

FSU Biomed

Florida State University College of Medicine

www.med.fsu.edu/BioSci



Student News

Over the course of the summer months, the Biomedical Sciences department has had the distinct pleasure of hosting a variety of students working in the labs and facilities of our department. This included med students, engineering grad students, undergrads, and high school volunteers. Below, students are listed by their respective lab.

Bhide Lab: Mia Trupiano, Aishani Kalluri, Carlos Talledo, Dominique Zito, Eamonn Byrnes, and Jacqueline Kennedy

Blaber Lab: Lauren McGarry, Brooke Hagerott, and Daena Senatus

Gunjan Lab: Omar Attari, Noah Kabbaj, Nirmay Bhandari, Rohan Iyer, Benjamin Wright, Macauley Mascarenhas, Lauren Henehan, Shelby Ploucher, and Oumaya Zlitni

Horabin Lab: Shelby Remmel

Meckes Lab: Stephanie Kenyon, Mike Vreones, Allison Carrier, Jonathan Grisaffi, and Caitlin Tweedie

Megraw Lab: Olivia Foley

Pinto Lab: Zachary Louah and Joshua Tijerino

Pritchard Lab: Ben Cynamon, Nkechi Emutuche, Gabriella Marquez, Laken Johnson, Anahid Ehtemami, and Tyler Gregory

Rizkallah Lab: Hannah Pauley

Stanwood Lab: Melanie Trespalacios and Haley Madkour

Tomko/Nemec Lab: Jeremy Czerenda, Jessica Janargin, and Tessa Locketto

Yanchang Wang Lab: Erin Kang, Kimberly McClellan, and Joanna Wang

Yuan Wang Lab: Thomas Ayzenshtat and Paige Rhein

Upcoming Events

August 7

Scott Stagg Seminar

August 14

Connie Tenorio Seminar

August 16

New Postdoc Orientation

August 17

FSU Primary Health Grand Opening

August 19

New Student Orientation

August 21

3rd Annual Biomed Retreat

August 26

Fall Semester Begins

IMPORTANT MAINTENANCE UPDATE!!!!

If you need Josh and Tyler to do a repair or maintenance task, please submit a work request here:

<https://intranet.med.fsu.edu/sites/BioMed/inventory/Pages/BioMedRequests.aspx>

The 2019 FSU International Genetically Engineered Machines Team



The FSU International Genetically Engineered Machines (FSU iGEM) program provides students from all majors an undergraduate research experience focused on innovation and team-based science and engineering. iGEM teams spend the summer addressing a need and/or solving a problem using synthetic biology.

Their 2019 project focuses on Citrus greening (also known as Huanglongbing or HLB), a disease spread by an insect called the Asian citrus psyllid. The psyllid feeds on the stems and leaves of the trees, infecting the trees with the bacteria that causes citrus greening. Greening impairs the tree's ability to take in nourishment, ultimately resulting in fewer and smaller fruit over time. Once a tree is infected, there is no cure.

FSU iGEM Team and advisors:

Roderick Meyer, Jacob Gottlieb, Jamale Youmas, Cameron Conroy, Tyler Mitchell, Jessie Griesheimer, Kathleen McClellan, Derica Parathundil, Juan Martin Portilla, Conner Quinlan, Shams Dhanani, Alyssa Klein, Hannah Pascoe, Mezindia Blessing Nkembo, Nicholas Vazquez, Ben Cynamon, Alexandra Kata, Daniela Quijano, Ian Schlander, Arianna Sigalos

For more information on the program, visit: med.fsu.edu/igem

Incoming BMS Grad students

Please welcome Monica Abou Harb, Alfonso Brea Guerrero, Isabella Leite Coscarella, Matthew Crockett, Leanne Duke, Ausitin Folger, Garret Morton, and Michelle Rodriguez Garcia to the Biomedical Sciences Department! Below, you will find a brief insight into their academic history.

