

FSU Biomed

Florida State University College of Medicine

www.med.fsu.edu/BioSci



Student News

BMS graduate student **Dingani Nkosi** of the **Meckes Lab** received a \$500 travel award to attend the International Society for Extracellular Vesicles and Metastasis Research Society's Joint Conference on Extracellular Vesicles and Cancer in Nashville Tennessee. Postdoctoral fellow **Dr. Li Sun** and BMS graduate students **Allaura Cone** and **Monica Abou Harb** also of the **Meckes Lab** attended the meeting and presented their work as well.

3rd Annual Biomed Retreat

The Biomedical Sciences Departmental Retreat took place this past month. This annual event was coordinated by the graduate students, led by **Caitlyn Blake-Hedges** and **Marissa Tillery**. The retreat featured a three minute thesis competition, faculty poster sessions, guest speaker **Dr. Helen Phipps**, and of course, opportunities to enjoy some downtime with peers over food and beverages.

Dr. Phipps, the keynote speaker, is a 2013 graduate of **Dr. Blaber's** lab currently working for Booz Allen Hamilton as Senior Lead Scientist.

Upcoming Events

September 7

Home Football Game 5pm

September 11

Seminar Series: Melissa Martin

September 12

Grand Rounds

September 18

Seminar Series: Randi Reed

September 21

Home Football Game TBD

September 25

CTSA Kickoff

September 28

Home Football Game TBD

NOTICE TO ALL PERSONNEL:

DO NOT prop doors to office suites and labs open after hours and on weekends. If you need access to them, please request card swipe access. This is for your own safety and security.

3rd Annual Biomed Retreat



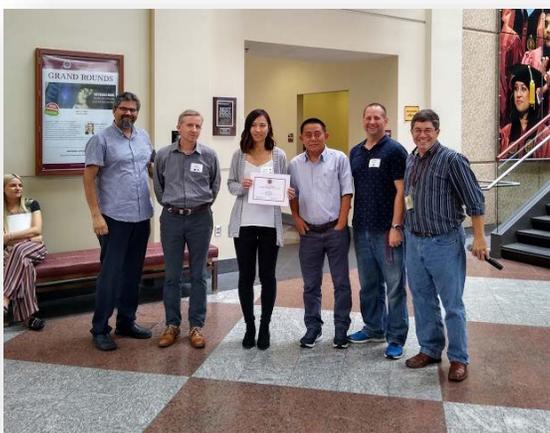
Above are the award winners for the 3 Minute Thesis Competition. From left to right: **Randi Reed** of the Tomko Lab (People's Choice), **Hyo Jeong Yong** of the Julia Wang Lab (2nd Place), and **Sara Jones** of the Bhide Lab (1st Place).



Marisa Tillery is a member of the **Megraw Lab** and the 2019 recipient of the Hurt Leadership Award. Named after the College's founding Senior Associate Dean for Research and Graduate Programs, Dr. Myra Hurt, this award is given to the graduate student in the department who has made the most significant service contributions to the department, the profession, and the community.



Kristen Schoepfer (not pictured) is a member of the **Kabbaj lab** and the recipient of the 2019 Senior Rill Award. This award, named after Dr. Randolph Rill is given to the senior graduate student in the department who has made the most significant contributions to their field this past year. The award was accepted by Mohamed Kabbaj on Kristen's behalf.



Jennifer Zhang is a member of the **Zhou lab** and the 2109 recipient of the Junior Rill Award. This award is given to the early stage graduate student in the department who has made the most significant contributions to their field this past year.



Superlatives:

Allaura Cone: Most likely to know all the Department gossip

Caitlyn Blake-Hedges: Most likely to forget her own superlative & Most likely to go to Coachella

