

The Hallmarks of



CANCER
BIOLOGY

VOLUME 3 - ISSUE 2
DECEMBER 2016

(EMBRACE)

Class of 2015 *p4* • UAB Title IX *p6* • Faculty in Focus *p7* • Outstanding Woman in Science *p9* •
GRADient *p10* • Recent Graduates *p11* • GBSO International Student Panel *p13* • UAB CCC Retreat *p14* •
Komen Race for the Cure *p15* • GBSA *p16* • SACNAS *p17* • Accolades *p18*

UAB GBS CANCER BIOLOGY THEME

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(EMBRACE)

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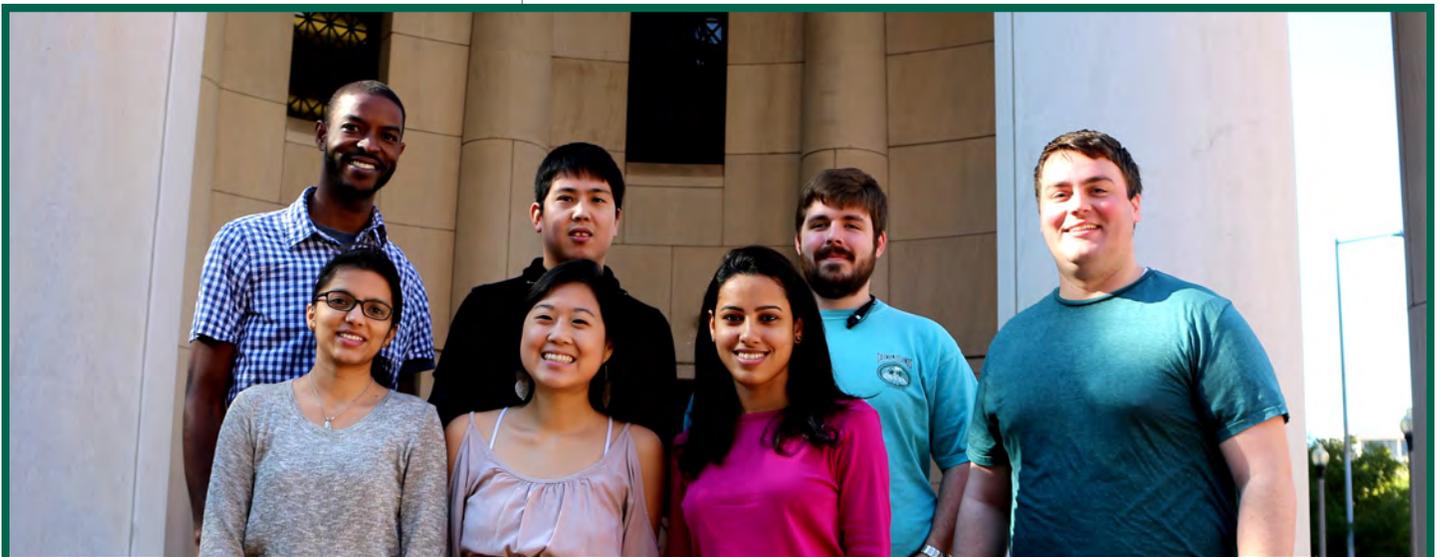
Note from the Directors' Desk

This has been quite an eventful semester in 2016. As we come to the end of the Fall semester this year we welcome you to take a few minutes to browse our Cancer Biology Theme newsletter, share our pride and joy in the accomplishments of our students. We began the semester by welcoming eight new students into Cancer Biology Theme. These students hail from diverse cultural and geographic backgrounds, but are unified under the GBS-CANB umbrella. These students have candidly shared with you their preferences ranging from fighting ducks or horses to the kind of sandwiches they like! This issue also puts the spotlight on two new faculty at UAB, Dr. Lyse Norian and Dr. Rob Welner. Both investigators interrogate the common underlying theme of the crosstalk of tumor cells with their microenvironment, and finding ways to selectively target tumor cells to achieve better outcomes. In this issue we have highlighted the culturally and socially diverse environment of UAB and the initiatives to make and showcase UAB as a welcoming, safe and accepting place for students from all walks of life.

This year the CANB students made a clean sweep of the awards at the UAB Comprehensive Cancer Center Annual Retreat. Hawley Pruitt, Trung Vu, and Brent Jones claimed the first, second, and third places for their research presented at this retreat. Kudos to them!!!! We are proud of the accomplishments of all our students, those who have graduated, qualified, published papers, won awards, and contributed to society. We laud their efforts, not just achievements. As we get ready to embark on another recruitment season, we wish to build on the success of our current students and recruit the best of the best to continue our trajectory as an outstanding Cancer Biology graduate program in the country. As we round out 2016, we wish you and your near and dear ones Happy Holidays. Sit back with your cup of hot chocolate (or whatever libations you prefer!) and read our Fall 2016 issue of The Hallmarks of Cancer Biology. ●

Lalita Shevde-Samant, Ph.D. & Soory Varambally, Ph.D.

Visit our website: <http://www.uab.edu/gbs/cancerbiology>



“...At the heart of our campus culture and our shared American culture is the **embrace** of our diversity and mutual respect among individuals from many different backgrounds, ethnicities, faiths and perspectives. That coming together of many in a singular character and common purpose—*e pluribus unum*—is what makes our constitutional democracy so vibrant, resilient and inclusive. This collaborative spirit is also what makes our campus so effective at the innovation and service that drives our mission and effects positive change at home and around the world.

That is the character and creed of UAB, and it always will be. As we move forward, as a campus and as a country, let us do so in that same indomitable spirit, with civility, understanding, compassion and respectfulness for one another.”

UAB President Ray L. Watts, M.D.

from Letter to UAB Students, Faculty and Staff

November 11th, 2016

14 things about us

Interview by Joshua Fried



Nick Anderson

1. Renton, Washington. 2. BYU. 3. Studied neural tube defects in chicken embryos. 4. I googled best cancer biology programs, and heard good things about UAB from people. 5. Less classes, more freedom. 6. The food is really good. 7. Get a job. 8. A police man on Mondays and Tuesdays, a fireman on Wednesdays and Thursdays, and an artist on Fridays. 9. Tour Europe. 10. Cuddle with my daughter, play guitar. 11. Red Wall, Inception, Jason Mraz, never seen one, Robin Hood. 12. Watch the movie. 13. 100 duck sized horses. 14. Italian herbs and cheese, pepperoni, salami, pepper jack cheese, onions, toasted, loaded with spinach, little bit of green pepper, ranch, honey mustard, and chipotle southwest sauce.