Monica Abou Harb (joining the Meckes lab)

Undergraduate: Biology from Lebanese American University (Beirut)

Masters: Molecular Biology from Lebanese American University (Jbeil)

Alfonso Brea Guerrero (Neuroscience) (joining the Kabbaj lab)

Undergraduate: Biomedical Science from Alcala de Henares University

Masters: Neuroscience from Madrid Autonomous University

Isabella Leite Coscarella

Undergraduate: Biomedical Sciences from UNIRIO – Federal University of the State of Rio de Janeiro

Matthew Crockett (Neuroscience) (joining the Kumar lab)

Undergraduate: Psychology and Sociology from Florida State University

Leanne Duke

Undergraduate: Biochemistry from Florida State University

Austin Folger

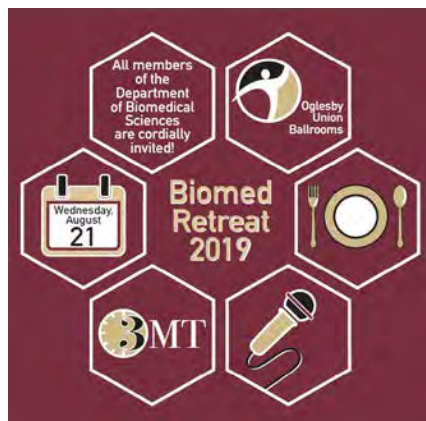
Undergraduate: Microbiology and Cell Science from University of Florida

Garret Morton

Undergraduate: Microbiology-Biotechnology from University of Oklahoma

Michelle Rodriguez Garcia

Undergraduate - MD: Doctor of Medicine from Universidad Evangelica de El Salvador



The Third Annual Biomed Retreat will be held on Wednesday, August 21st at the Oglesby Union Ballrooms. The day will feature a Three Minute Thesis competition, a surprise guest speaker, faculty poster session, and (of course) food and drinks! This will be a great time to see familiar faces and meet new ones!

Registration Closes August 2nd

Register at: https://fsu.qualtrics.com/jfe/form/SV_ag7b2OTkEt2HkdT

Faculty News



From June 22-27, **Dr. Mohamed Kabbaj** was in Marrakech, Morocco attending the 7th meeting of the Mediterranean Neuroscience Society. He presented in two sessions during the meeting. His talk during the session on sex differences was titled "Sex differences in ketamine's antidepressant effects", and during the Epigenetics of Motivated Behaviors session, "Epigenetics of social bonding in prairie voles". The latter of which he chaired.



Trefoil Therapeutics, a private biotechnology company co-founded by **Michael Blaber, Ph.D.**, has raised \$28 million in an oversubscribed Series A financing. The company is developing novel engineered fibroblast growth factor-1 proteins (eFGF-1) as a regenerative pharmacologic therapy to treat serious corneal endothelial diseases and epithelial disorders. This funding supports the completion of a Phase 2a proof-of-concept study in corneal endothelial dystrophy, including Fuchs dystrophy, a disease which leads to the deterioration of the endothelial layer on the back surface of the cornea. Trefoil anticipates filing an Investigational New Drug (IND) application with the U.S. Food and Drug Administration (FDA) in early 2020 and initiating the clinical trial soon thereafter.

The technology underlying Trefoil's platform was developed by co-founder Michael Blaber, Ph.D., and is licensed from Florida State University.

To read the full press release, visit the link below:

<https://www.trefoiltherapeutics.com/copy-of-03132017>

Attention Faculty!!!!!!!

It's time to start thinking about committee nominations for 2019-20. Nominations will open later this month (watch your email).

MANDATORY CYBER SECURITY TRAINING

FSU Mandated Training for All Employees

FSU has made IT Cyber Security Training **MANDATORY** for all FSU employees. The College of Medicine **STILL has less than 50% compliance** with this requirement. The training was due January 2019.

If you have not completed your training, please visit <https://my.fsu.edu> (link to myFSU webpage) and login with your FSUID. Then navigate to **HR > Employee Self Service > Learning and Development > Request Training Enrollment** and search for the “**Basic Cybersecurity Training**” course. You will receive an email once you've been registered for the course. The email will include instructions on how to complete the course in Canvas. Please complete the training as soon as possible.

If you can't remember if you have completed the training, please follow the steps outlined in [this instructional document](#) (link to instructional PDF). Please pay special attention to submitting the final one question quiz... it is how FSU will verify that you have completed the required training.

