

## ***Announcements***

**For Bioinformatics Core support**, please contact either Drs. [Galina Glazko, Ph.D.](#) (UAMS) or [Phil Williams](#) (UALR). The [Bioinformatics Core Support Request Form](#) can be found on the [INBRE website](#).

In the NIH Biomedical Beat Blog, Career Conversations: [Q&A](#), Dr. Osvaldo Gutierrez, an Organic Chemist in the Department of Chemistry and Biochemistry at the University of Maryland, College Park, shares his journey as a scientist and offers advice for students who want to pursue a scientific career.

Fellowship opportunities are available through NIH for students and postdocs from underrepresented populations. For more information, visit the [iCURE website](#).

NIH has a new #COVID [website](#).

The INBRE Student Summer Mentored Research Program has extended its application deadline to **Friday, February 12<sup>th</sup>**. Please share this information with your students. For more details, please visit our [website](#).

## ***Upcoming Meetings***

The IDeA National Resource for Quantitative Proteomics will hold their 2021 Workshops for faculty and students virtually this year. Targeted phase workshops will be held February 9-10 and February 16-17. The Discovery phase workshop will be held February 23-24. For more information, please visit their website: <http://idearesourceproteomics.org/>.

The NIH Office of Intramural Training and Education (OITE) offers many free online workshops and webinars for all levels of training. Below are a few links, but please be sure to take a look at the schedule for additional webinars that may be of interest:

**February 4, 2-4 p.m.** [Writing Personal Statements for Medical School](#)

**February 8, 4-5 p.m.** [Interviewing Blitz: Answering Strengths and Weakness Questions](#)

**February 8, 4-5 p.m.** [Industry Jobs Advice Q&A Session](#)

**March 8, 1:30-2:30 p.m.** [Resumes, CVs, and Cover Letter Q&A Session](#)

**March 22, 1-4 p.m.** [Grant Writing 101](#)

**March 25, 2-4 p.m.** [Reapplying to Medical School](#)

**The NIDA Summer Research Internship Program** is now accepting applications. [NIDA Summer Research Internship Program](#) supports undergraduate students with a focus on increasing underrepresented scholars interested in substance use and addiction research. Through this program, students age 18 years and older are introduced to the field of substance use and addiction research by participating in research internships with NIDA funded scientists at universities across the United States. To [apply](#) and view program information, see the [NIDA Summer Research Internship Program](#) website. **Applications will be accepted from January 1, 2021 – February 12, 2021.**

#### **Arkansas Academy of Science**

Tentatively scheduled for April 9-10, 2021

#### **Southeast Regional IDeA Conference**

Tentatively scheduled for November 12-14, 2021 in San Juan, Puerto Rico

#### **RI-INBRE Northeast Regional IDeA Virtual Conference**

August 16 - August 18, 2021

#### **NISBRE Conference**

Washington, DC, in 2022

## Message from the PI



As the PI and Director of the Arkansas INBRE, occasionally I am asked a question along the lines of “what part of the Arkansas INBRE has been the most impactful or that you are most proud of?” You might think it would be a difficult question for me to answer, but it really isn’t. It is the opportunity that the Arkansas INBRE provides for undergraduate students to participate in biomedical research. We know that students benefit from participating in research whether that research is done at either UAMS or UAF through the INBRE Summer Research Program or by working in a laboratory of one the many funded PUI faculty in the Arkansas INBRE Network. These benefits include a higher probability of graduating with a baccalaureate degree and greater success in gaining admission into graduate and professional schools.

Therefore, it should come as no surprise that my favorite section of the Arkansas INBRE newsletter is the Student Spotlight. I really enjoy finding out what previously Arkansas INBRE supported students are doing after they earn their baccalaureate degree. I hope that all of you feel the same way I do.

Please be sure to share with your students that the summer program application deadline has been extended to Friday, February 12<sup>th</sup>.

Finally, I would be remiss if I failed to remind everyone to reach out to us if you know of a former student who we should feature in a future newsletter.

Stay safe and keep in touch.

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## Faculty Spotlight



**Grant Wangila, PhD**  
*Chairperson/Professor*  
*Chemistry and Physics Department*  
*University of Arkansas at Pine Bluff*

I obtained a doctoral degree in Chemistry at one of the premier institutions in Canada, University of Alberta in Edmonton, Canada. I was under the direct mentorship of none other than Professor Robert B. Jordan and after securing an academic job, I had no alternative but to pursue research to fulfill the purpose of upward mobility in the world of academia. I strongly feel that curiosity in discovering, uncovering, exploring etc. new frontiers in any discipline is imperative in generating knowledge that propels the world of scientific development.