1. Where are you from?

2. Where did you receive your undergrad?

3. Can you give a short explanation of your research experience?

4. What interested you in UAB?

5. What is your favorite part of being a grad student?

6. Have there been any pleasant surprises about living in Birmingham?

7. What are your future plans / goals after earning your PhD?

8. What did you want to be when you grew up when you were a child?

9. What would be your ideal vacation?

10. What do you like to do in your spare time?

11. What is your favorite book? Movie? Music? Broadway musical? Disney Movie?

12. Would you rather read the book or watch the movie?

13. Would you rather fight 100 duck sized horses or one horse sized duck?

14. Describe your favorite sandwich.

Reginald Brown



1. Orlando, Florida. 2. Indian River State College. 3. Investigated heat shock proteins in strawberry plants. 4. The PREP program. 5. The community of science and learning. 6. It is less rural than I thought it would be. 7. To become a college professor. 8. A police officer. 9. Visit the whole world. 10. Watch movies. 11. Immortal Life of Henrietta Lacks, The Color Purple, Gospel Music, Rent since that is the only one I've seen, Lion King. 12. Watch the movie. 13. One horse sized duck. 14. Two pieces of bread, pulled pork, BBQ sauce.



Wayne Howse

1. Gardendale, Alabama. 2. UAB. 3. Characterized neuronatin expression in autosomal dominant retinitis pigmentosa. 4. I enjoyed my undergrad experience here. 5. The openness and willingness of faculty to help and discuss science. 6. The progress Birmingham has made to be more of a live in city and less of a commuter city. 7. I would like to be a teaching profess / PI at a university, with more emphasis on the teaching side. 8. An aeronautical engineer. 9. I would like to travel the entire world. 10. Camping, hiking, general outdoor activities. 11. Peak, Inception, Country / Rock, Rent, Lion King. 12. Read the book. 13. Fight the duck, just to see the big duck. 14. Sourdough bread, light mayo, spicy brown mustard, ham, turkey, roast beef, several slices of tomato, and topped with a crisp lettuce leaf.

Zhang Li



1. Wuhan, China. 2. East China University of Science and Technology. 3. I researched TCF4 transcription factor function in breast cancer. 4. Strong Cancer Biology and Immunology programs. 5. Doing lab research. 6. It is better than I expected, the weather is good. 7. I want to become a PI. 8. A police officer. 9. Travel with my wife. 10. Play NBA 2k. 11. Harry Potter Series, Harry Potter Series, Jay Zhou, never seen one, Zootopia. 12. Watch the movie. 13. One large duck. 14. This one is made by my wife: tuna, chicken, tomato, lettuce, on white bread.

(EMBRACE) Testimony

As an international student, I can feel the diversity and inclusion in our theme, even at UAB. Everyone is nice and friendly, I am glad to be here to further my education and live a new life.



Victoria McClearn

1. Olive Branch, Mississippi. 2. Ole Miss. 3. I researched dimerization kinetics in neural cadherin. 4. The strong program and research opportunities. 5. The opportunity to learn and hear about other people's research and rotations. 6. It is nicer than I expected. 7. Become a PI at St. Jude's. 8. An oncologist. 9. Touring Europe and Asia. 10. Read, and hike. 11. Emma, Pride and Prejudice, Pop music, Phantom of the Opera, Beauty and the Beast. 12. Hand down read the book. 13. 100 duck sized horses. 14. I don't eat sandwiches.

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12. Would you rather read the book or watch the movie?

13. Would you rather fight 100 duck sized horses or one horse sized duck?

14. Describe your favorite sandwich.



Krystle Ong

1. Phoenix, Arizona. 2. Northern Arizona University. 3. Investigated anti biotic combinations in gram positive and gram negative bacteria. 4. The integration of the hospital with the research labs, and a change of scenery. 5. Being exposed to different areas of research. 6. There are seasons. 7. Undecided. 8. Lawyer, doctor, superstar. 9. Travel the world, starting with Cambodia. 10. I like to dance. 12. Angels and Demons, Inception, hip-hop, Phantom of the Opera, Aladin. 12. Read the book. 13. 100 duck sized horses. 14. Philly cheese steak no mushrooms.

(EMBRACE) Testimony

I love that we have a diverse group of people from different backgrounds in our theme. Being able to work with people who come from different places is a privilege and definitely eye-opening. I am grateful for everyone I have met in Cancer Biology, and their unique perspectives.



Sindhu Nair

1. Mangalore, India. 2. Rajiv-Gandhi University of Health Sciences. 3. I researched neoangiogenesis mechanisms in oral cancer. 4. Top program in Cancer Biology and it is interdisciplinary. 5. Doing the laboratory work. 6. The weather is similar to India, but not as hot and humid. 7. Teaching and being an independent researcher. 8. A doctor. 9. Go on a world tour no brainer. 10. Read quite a bit. 11. Harry Potter Series, action movies, AR Rahman, never seen one, Jungle Book. 12. Book any day. 13. One horse sized duck. 14. Meatball sub with any kind of cheese.

(EMBRACE) Testimony

In the short time that I have been at UAB it has been quite evident how diverse the campus is. Students are welcome from all backgrounds and are all treated the same regardless of their ethnicity, culture or religion. The Fall 2016 class of the Cancer Biology theme is quite a good example of diversity with a mix of students from different educational and multicultural backgrounds.



Sweta Patel

1. Gujarat, India. 2. Anand Pharmacy College, and Master's from Amity University. 3. I researched the anti-cancer activity of silver nanoparticles in HeLa cells. 4. The research. 5. I'm being paid. 6. The weather. 7. Get a post-doc or go into teaching. 8. A Doctor. 9. Spending time with family. 10. Read books, or do something adventurous. 11. Krishna Key and Chanakya Chants by Ashwin Sanghi, no favorite movie, any soft music with good lyrics, never seen one, Secret Life of Pets. 12. Read the book. 13. One horse sized duck. 14. Italian bread, lettuce, lots of mayo and cheese no American, all veggies and sauces, olives, tomatoes, jalapenos, veggie patty or eggs.