Volunteers Needed for Open House



We're anticipating a big crowd at the FSU Primary Health Grand Opening on Saturday, Aug. 17, between 10 a.m. and 4 p.m. We'll have food, live music, yard games, face painting, a bounce house, community outreach activities and more.

We're asking the College of Medicine community to help with various activities throughout the day to keep the event fun, safe and running smoothly. Faculty, staff, students, alumni, family and friends are all welcome to volunteer. **If you're interested in volunteering for any activities listed below, sign up here by Friday, Aug. 9.** Questions can be directed to Brandon Hill (brandon.hill@med.fsu.edu).

New Graduate Course to be Offered this Fall!



FALL 2019

BIOMEDICAL INNOVATION & ENTREPRENEURSHIP

Cesar Rodriguez, M.D. and Emily Pritchard, Ph.D.

This course will give students the opportunity to:

- Study how companies pursue innovations in molecular biology, biomedical, mechanical, electronic, and software engineering.
- Examine companies that address needs in the improvement and maintenance of human health.
- Use a Design Thinking process to analyze an existing or newly identified need.
- Analyze existing business models and develop a new business model.

GMS 6001 - SECTION 2
2 credit hours

Mondays and Wednesdays, 9:00 AM - 10:15 AM
Innovation Hub - Pitch Room
(Shores 112)

Publications



Devon Graham co-authored a review entitled "Cognitive and Behavioral Impact on Children Exposed to Opioids During Pregnancy" in *Pediatrics* that was recently released from embargo and is now in press. The abstract and link are below.

The developmental impact of opioid use during pregnancy is a subject of ongoing debate. Short-term neonatal outcomes, such as lower birth weight and neonatal abstinence syndrome, are the most well-recognized outcomes.

However, knowledge gaps exist regarding longer-term neurocognitive and mental health outcomes. In this article, we summarize an expert panel discussion that was held in April 2018 by the Substance Abuse and Mental Health Services Administration and attended by national experts in the field of perinatal opioid exposure and its impact on child development. Despite the challenges with research in this area, there is emerging literature revealing an association between neonates exposed to opioids in utero and longer-term adverse neurocognitive, behavioral, and developmental outcomes. Although adverse sequelae may not be apparent in the neonatal period, they may become more salient as children develop and reach preschool and school age. Multiple variables (genetic, environmental, and biological) result in a highly complex picture. The next steps and strategies to support families impacted by opioid use disorder are explored. Model programs are also considered, including integrated care for the child and mother, parenting supports, and augmentations to home visiting.

<https://pediatrics.aappublications.org/content/early/2019/07/16/peds.2019-0514>

The **Gunjan Lab**, in collaboration with the Tang Lab in FSUs Dept. of Biological Science have just had their paper on the Zika virus accepted for publication in the Journal of Virology. The paper titled "Zika virus infection induces DNA damage response in human neural progenitors that enhances viral replication" received contributions from Christy Hammack, Sarah Ogden, Joe Madden, Angelica Medina, Chongchong Xu, **Ernest Phillips**, **Yuna Son**, **Allaura Cone**, Serena Giovinazzi, **Ruth Didier**, David Gilbert, Hongjun Song, Guoli Ming, Zhexing Wen, Margo Brinton, **Akash Gunjan**, and Hengli Tang.

Graduate students **Allaura Cone** and **Sara York**, with **David Meckes** of the **Meckes lab** published a paper in Current Clinical Microbiology Reports titled "Extracellular Vesicles in Epstein-Barr Virus Pathogenesis". The abstract and link to the full paper are below.

Purpose of Review

Epstein-Barr virus (EBV) is a known determinant for numerous malignancies and may contribute to autoimmune diseases. The underlining mechanisms behind EBV pathologies are not completely understood. Recently, extracellular vesicles (EVs) released from infected cells have been found to produce profound effects on cellular microenvironments. Therefore, in this review, we sought to critically evaluate the roles of EVs in EBV pathogenesis and assess their potential therapeutic and diagnostic utility.