Caroline Strong: Most likely to train the mice to overthrow the PIs

Chris Hagemeyer: Most likely to plan his experiments around the Biomed social

Colleen Palmateer: Most likely to be singing Disney late night in the lab

Connie Tenorio: Most likely to be playing video games after work

Cory Haluska: Most likely to be seen wearing shorts in the middle of winter

Delaney Sherwin: Most likely to not skip leg day

Devin Hagarty: Most likely to skip the retreat to go to Burning Man

Dingani Nkosi: Most likely to be watching a soccer match in the lab

Elise Wight: Most likely to have the perfect family

Ernest Phillips: Most likely to be on the dance floor

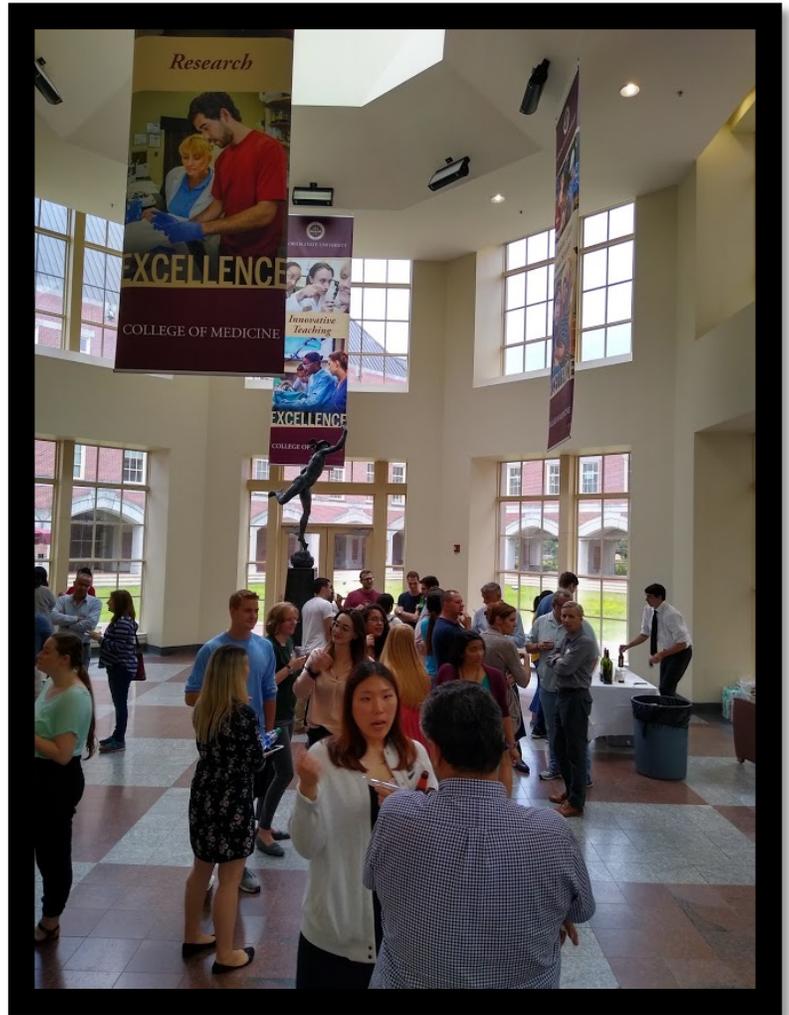
Gloria Lee: Most likely to be seen wearing colorful leggings

Grace Hammel: Most likely to say sorry even when she did nothing wrong

Hongru Hu: Friendliest person in the Department

Hyo Jeong Yong: Most likely to have the most organized lab notebook

Jaimie Johnston: Most likely to steal your coffee



Jennifer Zhang: Most likely to have a side job as an artist

Jenny Warnock: Most likely to negatively interpret positive data

Jonathan Ryan: Most likely to be seen at Proof after work

Jordan Logue: Most likely to eat Whataburger for every meal

Karissa Dieseldorff-Jones: Most likely to be seen walking around the labyrinth with her husband

Kristin Schoepfer: Most stylish hair in the Department

Kwangjun (KJ) Lee: Most likely to be in lab past 6PM

Maicon Landim-Vieira: Most likely to throw the best party

Marisa Tillery: Most likely to know about all the deals for free food

Maryam Ayazi: Most likely to be more scared of a mouse than the mouse is of her

Melissa Martin: Most likely to move out of the country

Nella Delva: Most likely to be politically correct

Randi Reed: Most likely to be infuriated by the use of non-metric units

Rebecca Buchwalter: Most likely to win a baking competition

Sam Pavlock: Most likely to deep clean the lab

Sandra Zivkovic: Most likely to clean up after everyone in the lab

Sara Jones: Most likely to rescue a stray kitten

Sara York: Most likely to listen to you complain without any judgement

Thomas Sullenberger: Most likely to fall off his chair viewing a computer

Xiaoyan Yu: Most likely to be seen with a smile on her face

Yiming Zheng: Most likely to win a Nobel Prize

Yuna Son: Most likely to be seen traveling somewhere new on the weekend

Zack Jones: Best beard in the Department

Funding News

Tim Megraw received a new 3-year grant from the NIH to investigate gamma-tubulin complexes in collaboration with **Robb Tomko**. A summary of the research being conducted is below:



