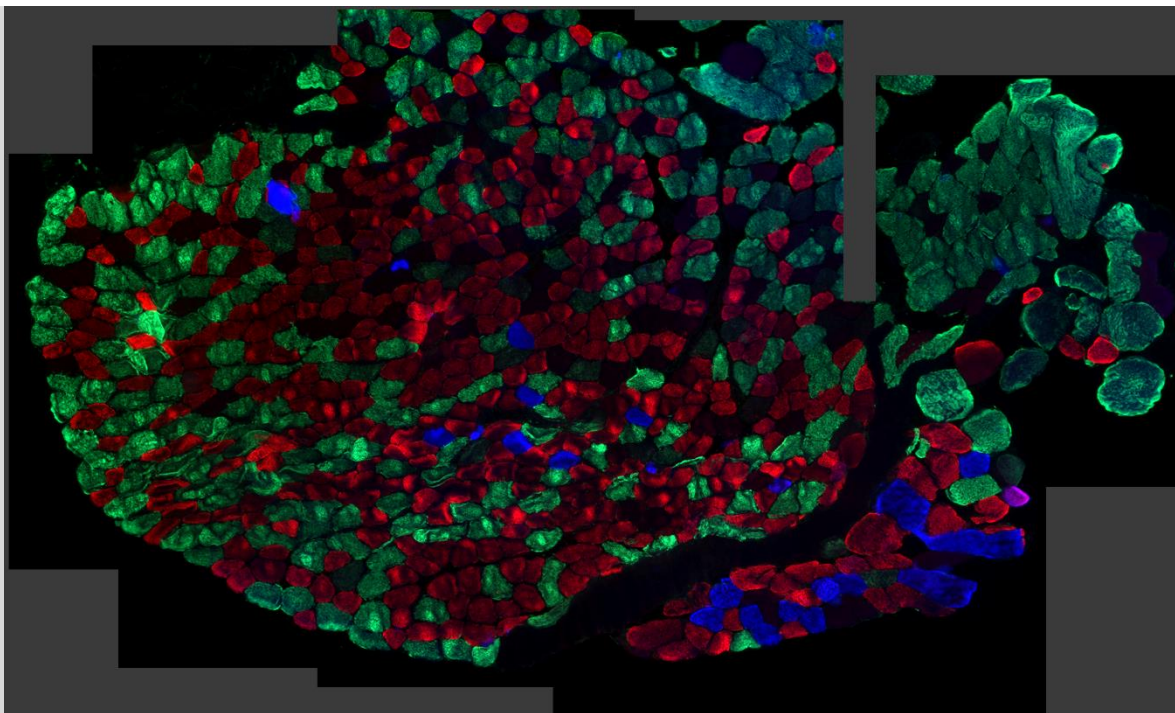
Image Courtesy:

Dr. Brian Hain

Postdoctoral Scholar

Dr. David Waning

Department of Cellular and Molecular
Physiology



THIS ISSUE'S FOCUS: 17TH ANNUAL DATA AND DINE

In March our postdoctoral community will come together to showcase the outstanding work being done by postdoctoral scholars and fellows at the 17th Annual Data and Dine event!

This year, we will benefit from the insights of our Keynote Speaker, Dr. Purnanand Sarma, who has over 20 years of experience in the pharmaceutical industry.

The event will be held at the University Conference Center on Tuesday, March 12, 2019.

We enthusiastically encourage all postdocs to register for this terrific event.

IN THIS ISSUE:

1. This Month's Focus
& Submitted Cover Image
2. Career Development Events
3. Data & Dine 2019
4. Review of PLaN
August & October 2018
5. Techniques: the Seahorse XF Platform
6. Postdoc Research Achievements
7. Bond & Bradley Award
& Postdoc Spotlight
8. Around Town Events
& Letter from the Office of
Postdoctoral Affairs

CAREER DEVELOPMENT EVENTS

FEBRUARY

Research Quality Assurance Lunchtime Lecture: Mary Kennett, DVM, PhD, and Melissa James

February 20 @ 12:00 pm - 1:00 pm
Junker Auditorium – Penn State College of Medicine

The next Research Quality Assurance lunchtime lecture will be presented by Mary Kennett, DVM, PhD, Diplomate ACLAM, Professor, Veterinary and Biomedical Sciences and Director, Animal Resource Program, and Melissa James, Facility Manager and Responsible Official, from University Park, speaking on "Pell ABSL-3 Laboratory: Collaboration and Contract Research."