(EMBRACE) Testimony

Cancer Biology is the one theme to have a very diverse group admitted to Fall 2016. We are probably 4 off the 8 students who come from different backgrounds. Speaking the truth, I did not really expect this, but am glad we admit students from all over the world.



UAB's commitment to a discrimination-free environment

by *Emily Feinstein, MEd and John Jones, PhD*

The University of Alabama at Birmingham (UAB) is committed to encouraging and sustaining a learning and living community that is free from harassment, violence, and prohibited discrimination. In that regard and consistent with federal law (e.g., Title IX of the Education Amendments of 1972 and the Violence Against Women Act), UAB has developed the comprehensive Student Violence and Sexual Misconduct Policy, applicable to all students (undergraduate, graduate, professional, or any student enrolled in any UAB program). Further, UAB conducts extensive education and awareness programs with the goal of preventing and discouraging sexual/gender violence and other forms of sexual misconduct.

As discussed within the policy and procedures, the Student Violence and Sexual Misconduct Policy prohibits all forms of sex/gender-based harassment, sexual/gender violence, sexual exploitation, relationship violence (domestic violence and dating violence), and stalking. Collectively, these terms are referred to in this policy as **“Sexual Misconduct.”** They are defined as “Prohibited Conduct.” (Note that non-sex/gender-based harassment is also a violation of university policy, as described under the university’s Equal Opportunity and Discriminatory Harassment Policy, available at <http://www.uab.edu/policies/content/Pages/UAB-BT-POL-0000052.aspx>.)

The Student Violence and Sexual Misconduct Policy serves three principal purposes. First, it establishes conduct standards—namely, prohibited sexual misconduct—for all UAB students. Note that a violation of this policy may also constitute a crime, which can be independently reported to UAB Police, Birmingham Police, or another appropriate law enforcement agency.

Second, the Student Violence and Sexual Misconduct Policy outlines reporting, investigation, and complaint resolution procedures in cases where it is alleged that a UAB student has engaged

in sexual misconduct. This policy refers to the individual who is the alleged victim of the behavior(s) in question as the **“Reporting Party”** and the student alleged to have committed the violation of the policy as the **“Responding Party.”** Both the Reporting and Responding Parties will be treated fairly and with respect throughout the process. Responding Parties are entitled to a presumption of innocence throughout the disciplinary process unless and until they are found responsible for a violation of this policy by meeting the preponderance of evidence standard of proof.

Within the Student Violence and Sexual Misconduct Policy, it specifies to whom violations of this policy should be reported, the availability of confidential reporting, administrative actions available to the complainant and the respondent, how the university will investigate and resolve alleged violations, possible sanctions, and appeals.

The Title IX Coordinator is primarily responsible for implementing these procedures. Anyone with concerns about a possible violation of the Student Violence and Sexual Misconduct Policy by a student is encouraged to contact the Title IX Interim Coordinator at 205-996-0132, jrjones3@uab.edu, or via the Title IX Website at <http://www.uab.edu/titleix/> where an incident can be reported online at https://cm.maxient.com/reportingform.php?UnivofAlabamaBirmingham&layout_id=8. Dr. John Jones can be located in the Hill Student Center, Suite 401.

Third, the Student Violence and Sexual Misconduct Policy describes resources available on campus and in the community to assist students in dealing with the impact of sexual misconduct, whether it happened recently or in the past. Such services include, for example, Title IX Resources and Referral Options, Student Health and Wellness, UAB Police Department, UAB Safe Zone Program, Birmingham Crisis Center Rape Response. ●

Dr. Lyse Norian

by *Abhishek Gangrade*



An Associate Professor in the Department of Nutrition Sciences, Dr. Lyse Norian is interested in evaluating changes in immune responses to solid tumors as a result of chronic obesity. Her research aims to use this knowledge to identify immunotherapies for advanced cancer patients and to develop new combinatorial immunotherapies against metastatic cancers.

You recently moved from the University of Iowa. What drew you to UAB?

UAB has a phenomenal reputation in immunology. I love the people here. There's a lot of energy, and it's a very collegial environment. The expertise from my home department, Nutrition Sciences, and the support from Nutrition Obesity Research Center has been fantastic as well. It's a phenomenal place to study the intersection of obesity and cancer.

What are your thoughts about the collaborative environment at UAB?

People told me about the collaborative and collegial environment at UAB. It's a reality. From establishing my lab to working with others on mouse models and learning of other investigators here, it has been a great experience. Within the past year, I've established quite a few collaborations. Everyone I've contacted has been willing to share their knowledge, models, and diets used for mice. It's been pretty phenomenal. I'm glad to be here!

What advice do you have for graduate students interested in cancer research?

The decision to choose a lab is a critical one. However, too many students stress about it more than necessary. At UAB, many labs are committed to excellent research. The goal should be to find a lab with a supportive mentor-mentee relationship rather than for the student to find a lab which works on a particular project. Finding an environment where the mentor encourages the student to approach questions and to think independently should be the goal. I've been fortunate myself already as I've had a couple stellar students since I've moved to UAB along with the ones who've moved with me!

As a graduate student, you were involved in a different field. What drew you to your current field?

My focus as a graduate student was on signaling. I had little involvement with mice research. As a postdoc, I wanted to be more involved in animal-related studies. At the time, more was becoming known about how cancer altered immune responses, which I thought was fascinating. I wanted to apply my lessons as a graduate student to mouse studies. While at Washington University, I heard an MD give a seminar in which she mentioned it was very difficult to know how to dose and treat obese cancer patients. Unfortunately, obese patients have a great deal of systemic inflammation. Ever since, I've felt compelled to figure out what's going on.

Since coming to UAB, did you feel that you've been able to work on totally novel and different ideas than previously conceived or expected?