The microtubule cytoskeleton maintains critical basic functions of all eukaryotic cells. Microtubules are the main trafficking conduit for molecules, macromolecular assemblies, and organelles to support a wide range of cellular processes, and at mitosis are organized into a bipolar spindle apparatus for the accurate segregation of chromosomes at cell division. Clinically, some of the most effective and enduring anticancer drugs target microtubules. In the project funded by a new grant from the NIH, being conducted by the Megraw lab in collaboration with the Tomko lab in Biomedical Sciences, the research team is investigating the functions of a protein complex called the gamma tubulin complex. The gamma tubulin complex is a well-established nucleator/stimulator of MT assembly. The team recently discovered a second class of gamma tubulin complex that is essential for specialized cell types in the testis. This project will determine the diverse functions of these two classes of gamma tubulin complexes, testing their relative microtubule nucleation activities, and their functions in vivo. The outcome will be a new understanding of the critical molecular machinery involved in microtubule assembly and begin to establish whether diverse regulators can and should be targeted separately in clinical models.



The **Meckes lab** has received phase one funding from Synergy Biologics to study the use of extracellular vesicles from mesenchymal stem cells for wound healing.

Faculty News



Between August 23rd and the 25th, **Mohamed Kabbaj** attended the Vole meeting 2019 at the University of Texas at Austin. Also attending the meeting was **Dr. Florian Duclot** and **Nella Delvin**, both of whom are members of the Kabbaj lab. Dr. Kabbaj spoke at the session on “Molecular, neural & endocrine mechanisms of attachment” with his talk: “**Epigenetics of social bonding in prairie voles**”. Additionally, Lindsay Sailer, a former member of the Kabbaj Lab presented a poster titled “Consequences of prenatal exposure to valproic acid in the socially monogamous prairie vole”, referencing work previously done in the lab.



Dr. Florian Duclot presented a poster titled “**Transcriptomic regulations underlying pair bond maintenance in the socially monogamous prairie voles**”.



Dr. Mujeeb Cheerathodi was awarded the 2019 **Outstanding Achievement as a Postdoctoral Scholar** award from BMS.

Publications

Caitlyn Blake-Hedges and **Tim Megraw** published a review in the Springer Nature book "The Golgi Apparatus and Centriole: Functions, Interactions, and Role in Disease" titled "Coordination of Embryogenesis by the Centrosome in *Drosophila melanogaster*". Link and Abstract are below:

The first 3 h of *Drosophila melanogaster* embryo development are exemplified by rapid nuclear divisions within a large syncytium, transforming the zygote to the cellular blastoderm after 13 successive cleavage divisions. As the syncytial embryo develops, it relies on centrosomes and cytoskeletal dynamics to transport nuclei, maintain uniform nuclear distribution throughout cleavage cycles, ensure generation of germ cells, and coordinate cellularization. For the sake of this review, we classify six early embryo stages that rely on processes coordinated by the centrosome and its regulation of the cytoskeleton. The first stage features migration of one of the female pronuclei toward the male pronucleus following maturation of the first embryonic centrosomes. Two subsequent stages distribute the nuclei first axially and then radially in the embryo. The remaining three stages involve centrosome-actin dynamics that control cortical plasma membrane morphogenesis. In this review, we highlight the dynamics of the centrosome and its role in controlling the six stages that culminate in the cellularization of the blastoderm embryo.