Professionalism Workshop

February 26 @ 5:00 pm - 6:00 pm
Room 2008 of the Academic Support Building

Professionalism involves how employers and colleagues perceive you and encompasses behavior, workplace ethics and even appearance. Lapses in professionalism can affect your credibility on the job. In this session, participants will learn the professional skills and behaviors needed to succeed in the workplace.

MARCH

Teaching Strategies for the Experimental Classroom

March 5 @ 3:00 pm - 4:00 pm
Room C2609D – Harrell Health Sciences Library Experimental Classroom

In this free session, Michael Cote will share best practices for teaching a lesson using the Experimental Classroom. The Experimental Classroom provides all Penn State College of Medicine and Penn State Health Milton S. Hershey Medical Center faculty and staff with a cutting-edge space that includes virtual reality, Zoom capabilities and active learning opportunities. In this session, participants will be able to use the multi-screen displays, set up the room for a Zoom class and create an engaging lesson utilizing the technology.

GoinGlobal Workshop

March 15 @ 12:00 pm - 1:00 pm
Room C1832 – Penn State College of Medicine

This workshop provides a demonstration and overview of GoinGlobal, a free resource for those considering traveling or working internationally or within specific U.S. cities. Features include an international job and internship search, career guides for 90 domestic and international locations, an employer directory and a searchable H1B visa application database.

Resumes vs. CVs workshop

March 18 @ 12:00 pm - 1:00 pm
Room C7521 – Penn State College of Medicine

Participants will learn the differences between a resume and CV, when to use each document, how to incorporate skills and experiences desired by employers and why proper formatting is so important. Attendees should bring their resume/CV and applicable posting(s).

APRIL

Teaching Philosophy and Personal Statement Workshop

April 12 @ 12:00 pm - 1:00 pm
Room C7842 – Penn State College of Medicine

This interactive workshop will provide guidelines and resources for developing a teaching philosophy or personal statement. Participants will preview samples and learn how to determine their style and approach while improving their content. Each attendee should bring their teaching philosophy and/or personal statement draft(s).

Interviewing for Success

April 22 @ 12:00 pm - 1:00 pm
Room C3700 – Penn State College of Medicine

This workshop is co-hosted by Career Services and Graduate Women in Science. Preparation and making a good first impression are essential for a strong and successful interview. In this session, participants will learn what to do before, during and after the interview process.

Charles Lang to present at spring Dean's Lecture

May 14 @ 12:00 pm - 1:00 pm
Junker Auditorium – Penn State College of Medicine

Charles Lang, PhD, Distinguished Professor of Cellular and Molecular Physiology and Surgery, and Associate Dean for Graduate Studies at Penn State College of Medicine, will present this year's spring Dean's Lecture.

Dr. Lang's research focuses on the physiological mechanisms underlying the development of cachexia -a condition characterized as a loss in body mass and metabolic dysfunction. Cachexia is associated with several prevalent chronic health conditions including many cancers, AIDS, extended bedrest and disuse, weightlessness, burns, sepsis, and chronic alcohol use.

Dr. Lang has been consistently funded by the National Institutes of Health for more than 30 years and is the primary investigator on an NIH R37 MERIT award from the National Institutes on Alcohol Abuse and Alcoholism.

DISCOVERY & DEVELOPMENT OF BIOPHARMACEUTICALS LECTURE SERIES

Thursday Evenings @ 4:00 pm - 6:00 pm

Room HCAR1103 – Hershey Center for Applied Research

A lecture series by Janssen Pharmaceuticals will take place every Thursday from Jan. 31 to April 18. This series offers comprehensive information and insights into pharmaceutical biotechnology and the development of biopharmaceuticals in the pharmaceutical industry. Attendees will gain an understanding in both scientific knowledge of designing and producing novel biologics, and business challenges in biopharmaceutical companies, including regulatory issues. Brought to you by the Department of Pharmacology, in conjunction with the PHARM 590 course, each lecture is presented by a subject-matter expert from Janssen Pharmaceuticals and will be followed by a group discussion. The following are the dates of each lecture and the topic of the week:

Jan. 31: Introduction of Biologics
Feb. 7: Discovery of Lead Candidates
Feb. 14: Translational PK/PD Modeling of Biologics
Feb. 21: Preclinical Development
Feb. 28: Clinical Development

March 14: Manufacturing of Biologics
March 21: Analytics: CMC Method Development/Validation
March 28: Analytics: Bioanalytical Method Development/Validation
April 4: Regulatory Process and BLA Application
April 11: Licensing/Acquisition and IP Protection
April 18: Biosimilars