I've started collaborating with Dr. Rebecca Arend who studies ovarian cancer. We've been evaluating immune responses to ovarian cancer which is a disease I never thought I'd be studying. I've also started working with Dr. Laura Rogers, who is looking at how exercise impacts quality of life for breast cancer survivors, and in particular, obese ones. We've funded a study to evaluate immune correlates in obese breast cancer survivors. In addition, we have other collaborations to examine impacts of different diets and formulations on tumor progression and immunity, which I could not have studied elsewhere. There's so much expertise here, and I've been so fortunate to leverage that!

Where do you see the future of research involving obesity and cancer?

It's going to be increasingly important for cancer researchers, and not only tumor immunologists, to start taking the environment of the organism as a whole into account when performing preclinical studies. In cancer research, almost everyone is using young, lean, inbred mice. Obesity is such a critical problem in the US right now. It's surprising how little we understand the impact of the obesogenic host environment on not only primary tumor growth but also metastatic dissemination, immune responses to tumors, and immunotherapeutic efficacy. These are all critical questions that need to be addressed. There have been amazing advances in immunotherapeutics for treating advanced tumors. There are patients who have not responded to other therapies but respond to immune stimulatory therapies, such as checkpoint blockades. Yet, nothing has been published in terms of patients who don't respond. How do co-morbidities such as obesity and type 2 diabetes impact immunotherapeutic efficacy? This is what we are investigating. As use of immunotherapies for cancer become issues of greater focus in the clinic, we need to know how can we take into account parameters such as age, obesity, cardiovascular disease in making clinical decisions. Can we devise more improved therapies as a result?

Dr. Robert Welner

by Samuel Febling



Dr. Robert Welner, an Assistant Professor in the Department of Hematology & Oncology, was welcomed to UAB in January 2016.

Where are you from?

I grew up in Maine and did my undergrad in Ohio. Following graduation, I moved back to Maine to complete my masters. I completed my Ph.D. in immunology/microbiology at the University of Oklahoma Health Sciences Center under the mentorship of Dr. Paul Kincade and postdoc fellowship

with Dr. Daniel Tenen at the Harvard Medical School.

What interested you in science? What inspires you?

Early on, I enjoyed the structure of science and math. Taking molecular biology and immunology courses in undergrad helped strengthen my curiosity in the sciences. However, I was never tied to one field of study. At each institution, I was more interested in working with a particular mentor. At the University of Oklahoma, I worked with Dr. Paul Kincade where we studied B cell development. This inspired my own work in the molecular biology of myeloid transcription factors and their effects on hematological malignancies.

What interested you in UAB?

I was interested in working with Dr. Bhatia, the Director of the Division of Hematology and Oncology. His work on malignant stem and progenitor cells in hematologic malignancies really attracted me and is what led me to UAB. During my interview, the highly collaborative nature of the university made me strongly consider UAB.

What has surprised you the most about UAB?

There is a plethora of people to work with from both inside and outside my field. The environment, with faculty and students to discuss science, bounce ideas off and interact with has been astounding.

What are your current research interests?

Distinct genetic dysregulation occurs between normal and diseased states of leukemia. We are investigating the effects of these dysregulations on the microenvironment and their effects on hematopoietic stem cell differentiation and renewal. We aim to understand the role of differential transcriptional regulation between normal and leukemic stem cells.

Where will your research take you next?

Long term, we would like to determine the mechanisms of dysregulation and why patients relapse. We are interested in determining how to correct this therapeutically.

Have there been any pleasant surprises about living in Birmingham?

The city is very diverse with very nice people. The food is what has surprised me the most. There are so many good places to eat. It has also been great seeing how much the city has changed in the time I've been here. I'm anxious to see how things progress within the next 5 years.

What do you do when you aren't in lab?

When I'm not in lab I enjoy running. It helps clear my mind so I can better think about science. It allows me to get new perspectives. I also keep up with sports. I am a big Ohio State Buckeyes and the Cincinnati Reds fan.

What might someone be surprised to know about you?

I'm a very simple guy. I am straightforward with people and those I talk with.

What would be your ideal vacation?

I would enjoy being anywhere warm, particularly along a beach with friends and family. ●

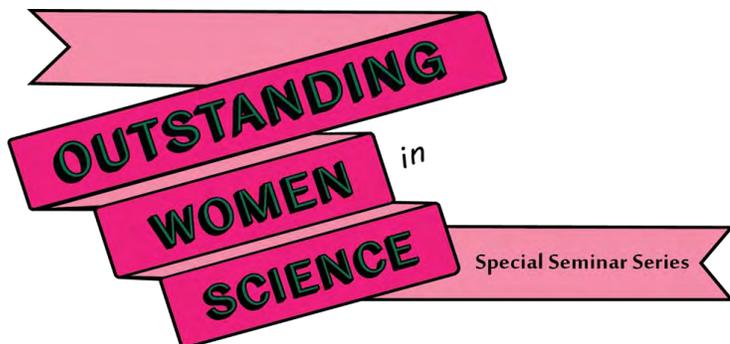


(EMBRACE) Testimony

UAB values diversity in higher education, and our commitment to this goal has been nationally recognized. The GBS Cancer Biology Theme includes students of different genders, religions, races and sexual orientations who are linked by their common desire to better understand and treat cancer. I am honored to work with these outstanding students whose range of perspectives offer valuable insights into our research.

Dr. Anita Hjelmeland

Assistant Professor, Cell Developmental and Integrative Biology
Cancer Biology Faculty



**OUTSTANDING
WOMEN
SCIENCE** in
Special Seminar Series

by *Kushani Shah*

The Outstanding Women in Science Seminar Series seeks to enhance the mentorship of graduate students and postdoctoral scholars by providing opportunities outside of the standard advisor-student mentor framework to engage with the research and personal experiences of high-achieving female scientists.

The series, organized collaboratively between the Department of Chemistry and the Department of Biochemistry and Molecular Genetics, with additional support from the Graduate School and the Office of Postdoctoral Education, started on Dec. 1, 2015 with Karen Fleming, Ph.D., of Johns Hopkins University who presented her work on the structure and function of membrane proteins. In spring 2016, Suzanne Lapi, Ph.D., director of UAB cyclotron facility and Associate Professor of Radiology presented “From Isotopes to Images: Cyclotron Production and Use of Radionuclides for Diagnostic Medicine.” In November 2016, the seminar series welcomed exciting presentations from Dr. Ahna Skop (University of Wisconsin-Madison) and Dr. Tracy Johnson

(University of California-Los Angeles).