My research interests have shifted over time; I initially was focused on synthesis of antioxidant complexes that had the ability to alleviate side effects due to chemotherapy and rhabdomyolysis. The outcome of this research led to development of some complexes that prevent hair loss (Alopecia) caused by anticancer drugs. Also, some of the complexes when used in combination with market products prolonged the shelf life of the organ allografts. The results of the study showed that DNA fragmentation and cell death from cold storage can be slowed by the addition of ZnNAC to UWS.

Currently, I am interested in nano-materials and have received funding from NASA-EPSCoR and NSF. I am involved in not only synthesizing nano-materials of reduced graphene metal complexes but also characterization of these compounds using SEM, FTIR and voltammetry. The nanostructure materials assist photo-electrochemical water splitting for hydrogen and oxygen production. This process has limitation due to radical generation that inhibit water splitting, which are remediated by the addition of antioxidant complexes.

I routinely mentor students in my research laboratory as part of the department's Chemistry Research course. Most gratifying, is when I witness transformation of many of my students who are first generation of college graduates, especially the metamorphosis they undergo as they become academic scholars in respectable professionals i.e. research scientist, medical doctors, pharmacist etc.

I started working with the, then BRIN, program before it transformed to INBRE. The first proposal I submitted to INBRE was an Equipment Grant in 2003, followed by several summer and academic year fellowships. I have been nurtured by INBRE, starting from junior level in academic rank of Assistant Professor to senior full Professor. My research, career, and the students I have mentored at University of Arkansas at Pine Bluff will always be grateful to INBRE. I sincerely want to thank the INBRE staff, especially Dr. Lawrence Cornett (PI), Dr. Helen Benes (Co-PI retired) and Caroline Miller Robinson, for not only affording me the funding opportunities but also guiding me in my research journey by reviewing, editing, and redirecting my focus. From the bottom of my heart, you are highly appreciated.

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### ***What you might not know about Dr. Wangila...***

Dr. Wangila has been to 45-states in the USA, 5-provinces in Canada, 3-European countries and 3-African countries. Dr. Wangila and his family traveled to his home country of Kenya this past December. The trip was full of unexpected turns, fun excursions, upscale camping accommodations, and family visits. While in Kenya, Dr. Wangila made it a priority to talk to the locals and understand what everyday life is like for them. Dr. Wangila says this trip was transformative and provided him an opportunity to learn more about his motherland and people he once saw through a different lens.

## **Development Research Project Program**

*Jerry Ware, PhD, Program Director*



A hurdle many find in writing up their work is getting over the initial activation hump to get started. If this is an issue, here are a couple ways to try and get some momentum going. Many declare a writer's block and just cannot seem to get started. They know the results and would prefer to simply move on to another experiment. You must avoid this problem. If possible, put an hour block on your calendar, shut your door, and devote a straight 60 minutes without looking at email or opening your office door. Once you shut the door, imagine you're in a conversation and asked "What are you working on?" Most people enthusiastically start to talk about their work. Use this conversation enthusiasm to start writing an introduction. Assume you have been asked three questions that each become three introduction paragraphs for your work. First, "What is the significance of your

research?" Second, "What is known in the field about this topic?" Third, "What specific experiments are you doing and what gap in our understanding of the field will these experiments address. Now, prepare the figures for your work, write a narrative to describe the figures (Results), and your manuscript is more than half done. Everyone should recognize the old term "publish or perish" in describing the pressure to succeed in an academic career. Like it, or not, publications and records impact all aspects of academic life whether it be promotions or having a successful research proposal. In today's world we have an issue of predatory journals in which anyone with an internet connection can behave as a publishing house. So currently, we have three options when considering "where" to submit our work. 1. The traditional journal with a long track record and easily recognized by our peers. 2. The open access journals trying to compete with the big publisher monopoly on journal offerings. 3. And finally, the predatory or bad faith journals. We encourage you to avoid predatory journals offering to publish your work for a fee with no peer-review or editing services. If you are unsure you are dealing with a predatory journal, talk with your librarian or contact us. We can solicit advice from the UAMS librarians who are very astute on identifying the predatory journal red flags.

Try these approaches to a successful manuscript submission and publication in a respected journal.

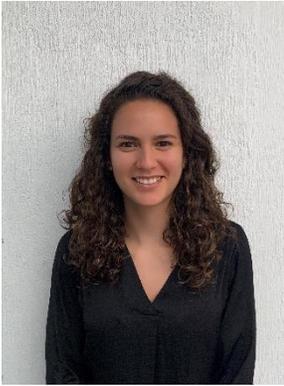
Stay positive – test negative!

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## Student Spotlight



### **Maria Alonzo**

*2014 Former INBRE Student*

My name is Maria Alonzo and I am from Guatemala. I received my undergraduate degree in biology at Lyon College. After my sophomore year, during the summer of 2014, I participated in the Arkansas INBRE program. I completed my research on “identifying molecular determinants of aphid resistance in plants” in Dr. Fiona Goggin’s lab at the University of Arkansas at Fayetteville. I chose that subject because I was interested in plant genetics and wanted to learn more about it.