DATA & DINE

17th Annual Postdoctoral Research Symposium

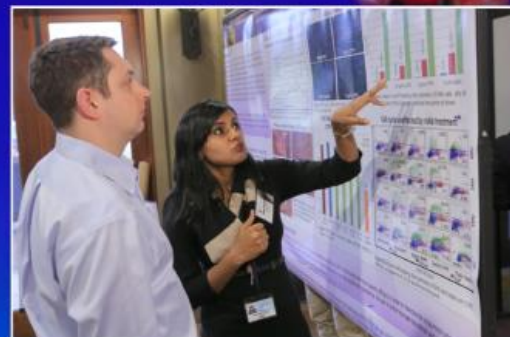
The College of Medicine community is welcome to attend this event highlighting the research accomplishments of postdoctoral scholars.

DATE: Tuesday, March 12th, 2019
TIMES: 11:00 AM – 4:30 PM (*See Agenda*)
LOCATION: University Conference Center

More Details: <https://sites.psu.edu/postdocs/data-dine-symposium/>

AGENDA:

11:00 AM - Registration open
11:15 AM - Welcome and Opening Address by Drs. Bradley and Bond
12:00 PM - Lunch
1:00-2:30 PM - Poster sessions
2:45 PM - Keynote lecture
3:45 PM - Awards presentation
6:30 PM - Reception (Cocoa Beanery) **MUST REGISTER!**



Poster Session



Networking Opportunities

For More Information & To Register, Contact
Becky Moyer, Postdocs@pennstatehealth.psu.edu

KEYNOTE SPEAKER:

Purnanand Sarma, Ph.D.
President & CEO at
Taris Biomedical



Dr. Sarma received his Ph.D. in
Pharmaceutics from the University of Minnesota, and
has over 20 years of pharmaceutical experience in
large, medium and small companies.

The PSHPS sincerely acknowledges
the kind support
from...

**Drs. Judith S. Bond
and S. Gaylen Bradley**



Please register to attend by
February 25, 2019 and join us
afterward for the reception at the
Cocoa Beanery.



PennState
College of Medicine

POSTDOC LUNCH AND NETWORKING 2018

AUGUST

IMAGE CYCLER: FROM GENOME TO TOPONOME

with Dr. Neil Christensen

The PLAN meeting of August 2018 introduced to us the recently installed Image Cycler Microscope System in the Department of Pathology, The Jake Gittlen Labs for Cancer Research. Dr. Neil Christensen, Professor in the Department of Pathology who is actively involved in the functioning of this high end imaging facility, walked us through the applications, scope and technical aspects of this instrument.

After having deciphered the human genome, the next big challenge is unlocking the molecular networks of the cell, which encompasses numerous cellular functionalities. The precise knowledge of this entire functional plan, called the toponome, is the prerequisite to understand the cellular functions of proteins and other elements of spatially determined molecular networks. Fluorescent microscopy has revolutionized research in cell biology and histology. The first elementary Imaging Cycler® robot technology capable of deciphering toponomes directly in a cell or tissue has been established. This microscope system was developed by Dr. Walter Schubert (Magdeburg, Germany [<http://toposnomos.com/>]), and enables investigators to examine up to 50 markers on a single tissue section using FITC-labeled antibodies and photobleaching between successive antibody treatments.

Dr. Christensen also discussed the upcoming in-house Core Antibody Facility to provide customized antibodies to the researchers at the Penn State College of Medicine. The program also intends to provide hands on training for antibody generation techniques, for postdoctoral fellows and graduate students.

OCTOBER

BEING METHODOICAL ABOUT ADDRESSING HEALTH DISPARITIES

with Dr. Bethany Cara Bray

In October, the Postdoctoral Society hosted Bethany Cara Bray, a Senior Research Associate from the Penn State Methodology Center. The Methodology Center, located in Penn State's College of Health and Human Development, serves as a national resource for the development and dissemination of innovative research methods. Research at The Methodology Center focuses on alcohol abuse, tobacco use, other drug abuse, and HIV, but it is broadly applicable across the social, health, and behavioral sciences.

In recent years, health disparities among socially disadvantaged populations have been receiving more attention from researchers, but many disparities persist. In this talk, Dr. Bethany Bray explained how methods for experimental design and data analysis that have been developed at The Methodology Center can and are being applied to identify and address health disparities.