Female graduate students had an opportunity to have lunch with the speakers in an informal environment to exchange thoughts and ideas about careers in science. During the meetings, students can ask career related questions and the speakers will elaborate on their experiences as a woman and/or as a minority in a male dominated field. This is also the chance for students to get feedback on their projects and facilitate research collaborations with the speakers.

Future events includes presentations and meetings with Dr. Abby Parrill (University of Memphis) on February 7th, 2017 and Dr. Sarah Heilshorn (Stanford University) on March 21st, 2017.

Seminar is open to everyone at UAB. Following the seminar, there is an informal networking event with the speaker at Birmingham’s well-known restaurant J. Clyde. ●



Dr. Ahna Skop's talk on November 1st, 2016



Dr. Tracy Johnson's talk on November 14th, 2016



GRADient

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Newest UAB student organization on campus! Who are we?

by Ashley Turner

GRADient at UAB is an organization dedicated to the pursuit of academic excellence and social and political awareness with respect to lesbian, gay, bisexual, transgender, and queer (LGBTQ+) graduate students, professional students, postdoctoral scholars and their allies. Membership is open and free to any graduate student, professional student or postdoctoral scholar at UAB with an active interest in contributing to GRADient at UAB. Since our conception in July 2016, our organization has blossomed with members from all corners, programs and departments across campus. Our two big events have included Queer Mixer and The Haunted Masquerade – huge turnouts, great opportunities to network and make a difference across UAB’s campus and community!

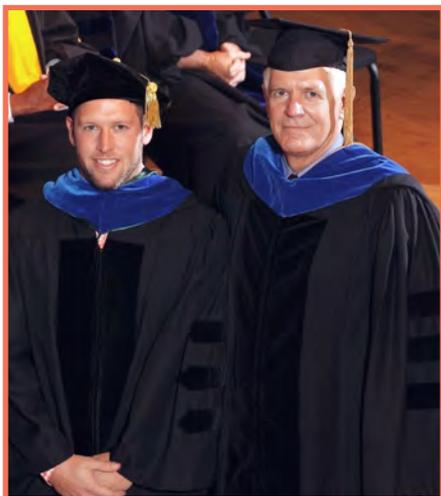
The Haunted Masquerade was a very spooky Halloween bash open to UAB and the community, with over 100 tickets sold and 40% of proceeds going to Birmingham AIDS Outreach and the Magic City Acceptance Center’s LGBTQ Prom this spring. It is never too late to get involved – we have monthly meetings for networking and planning, we would love to have you!

For more information about GRADient at UAB or interest in membership, please email GRADientatUAB@gmail.com, join our B-Sync portal, and check out our Facebook page! •



Monica and Zach

by Joshua Fried



Zachary Tibbs

Our bodies are equipped with an armada of drug metabolizing enzymes, protecting our biochemical landscape from chemical insult. In addition to protecting us from harmful drugs, these enzymes also pose a hurdle for the delivery of pharmaceuticals. Therefore, understanding the substrate selectivity patterns of polyspecific drug metabolizing enzymes, such as the sulfotransferases (SULTs), is important for the development of efficacious therapeutics. My dissertation was focused on refining our understanding of the molecular mechanism of SULTs, primarily focused on a gastrointestinal isoform, SULT1B1. Initially, we used molecular dynamic simulations to derive a molecular mechanism for SULT half-site reactivity, important for understanding a SULT's substrate selectivity pattern. Using protein engineering techniques, we then showed dimeric SULT1B1 activity was not heavily dependent on the half-site reaction mechanism, unlike other SULT isoforms. Lastly, we identified a high-frequency SULT1B1 variant found specifically in individuals of sub-Saharan African descent. We determined the variant isoform was kinetically deficient in its interaction with the SULT cofactor, therefore could arise in physiological metabolic differences such as an altered susceptibility to gastrointestinal malignancies arising through SULT1B1's bioactivation of procarcinogens.

Monica Lewis

SIN3 corepressor complexes play important roles in both normal development and breast cancer. Mammalian cells have two isoforms of SIN3 (SIN3A and SIN3B) that are encoded by distinct genes and have unique functions in many developmental processes. However, specific roles for SIN3A and SIN3B in breast cancer progression have not been characterized. We generated stable knockdown of SIN3 isoforms individually and in combination using three non-overlapping shRNA in two different metastatic breast cancer cell lines. Stable knockdown of SIN3B caused a significant decrease in transwell invasion through Matrigel and decreased the number of invasive colonies when grown in a 3D extracellular matrix. Conversely, stable knockdown of SIN3A significantly increased transwell invasion and increased the number of invasive colonies. These results were corroborated in vivo in which SIN3B knockdown significantly decreased and SIN3A knockdown increased experimental lung metastases. Next generation sequencing (RNAseq) was used to identify unique targets and biological pathways that were altered upon knockdown of SIN3A compared to SIN3B. Additionally, we analyzed microarray datasets to identify correlations of SIN3A and SIN3B expression with survival in patients with breast cancer. These datasets indicated that high mRNA expression of SIN3A as well as low mRNA expression of SIN3B correlates with longer relapse free survival specifically in patients with triple negative breast cancer which corresponds with our in vitro and in vivo data. These results demonstrate key functional differences between SIN3 isoforms in regulating the process of breast cancer metastasis and suggest metastasis suppressive roles of SIN3A and metastasis promoting roles of SIN3B.



Matthew McConnell, PhD
Cancer Biology Alumni
Class of 2010

(EMBRACE) Testimony

I came from having lived in Kentucky my whole life, with the desire to have some more, new, experiences. Since I've come to UAB and I've had a good time learning about, for instance, Chinese customs and culture (and genuine Chinese food) in my Chinese majority lab in addition to learning about, and enjoying, the differences between Kentucky and Alabama. In my experience the Cancer Biology program, more generally, is very accepting of differences among students and uses those differences to inform its policy with respect for everyone.