Recent Findings

EBV-altered EVs are capable of activating signaling cascades and phenotypic changes in recipient cells through the transfer of viral proteins and RNAs. Moreover, several EV-associated microRNAs have encouraging prognostic or diagnostic potential in EBV-associated cancers.

Summary

Current evidence suggests that EBV-modified EVs affect viral pathogenesis and cancer progression. However, further research is needed to investigate the direct role of both viral and host products on recipient cells and the mechanisms driving viral protein and RNA EV packaging and content modification.

<https://link.springer.com/article/10.1007%2Fs40588-019-00123-6>

Maicon Landim-Vieira and **Dr. J. Renato Pinto** of the **Pinto Lab**, in collaboration with Joslyn M. Schipper and Dr. P. Bryant Chase of Biological Sciences recently had their publication entitled "Cardiomyocyte nuclearity and ploidy: when is double trouble?" accepted by the Journal of Muscle Research and Cell Motility. The abstract and link to the full paper is below.

Considerable effort has gone into investigating mechanisms that underlie the developmental transition in which mammalian cardiomyocytes (CMs) switch from being able to proliferate during development, to essentially having lost that ability at maturity. This problem is interesting not only for scientific curiosity, but also for its clinical relevance because controlling the ability of mature CMs to replicate would provide a much-needed approach for restoring cardiac function in damaged hearts. In this review, we focus on the propensity of mature mammalian CMs to be multinucleated and polyploid, and the extent to which this may be necessary for normal physiology yet possibly disadvantageous in some circumstances. In this context, we explore whether the concept of the myonuclear domain (MND) in multinucleated skeletal muscle fibers might apply to cardiomyocytes, and whether cardio-MND size might be related

to the transition of CMs to become multinuclear. Nuclei in CMs are almost certainly integrators of not only biochemical, but also—because of their central location within the myofibrils—mechanical information, and this multimodal, integrative function in adult CMs—involving molecules that have been extensively studied along with newly identified possibilities—could influence both gene expression as well as replication of the genome and the nuclei themselves.

<https://link.springer.com/article/10.1007/s10974-019-09545-7>

Lela Stefanovic and **Branko Stefanovic** of the **Stefanovic Lab** recently published a manuscript entitled "Technology for Discovery of Antifibrotic Drugs: Phenotypic Screening for LARP6 Inhibitors Using Inverted Yeast Three Hybrid System" in the journal *ASSAY and Drug Development Technologies* describing design, performance, and application of new technology for phenotypic screening of antifibrotic drugs. The abstract and citation are below.

Fibrosis is defined by excessive production of type I collagen in various organs. Excessive type I collagen production in fibrosis is stimulated by binding of RNA protein LARP6 to the structural element of collagen mRNAs, the 5' stem loop (5'SL). The LARP6-dependent regulation is specific for type I collagen and critical for fibrosis development. Inhibitors of LARP6 binding have potential to be specific antifibrotic drugs, as evidenced by the discovery of one such inhibitor. To create technology for phenotypic screening of additional compounds we developed an inverted yeast three hybrid system. The system is based on expression of human LARP6 and a short RNA containing the 5'SL of human collagen $\alpha 1(I)$ mRNA in *Saccharomyces cerevisiae* cells. The cells were engineered in such a way that when LARP6 is bound to 5'SL RNA they fail to grow in a specific synthetic medium. Dissociation of LARP6 from 5'SL RNA permits the cell growth, allowing identification of the inhibitors of LARP6 binding. The assay simply involves measuring optical density of cells growing in multiwell plates and is pertinent for high throughput applications. We describe the specificity of the system and its characteristics for high throughput screening. As a proof of principle, the result of one screen using collection of FDA approved drugs is also presented. This screen demonstrates that using this technology discovery of novel LARP6 inhibitors is possible.

Assay Drug Dev Technol. 2019 Apr;17(3):116-127. doi: 10.1089/adt.2018.904. Epub 2019 Mar 22.



The Office of Postdoctoral Affairs at Florida State University

New Postdoc Orientation

Friday, August 16th, from 8:30 am to 3:00 pm

Honors Scholars & Fellows Building (HSF)

There will be an orientation for all postdoctoral scholars and their mentors that have been on the FSU campus for one year or less.