Link: https://link.springer.com/chapter/10.1007%2F978-3-030-23173-6_12

The Tomko lab has a paper this month published in Scientific Reports, entitled: "Proteasome subunit $\alpha 1$ overexpression preferentially drives canonical proteasome biogenesis and enhances stress tolerance in yeast." The abstract is below:

"The 26S proteasome conducts the majority of regulated protein catabolism in eukaryotes. At the heart of the proteasome is the barrel-shaped 20S core particle (CP), which contains two β -rings sandwiched between two α -rings. Whereas canonical CPs contain α -rings with seven subunits arranged $\alpha 1$ - $\alpha 7$, a non-canonical CP in which a second copy of the $\alpha 4$ subunit replaces the $\alpha 3$ subunit occurs in both yeast and humans. The mechanisms that control canonical versus non-canonical CP biogenesis remain poorly understood. Here, we have repurposed a split-protein reporter to identify genes that can enhance canonical proteasome assembly in mutant yeast producing non-canonical $\alpha 4$ - $\alpha 4$ CPs. We identified the proteasome subunit $\alpha 1$ as an enhancer of $\alpha 3$ incorporation, and find that elevating $\alpha 1$ protein levels preferentially drives canonical CP assembly under conditions that normally favor $\alpha 4$ - $\alpha 4$ CP formation. Further, we demonstrate that $\alpha 1$ is stoichiometrically limiting for α -ring assembly, and that enhancing $\alpha 1$ levels is sufficient to increase proteasome abundance and enhance stress tolerance in yeast. Together, our data indicate that the abundance of $\alpha 1$ exerts multiple impacts on proteasome assembly and composition, and we propose that the limited $\alpha 1$ levels observed in yeast may prime cells for alternative proteasome assembly following environmental stimuli."

Authors are recent BMS Ph.D. program graduate **Lauren A. Howell**, former BMS researcher **Anna K. Peterson**, and **Robert J. Tomko Jr.**

Alumni, Family & Friends

Tailgate



SEP 21, 2019

**4HRS PRIOR TO KICKOFF
COLLEGE OF MEDICINE COURTYARD**


FSU MEDICAL ALUMNI
FLORIDA STATE UNIVERSITY COLLEGE OF MEDICINE

Special Events

Proteomics/Genomics Joint Interest Group Fall Orientation

Date: Monday, September 9th

Time: 12:30-1:30pm

Location: Room 1303, College of Medicine

The Translational Science Laboratory houses state of the art equipment including Thermo Q Exactive HF, Thermo Orbitrap-Velos, ABSCIEX 5800 MALDI-TOF/TOF, Waters Xevo TQ-S and Illumina NovaSeq 6000, 10X Genomics and provides end to end services that include all aspects of proteomics, metabolomics, mass spectral imaging and genomics from sample prep to data analysis.

The Core Facilities at Department of Biological Sciences provides consulting and services for NGS library prep, Protein expression as well as biological imaging and hybridoma technology.

We intend to conduct seminars, workshops and technical discussions related to proteome, metabolome and genome analysis.

The fall orientation meetings will be held on the second Monday of every month, starting with Sept. 9th. The meeting is intend to provide an overview of the facility and the services available to you all. Please come armed with your suggestions and/or questions to make it a fruitful discussion.

Grand Rounds: "Marijuana Use in Persons Living with HIV: Friend or Foe?" - Robert L. Cook, M.D., MPH

Date: Thu, 9/12/2019

Time: 4 p.m.

Location: Durell Peaden Auditorium

Robert L. Cook is an infectious disease epidemiologist who conducts population-based research focused on prevention of HIV infection and other sexually transmitted diseases. Alcohol and marijuana use are common in persons living with HIV infection, and both substances have potential benefits and potential harms. Cook will discuss behavioral and biological mechanisms that alcohol and marijuana use could affect in persons with HIV in Florida, provide suggestions on how to screen for harmful use, and describe his current research activities on these topics in Florida.

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.

Together
We're Making Discoveries
TO IMPROVE LIVES

Join us as we celebrate
Florida State University's expanded role in a
\$29 million
NIH Clinical Translational Science Award.

Partnering with the University of Florida,
we're part of a nationwide network of 50
CTSA hubs developing, demonstrating and
disseminating advances in translational
science, devoted to turning research
discoveries into new approaches that
improve health.

The CTSA kickoff event is meant to inform
FSU research faculty and others about
potential funding opportunities as well as to
celebrate this major achievement for the
entire university.

Wednesday, Sept. 25
4 p.m.
FSU College of Medicine atrium
1115 West Call St.

Light hors d'oeuvres

Questions?
Terra Bradley
Terra.bradley@med.fsu.edu • 850-645-2159

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