“...We are proud to have you here with us in Birmingham at a time when our democratic ideals are being tested, and we as a people are learning how to navigate a society more diverse than ever before. You help us see ourselves from the outside and make us examine our beliefs and become more thoughtful about our choices and decisions. Your contributions to our community are immeasurably important. [...]

UAB is committed to your success and your safety. You are a large and important part of the community that is dedicated to creating knowledge that will change the world, and we are here to serve you. Do not hesitate to contact us if you experience any behaviors on campus or in your neighborhood that make you feel uncomfortable or threatened. We have resources to help you and want to provide you with whatever we can to support you.”

International Student and Scholar Services Director

Catherine Crowe

from Message from the Director

November 17th, 2016



International Student Panel

by Asmi Chakraborty

UAB has always celebrated being a diversity hub and was one of the factors that attracted me to the university. However, diverse student population calls for its unique set up. Here at UAB we have an international house that is dedicated to making sure that international students make a successful transition from their home country. I house, as it is most commonly called, helps internationals with tax filing and returns, visa and the various other rather confusing documentations. Apart from this we have various student organizations which help students integrate themselves into the graduate school community. One of these organizations is GBSO, which is geared towards being a voice for the graduate students in general but it also makes sure to address the needs of the growing body of international students here at UAB. GBSO organizes social and academic events to enable students to have a more fulfilling graduate life. We also organize student forums to get an idea of what the students need. In our recent forum, certain difficulties faced by GBS international students were brought to our notice. In order to address this issue, we organized The International Student's Panel on 4th November, where we had representatives from various organizations to answer the questions of graduate international students. We had Catherine Crowe, director of International House, Daizy Walia, NRA Tax Coordinator, Michael Miller, Student housing representative, GBS international student Kushani Shah on the panel. In addition to this, Wells Fargo provided materials to help students with finance and also answered some common financial questions particularly pertaining to international students.

The session was very successful, informative and highly interactive. The dissatisfaction that was evident in our earlier student forum was quailed on realizing that the International House was not only open to suggestions but was also interested in actively changing their service to fit the needs of international graduate students. Ms. Crowe, who is the new director of the international house, wanted to make sure that they understood what could be done to improve the assistance that is provided to international students. She realizes that the current set up is geared towards undergraduate international students and not so much for graduate students. She has created a document with all of the helpful information such as housing and finance called COMPASS. The International House plans to send this out to every international student along with their offer letter when they are recruited to UAB. In this panel a helpful website called "Off Campus Housing" was also discussed which is a useful tool that can be used by internationals to look for roommates and apartments. Along with this, GBSO has also put together a list of graduate student mentors. We realized from our forum that although The International House does have some very helpful undergraduate international mentors they are not very helpful with the questions or the queries that graduate students have. We now have a list of volunteer graduate students who are willing to be mentors new international students and help them with their transition. This year the international student panel was set up a little late as this was the first time we were doing it. We intend to host this early August next year so that new students can benefit from it. ●



Mateus Mota
Cancer Biology Student, Class of 2015
GBSO Representative for Cancer Biology Theme

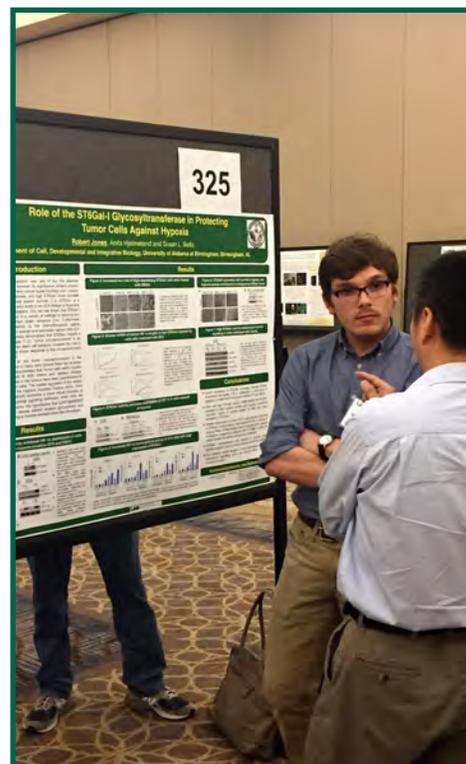
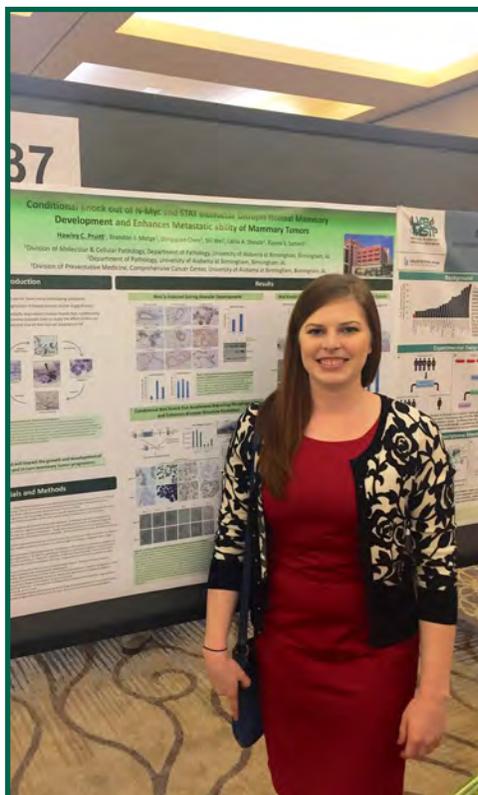
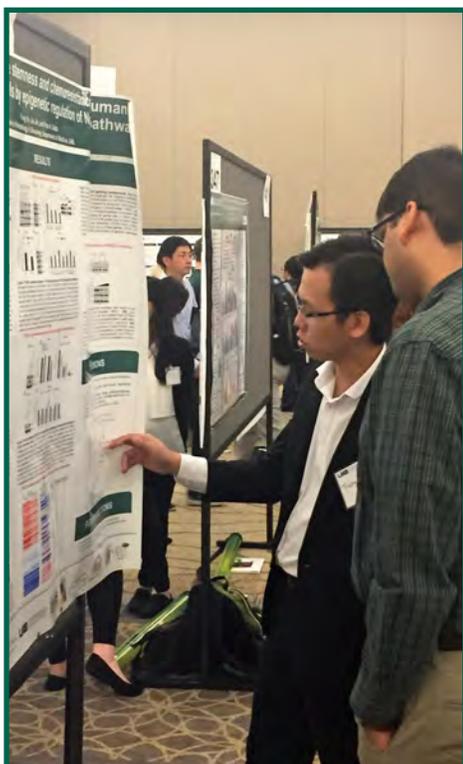
(EMBRACE) Testimony

As an international student, I can say that the Cancer Biology theme has always made me feel as a student pursuing my academic goals regardless of my country of citizenship. I see it as a welcoming and inclusive environment in which individuality is not seen as a problem but something positive that empowers our theme.