The Methodology Center is an interdisciplinary research center within the College of Health and Human Development at the University Park campus of Penn State and provides a variety of resources such as training, fellowships, seminars, workshops, podcasts, videos, software, consulting, etc. For more information, visit <https://methodology.psu.edu/>

Do YOU HAVE A PLAN?

Please contact Becky Moyer (rmoyer7@pennstatehealth.psu.edu) with your ideas!

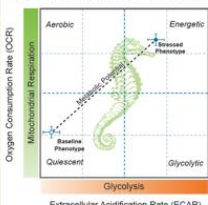
THE COLLEGE OF MEDICINE INTRODUCES THE SEAHORSE XF PLATFORM

Metabolism might not have been the favorite subject for most of us, struggling to remember the formula and structures of the intermediates while counting for the ATP lost and gained for a certain pathway. However studying cell metabolism is becoming very popular across a number of research areas including cancer, obesity, diabetes, metabolic disorders, immunology, cardiovascular, neurobiology, virology, aging, and more.

The Seahorse XF platform from Agilent Cell Analysis Technologies enables the measurement of several metabolic parameters and functions using live cells, in real time, enabling researchers to assess energy expenditure, substrate utilization, mitochondrial function, and general cellular homeostasis. Seahorse XF Analyzers can measure oxygen consumption rate (OCR) and extracellular acidification rate (ECAR) of live cells in a 96 well format. The Seahorse assays can not only be performed with adherent and non-adherent cells but also with spheroids. Seahorse metabolic assay kits are available for measuring mitochondrial respiration, glycolysis, and fatty acid oxidation in cells.

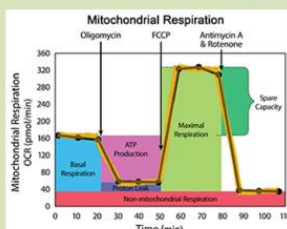
Metabolic Phenotype

XFp Cell Energy Phenotype Profile



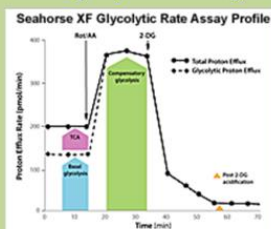
Rapidly determines the energy phenotype/fingerprint of cells and reveals their metabolic potential

Mitochondrial Profiling



Provides a complete mitochondrial profile of your cells using the mitochondrial stress test kit

Glycolysis Profiling



Provides a complete glycolytic profile of your cells using the glycolytic stress test kit

CONTACT: The Drug Discovery, Development and Delivery (D4) core at college of medicine hosts the Seahorse XFe96 analyzer. The instrument is housed in 2nd floor IPM facility and the point of contact regarding booking and charges is Mr. Wade Edris (wedris@pennstatehealth.psu.edu, 717-531-1157).

Prof. Nadine Hempel, PhD, Associate Professor of Pharmacology at Penn State College of Medicine is a valuable resource and an expert in this field.

Do you have cool fluorescence, confocal or EM images to share?

We are looking for cover images for our newsletter "CONNECT".

An excellent way to share your research and highlight your findings!

We look forward to your contributions to this inventory of images.

Please send your images to
rmoyer7@pennstatehealth.psu.edu



RESEARCH ACHIEVEMENTS

We have introduced the "Research Achievements" section to highlight and enlist the recent achievements of the postdoctoral scholars from The Penn State College of Medicine. Please send us the details of your recent achievements, including:

- Publications (News and Views, Press Coverage)
- Patents
- Talks/poster presentation at conferences
- Grant Awards

This is an excellent platform to share your interesting research, highlight your achievements and provide opportunities for collaborations.

POSTDOCTORAL ACHIEVEMENTS



Dr. Lena Lupey-Green
Microbiology and Immunology
Advisor: Dr. Jeff Sample

Dr. Lupey-Green was recently awarded a Postdoctoral Research Fellowship grant from the Lymphoma Research Foundation for her work titled "Contributions of the Epstein-Barr Virus Non-Protein-Coding Locus BHLF1 to Latency and Reactivation".

Epstein-Barr virus (EBV) is a potentially oncogenic gammaherpesvirus that establishes latency in B lymphocytes. Viral latent infection underlies EBV's contribution to both epithelial and B cell cancers. Although both cellular and viral factors are important in lymphomagenesis, the roles of viral genes encoding functional RNAs (i.e. noncoding) are only recently the subject of investigation. The BHLF1 gene of EBV encodes several such RNAs in Burkitt lymphoma and other latently infected B cell lines, and yet has no established role during latency. In this proposal, Dr. Lupey-Green aims to define the contributions and elucidate the mechanisms underlying the role of the BHLF1 locus in viral latency and reactivation.