Policies, resources, funding opportunities, salary/benefits, formulation of your IDP, postdoc network & programs

Please inform all postdoctoral scholars in your department and around campus of this important new event.

If you have additional questions, please contact Debra Ann Fadool at dfadool@bio.fsu.edu

To register for orientation and lunch for you and your advisor, please scan the QR code or visit the link provided below by August 13th. Visit opda.fsu.edu for agenda.



https://fsu.qualtrics.com/jfe/form/SV_5vSF1uPyVhcgfWJ



Special Events

Friday Aug. 16th, 8-5pm

Mental Health First Aid course

Mental Health First Aid is an 8-hour training course designed to give members of the public key skills to help someone who is developing a mental health problem or experiencing a mental health crisis. Just as CPR training helps a layperson without medical training assist an individual experiencing a heart attack, Mental Health First Aid training helps a layperson assist someone experiencing a mental health crisis.

This course is open to the public. Those interested in removing the stigma associated with mental illness and learning to give first aid are encouraged to register.

Contact Susan Salahshor for more information at: susan.salahshor@med.fsu.edu

Saturday Aug. 17th, 10-4pm

FSU Primary Health GRAND OPENING & COMMUNITY EVENT

On Saturday, August 17th, we will have a GRAND OPENING EVENT for the community with food, music, and entertainment. We want to get to know the community and we want them to get to know us. We are planning to have several of our student groups having tables for health information. There will be face painting and other activities for children.

Save the Date

Friday, September 13th

3rd Florida Translational Cell Biology Symposium

Hosted on the campus of the University of Florida, the symposium will be a perfect environment for students, postdocs, and faculty from around the state to discuss the translational aspects of many topics within the broader field of cell biology. Researchers at all career stages will have the opportunity to present their work in either poster or lecture format, network with scientists from other institutes during a provided lunch and evening reception, and attend discussion groups on issues related to career development.

Participation from undergraduates, graduate students, and postdocs is highly encouraged. The submitters of the top abstracts in the graduate student and postdoc categories will be selected to give oral presentations. Abstracts not selected as talks will be given consideration for a poster instead.

Registration for the 2019 symposium opens on July 8. (See Caitlyn Blake-Hedges or Marisa Tillery for more info).



Reporting Workplace Accidents

➡ Please report any injury or illness to AmeriSys at 1-800-455-2079 ⬅

If a lab worker who is an employee (faculty, staff, graduate student, OPS employee or registered volunteer) sustains a work-related injury or illness that requires **EMERGENCY MEDICAL TREATMENT**, they should go directly to the hospital or if needed call emergency medical services by dialing 911.

The supervisor or designated employer representative should **IMMEDIATELY** contact AmeriSys and provide the injured employee's name, where they are going for treatment, and the employee's date of birth. AmeriSys will immediately contact the medical facility to initiate medical case management. AmeriSys will contact the supervisor once the emergency situation is under control.

The supervisor/designated Department representative should complete an Accident Investigation Report and forward it to the Workers' Compensation Manager within 48 hours of the accident.

If an employee is injured and requires **NON-URGENT** or **NO MEDICAL TREATMENT**, the employee **MUST immediately report the accident to the supervisor/designated Department representative** who should immediately report the claim to AmeriSys. This will initiate medical treatment or create a record of the accident. The Accident Investigation Report should be completed and forwarded to the Workers' Compensation Manager within 48 hours of the accident.

Should an injury occur resulting in the death of an employee, the supervisor/designated Department representative should immediately report the death to the following: Workers' Compensation Manager, Adline Norwood at 850-645-2731; the Associate Director of Risk and Insurance Services, Laymon Gray at 850-645-2279; and the Division of Workers Compensation Claims at 1-800-219-8953. Once this has been done, the accident should be called into AmeriSys.

Please report **ANY** injury or illness to AmeriSys at 1-800-455-2079

For more info please visit: https://hr.fsu.edu/?page=eoc/wcp/wcp_home#reporting

Do you have news you wish to share in the next Biomed Newsletter? If so, please send it to Ryan Teston at: ryan.teston@med.fsu.edu or joseph.teston@med.fsu.edu