UAB COMPREHENSIVE CANCER CENTER

18TH ANNUAL RESEARCH RETREAT

by *Kaitlyn Dorsett*



The UAB Comprehensive Cancer Center held its 18th annual research retreat on October 17th of this year. The meeting was held downtown, near to UAB campus, and was a highly successful day of scientific learning. UAB hosted several speakers from around the country, including professors from the University of California, Yale, and John's Hopkins. All 8 speakers were given time to discuss their research on a variety of cancer types including melanoma, breast cancer, and B cell malignancies; with specific regards to advancements in immunotherapeutics. In addition to captivating speakers, over 120 abstracts were submitted for poster presentations to be evaluated for awards. Awards were granted based on the reviews of judges from UAB that volunteered to be a part of this occasion; these judges were comprised of a wide range of UAB faculty including graduate

professors, clinical physicians, and those specializing in public health. The awards granted evaluated excellence in cancer research, cancer prevention and control research, and distinguished faculty. The Cancer Biology Theme students all attended this event and presented a poster that was entered into the John R. Durant award for excellence in cancer research. Our theme members had an impressive sweep of 1st, 2nd, and 3rd place in this category for presenting their research on a conditional knock out of N-Myc and STAT3 interactor protein model in mammary development that enhances tumor metastatic abilities (**Hawley C. Pruitt**), the role of STRAP in stemness and chemoresistance by epigenetic regulation of Notch pathway in colorectal cancer cells (**Trung Vu**), and a glycosyltransferase, ST6Gal-I, in protecting tumor cells against hypoxia (**R. Brent Jones**), respectively. ●



by Ann Hanna



On October 15th, the Susan Komen Alabama chapter held its annual fundraiser “Race for the Cure” at Linn Park.

The morning started with a breakfast celebrating breast cancer survivors and their families. Ranging from 1 year to 36+ years, survivors assembled into groups based on their cancer-free years; a testimony to how far we’ve come in cancer research and treatment!

Prior to the actual race, participants toured numerous booths, many of which dedicated to raising awareness by educating women about the importance of early screenings, self-exams and how to perform them, and the steps to take if anomalies are detected. A group of our students volunteered to showcase their graduate projects at the

research booth, including Abhi Gangrade, Hawley Pruitt, and Ann Hanna, explaining to the public the kind of work we do and how we contribute to therapeutic advancement. It was a wonderful opportunity to interact with many resilient patients and families, something students rarely get access to working at the bench. Many familiar faces attended event including current and past Cancer Biology students as well as faculty members and postdocs.

Funds raised from the event will breast cancer screening, community educational outreach programs, and breast cancer research.

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Black Graduate Student Association at UAB

by *Jamelle Brown*

The mission of the **Black Graduate Student Association (BGSA) at UAB** is to support the successful matriculation and retention of graduate students of African descent, foster a sense of community, and promote professional development, mentoring, and social awareness. The BGSA provides a host of forums and programs to carry-out the above stated mission including community service events, social events, professional and career development forums, and mentoring programs.

Community Service

The BGSA participates in several community service events including Project Homeless Connect with Hands on Birmingham, MLK Day of Service, Birmingham Reads Day, and Into the Streets, a UAB-wide community service day.



Social Events



On the first Friday of each month, we have a 1st Friday Meet-Up, a day of social activities where members take some time and relax from the stresses that classes and lab can sometimes bring. Past 1st Friday Meet-Ups include karaoke, bowling, movie nights, game nights, laser tag, go-karts, and a holiday potluck.

Professional Development

We are currently reviving our Black Excellence Seminar Series where individuals in different career fields will talk about their careers, share their experiences and provide insight on navigating life after graduate school. Our Minority Achievement Gala is a formal event where we recognize and honor the achievements of minority faculty, students, and community leaders.

Mentoring

The BGSA also has its own mentoring program, named BLUEprint CONNECT, where we pair undergraduate students with graduate students, professional students, or working professionals to help them in their career development. We even give a scholarship to one of the mentees in the program at the end of the academic year.

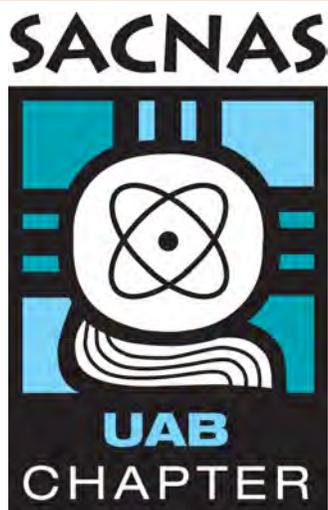


There is currently a campus-wide initiative to promote diversity, equity, and inclusion at UAB, and the BGSA has adopted this initiative as part of its vision. The BGSA has always worked very closely with the Graduate Biomedical Sciences (GBS) program. In fact, the BGSA's membership is comprised mostly of GBS students.



Although the mission of the BGSA includes advocacy for African-American students and other students of African descent, membership is open to ALL graduate students. We encourage participation from and a membership comprised of a diverse group of graduate students.

For more information or to discover additional programs the BGSA offers, you can contact us at thebgsa@uab.edu or visit our website at www.uab.edu/bgsa. ●



Society for the Advancement of Hispanics/Chicanos and Native Americans in Science

by Courtney Fernandez Petty

SACNAS, or Society for the Advancement of Hispanics/Chicanos and Native Americans in Science, is a national organization that strives to increase the number of Hispanics/Chicanos, Native Americans, and other underrepresented minorities in science in both the undergraduate and graduate level. Their number one mission is to promote excellence and diversity in science.