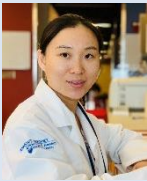
Dr. Vengadeshprabhu Karuppagounder
Orthopedics and Rehabilitation
Advisor: Dr. Fadia Kamal

Dr. Vengadeshprabhu Karuppagounder is interested in understanding the role of G $\beta\gamma$ /GRK2 signaling in the homeostasis of heart, bones and cartilage under physiological and pathological conditions like osteoarthritis, Inter-vertebral disc degeneration and osteoporosis. Cited below is his recent work on autoimmune myocarditis in rats.

Karuppagounder V, Bajpai A, Meng S, Arumugam S, Sreedhar R, Giridharan VV, Guha A, Bhimaraj A, Youker KA, Palaniyandi SS, Karmouty-Quintana H, Kamal F, Spiller KL, Watanabe K, Thandavarayan RA.

Small molecule disruption of G protein $\beta\gamma$ subunit signaling reprograms human macrophage phenotype and prevents autoimmune myocarditis in rats.

PLoS One. 2018 Jul 19;13(7):e0200697.
doi: 10.1371/journal.pone.0200697.



Dr. Jia Bei
Penn State Cancer Institute
Advisor: Dr. Hong Zheng & Dr. K. Sandeep Prabhu

Dr. Bei was recently awarded the Post-Doctoral Scholar Program grant for her research titled "Establish a preclinical model of human acute myeloid leukemia (AML) and determine the therapeutic effect of D12-PGJ3 in eradicating leukemia stem cells (LSCs)".

Dr. Bei aims to establish murine xenotransplantation models with primary human cells and identify the effect of D12-PGJ3 on leukemia stem cells (LSCs) and hematopoietic stem cells (HSCs) in these models.



Dr. Raquel Buj Gomez
Cellular and Molecular Physiology
Advisors: Dr. Katherine Aird & Dr. Todd Schell

Dr. Gomez was recently awarded the Penn State Cancer Institute (PSCI) Postdoctoral grant for her proposal titled "p16 loss mediated metabolic reprogramming in immuno-resistant melanoma".

Melanoma is the leading cause of skin cancer-related deaths, with 9320 estimated deaths in 2018 alone and a cost of \$3.3 billion per year. Over the past few years, immunotherapy has dramatically improved the landscape of melanoma treatment. However, there is still a large subset of patients that do not obtain a sustained response to therapy. Therefore, novel targets are urgently needed for immunomodulation of this subset of patients.

Dr. Gomez's hypothesis is that the nucleotide metabolic reprogramming induced by loss of p16 promotes activation of the cGAS-STING-NF- κ B axis, leading to an ICI-resistant tumor microenvironment. Understanding the role of loss of p16 in the upregulation of a pro-inflammatory ICI-resistant secretome may help to identify novel therapeutic vulnerabilities in melanoma.



Dr. Brian Hain
Cellular and Molecular Physiology
Advisor: Dr. David Waning

Dr. Hain was recently awarded the Penn State Cancer Institute Postdoctoral Scholars Grant for his research titled "Mechanisms of cachexia in advanced breast cancer".

The overall objective of Dr. Hain's research is to identify the mechanisms and mediators responsible for skeletal muscle wasting or cachexia. Using mouse models of cancer cachexia and chemotherapy-induced cachexia, he aims to study changes in skeletal muscle mass and function, providing evidence for possible therapeutic interventions.



BOND & BRADLEY AWARD FOR POSTDOCTORAL TRAINEES



The Penn State Hershey Postdoctoral Society has established the annual Bond & Bradley Award for Postdoctoral Trainees, which will be presented to outstanding postdoctoral fellows or scholars at Penn State Hershey at the annual Data and Dine event. Candidates for these awards are postdoctoral fellows or scholars at Penn State Hershey, and are selected by the Penn State Hershey Postdoctoral Society Awards Committee. Best Poster Awards will also be presented to the postdocs with the best scientific posters, as selected by faculty judges at the annual Data and Dine event.

These awards are made possible by a generous donation from Drs. Judith S. Bond and S. Gaylen Bradley to the Penn State Hershey Postdoctoral Society. The endowment created by this donation will provide, in perpetuity, the financial support for these awards, and was inaugurated in 2012.