The SACNAS Chapter at UAB was founded in 2014. The chapter promotes diversity in the STEM fields by showcasing scientists from different backgrounds, giving students the opportunity to present their research, putting on professional development events, and encouraging students to attend the SACNAS National Conference. Their annual events include a salsa social, science outreach within the Birmingham community and schools, a conference preparation seminar, a special seminar

featuring a prestigious Hispanic scientist for Hispanic Heritage Month, and others. For its efforts in professional development, the Chapter won the 2015 SACNAS Outstanding Professional Development Role Model Award.

Having SACNAS on campus has not only increased awareness of underrepresented minorities in STEM, but also has allowed students to interact with senior scientists of similar background. It has opened students' eyes to the opportunities that are available to them, and has been a place of encouragement and support for students as they reach their full potential.

If you are interested in joining UAB's chapter please contact us at sacnasatwab@gmail.com or visit our website at www.uab.edu/sacnas. •

SACNAS and BGSA members reading to 3rd and 4th graders at South Hampton Elementary School



Former National Liaison, Stephanie Garcia, and Former President, Natasha Pacheco with the Chapter Role Model Award for Professional Development



Panel of graduate and professional Sacnistas: an engineer, medical students, dental students, a chemist, a neurobiologist, and a medical scientist



Our New Publications

- Schultz MJ, Holdbrooks AT, **Chakraborty A**, Grizzle WE, Landen CN, Buchsbaum DJ, Conner MG, Arend RC, Yoon KJ, Klug CA, Bullard DC, Kesterson RA, Oliver PG, O'Connor AK, Yoder BK, Bellis SL. The Tumor-Associated Glycosyltransferase ST6Gal-I Regulates Stem Cell Transcription Factors and Confers a Cancer Stem Cell Phenotype. *Cancer Res.* 2016 Jul 1;76(13):3978-88.
- **Cui J**, Placzek WJ. PTBP1 modulation of MCL1 expression regulates cellular apoptosis induced by antitubulin chemotherapeutics. *Cell Death Differ.* 2016 Oct;23(10):1681-90.
- **Goliwas KF**, Marshall LE, Ransaw EL, Berry JL, Frost AR. A recapitulative three-dimensional model of breast carcinoma requires perfusion for multi-week growth. *J Tissue Eng.* 2016 Jul 29.
- **Pruitt HC**, Devine DJ, Samant RS. Roles of N-Myc and STAT interactor in cancer: From initiation to dissemination. *Int J Cancer.* 2016 Aug 1;139(3):491-500. Review.
- **Tran AN**, Boyd NH, Walker K, Hjelmeland AB. NOS Expression and NO Function in Glioma and Implications for Patient Therapies. *Antioxid Redox Signal.* 2016 Aug 25. Review.
- Rachakonda G, **Vu T**, Jin L, Samanta D, Datta PK. Role of TGF- β -induced Claudin-4 expression through c-Jun signaling in non-small cell lung cancer. *Cell Signal.* 2016 Oct;28(10):1537-44.

Presentation

- **Tran AN**, Walker KD, Hocevar L, Harrison DG, Chen W, Hackney JR, Mobley J, Darley-Usmar V, Gillespie GY, Cooper SJ, Hjelmeland AB. A Biosynthetic Metabolic Pathway in Brain Tumor Stem Cells Controls Glioblastoma Growth. Poster presented at: 2016 Cancer Stem Cell Conference; 2016 Sep 20-23; Cleveland, OH.

New PhD Candidates

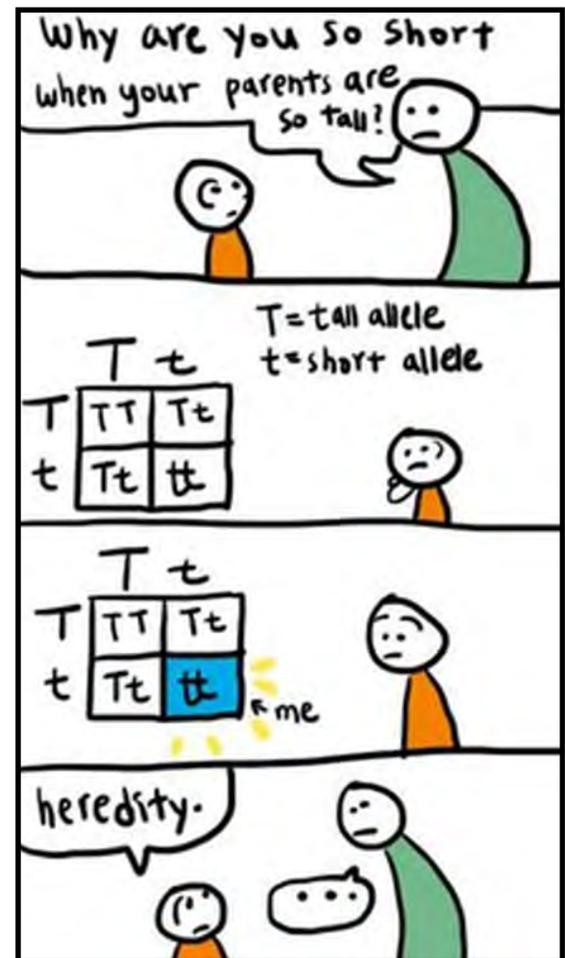
- Congratulations to **R. Brent Jones** for advancing to candidacy in November! Brent is the first member of the entering class of 2014 to pass his qualifying exam.

Awards and Honors

- **Hawley Pruitt**, **Trung Vu** and **Robert Brent Jones** won awards for their poster presentation at the UAB Comprehensive Cancer Center 18th annual research retreat .

#justphdthings

by Ann Hanna



Fun Fact:

CRISPR technology has become widely sought technique in recent years. Last month, a Chinese team injected CRISPR modified cells into a non-small cell lung cancer patient. While no details have been revealed yet, this approach has promising therapeutic potential, especially considering unique patient mutations.

Source: <http://www.nature.com/news/crispr-gene-editing-tested-in-a-person-for-the-first-time-1.20988>