The Penn State Hershey Postdoctoral Society appreciates the kind support from Drs. Judith S. Bond and S. Gaylen Bradley.



For early career faculty who need a period of mentored research and training in order to transition to research independence, the College of Medicine offers the K Grant Workshop Series. Mentored career development awards, or K awards, provide salary support and research funding to early stage investigators who need to undertake a sustained period (three to five years) of intensive, supervised career development experiences in order to transition to research independence.

March 18 @ 7:30 am - 9:30 am

March 25 @ 7:30 am - 9:30 am

April 1 @ 7:30 am - 9:30 am

April 8 @ 7:30 am - 9:30 am

Room P1100 – Penn State Children's Hospital

Postdoc Spotlight



The objective of Dr. Pavan is to learn and get an insight into the molecular mechanisms which modulate and differentiate Cancer cells from non-cancerous cells.

Ikaros (*IKZF1*) is one such gene which is paramount due to its involvement in hematopoietic system. Loss of Ikaros has been shown to cause high-risk childhood leukemia and has a poor prognosis. Thus, treatment of high-risk childhood leukemia is a herculean challenge and therefore development of drugs and treatment strategies is one of the long term interests of Dr. Pavan.

Dr.rer.nat. D. Pavan Kumar

Department of Pediatrics

Advisor: Dr. Sinisa Dovat

LOCAL EVENTS AROUND TOWN

Jersey Boys

March 1-3, 2019
Friday: 8:00 pm
Saturday: 2:00 pm & 8:00 pm
Sunday: 1:00 pm & 6:30 pm
Venue: Hershey Theater

Comedian: Sebastian Maniscalco

February 28, 2019
Time: 7:00 pm, 9:30 pm
Venue: Hershey Theater

Michael Londra's Celtic Fire

March 15, 2019
Time: 8:00 pm
Venue: Hershey Theater

Comedian: Lewis Black

March 8, 2019
Time: 8:00 pm
Venue: Hershey Theater

Hershey Symphony Presents: Jesus Christ Superstar in Concert

March 16, 2019
Time: 8:00 pm
Venue: Hershey Theater

WWE Live Road to Wrestlemania

March 31, 2019
Time: 7:00 pm
Venue: Giant Center

Chicago

April 9, 2019
Time: 7:30 pm
Venue: Hershey Theater

Hershey Symphony Presents: Tchaikovsky

April 12, 2019
8:00 pm
Venue: Hershey Theater

RENT

April 22-23, 2019
Time: 7:30 pm
Venue: Hershey Theater

Comedian: Brian Regan

April 25, 2019
Time: 7:30 pm
Venue: Hershey Theater

MUSIC FESTIVALS & CONCERTS

Shinedown

March 1, 2019
7:00 pm
Venue: Giant Center

Joe Bonamassa

March 12, 2019
8:00 pm
Venue: Hershey Theater

Casting Crowns

March 17, 2019
Time: 7:00 pm
Venue: Giant Center

2 Cellos Feat. Jon McLaughlin

March 29, 2019
Time: 8:00 pm
Venue: Giant Center

Chicago Live in Concert

April 9, 2019
7:30 pm
Venue: Hershey Theater



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From the Director's desk...

The 17th annual College of Medicine Postdoctoral Research Symposium "**Data and Dine**" will be held on **March 12, 2019**, from **11:00 AM-4:00 pm** at the **University Conference Center**.

Data and Dine is an outstanding opportunity to share your research accomplishments with the entire College of Medicine community. We are very excited to host Drs. Judith Bond and Gaylen Bradley as our special guests this year. Dr. Bradley was instrumental in founding the Office of Postdoctoral Affairs at our College, and Drs. Bond and Bradley are generous financial supporters of the Postdoctoral Society. Our event also includes a poster session and a Keynote Address, and all of our invited speakers will be discussing postdoctoral careers. I highly encourage every postdoc to attend the symposium, even if you are not presenting a poster – this event is free, and one of your most important networking opportunities of the year. **For the first time this year**, the Postdoc Society will host a Reception at the Cocoa Beanery from 6:30-9PM. **Registration closes February 25th, and is required for lunch and the reception.** So, plan your experiments to free up the afternoon and evening of March 12th for a few hours of scientific collaboration and networking at Data and Dine!

Kristin A. Eckert



Pictured Above:
Kristin Eckert, Ph.D.



Pictured Above:
Becky Moyer