Upon graduating college in 2016, I moved back to Guatemala. My career goals changed since the lifestyle and job opportunities in both countries are completely different, so I decided to look for opportunities in other areas. I have been working as a project assistant for almost three years in a company doing environmental impact assessments of different projects. While working there, I got a master’s degree in environmental management from EUDE Business School. Also, I got an internship as a community manager for the Wildlife Conservation Society (WCS) Mesoamerica and the Western Caribbean. WSC is a non-governmental organization headquartered at the Bronx Zoo in New York City, which aims to conserve the world’s largest wild places in 14 priority regions through science, conservation action, education, and by inspiring people to value nature. These two jobs had an impact on my career as I learned and saw the huge impact our actions as humans have on the environment and the biodiversity that is unknown.

Since the environmental subject is so broad, I started looking for something more specific I could specialize in and make an impact on based on the problems we have in my country. In 2019, I got a new job at a company that aims to find and works for an integrated water management in Guatemala City. Because water scarcity is more evident each day, we organize conferences on different topics related to water to raise awareness about its scarcity and seek initiatives that contribute to the city’s water security.

Water is such an important resource in our daily life and still millions of people do not have access to it. Guatemala is a country where only around 60% of the population has access to water and most of the water sources are contaminated. Not having access to potable water can result in many negative effects on people’s development and health.

Looking forward, I will seek a master’s degree in water management and sanitation for development or a related field in Europe beginning in the Fall or Spring of 2022.

### ***What you might not know about Maria...***

At the end of 2020, she and her brother started a men’s clothing line; Up Clo. With the help of some friends, Maria is looking into selling their product in the US. Check out their merchandise on her Instagram page:

<https://instagram.com/upclo.gt?igshid=1sf8jmvp1tbra>

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## Recent Publication

Abram, Kaleb; Udaondo, Zulema; Bleker, Carissa; Wanchai, Visanu; Wassenaar, Trudy M; Robeson 2nd, Michael S; **Ussery, David W.** *Mash-based analyses of Escherichia coli genomes reveal 14 distinct phylogroups.* Communications biology. 2021 Jan 26; 4 (1):117.

Wang, Xiaoting; Karki, Uddhab; Abeygunaratne, Hasara; UnnoldCofre, Carmela; **Xu, Jianfeng.** *Plant cell-secreted stem cell factor stimulates expansion and differentiation of hematopoietic stem cells.* Process biochemistry (Barking, London, England). 2021 Jan; 100: 39-48.

Safina, Ingrid; Alghazali, Karrer M; Childress, Luke; Griffin, Christopher; Hashoosh, Ahmed; Kannarpady, Ganesh; Watanabe, Fumiya; Bourdo, Shawn E; Dings, Ruud P M; Biris, Alexandru S; **Vang, Kieng Bao.** *Dendritic cell biocompatibility of ether-based urethane films.* Journal of applied toxicology: JAT. 2021 Jan 08.

Alnufaie, Rawan; Alsup, Nickolas; Kc, Hansa Raj; Newman, Matthew; Whitt, Jedidiah; Chambers, Steven Andrew; Gilmore, David; **Alam, Mohammad A.** *Design and synthesis of 4-[4-formyl-3-(2-naphthyl) pyrazol-1-yl]benzoic acid derivatives as potent growth inhibitors of drug-resistant Staphylococcus aureus.* The Journal of antibiotics. 2020 Dec; 73 (12): 818-827.

Ramirez, Aura M; Beenken, Karen E; **Byrum, Stephanie D; Tackett, Alan J;** Shaw, Lindsey N; Gimza, Brittney D; Smeltzer, Mark S. *SarA plays a predominant role in controlling the production of extracellular proteases in the diverse clinical isolates of Staphylococcus aureus LAC and UAMS-1.* Virulence. 2020 Dec; 11 (1): 1738-1762.

Sustich SJ, Afrose F, **Greathouse DV, Koeppe RE 2nd.** *Influence of interfacial tryptophan residues on an arginine-flanked transmembrane helix.* Biochim Biophys Acta Biomembr. 2020; 1862(2):183134. doi:10.1016/j.bbamem.2019.183134.

## #sharingnews

**Congratulations to Josh Sakon**, Professor in the Department of Chemistry and Biochemistry at the University of Arkansas, on being one out of 175 recipients of a National Academy of Inventors (NAI) Fellowship. NAI fellows are recognized as prolific academic inventors and “have demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and the welfare of society.” Dr. Sakon’s inventions are on osteoporosis, bone metastasis and alopecia. He has 10 U.S. patents and five foreign patents, nine of which have been licensed for commercialization. Dr. Sakon is invited to the induction ceremony for newly elected NAI Fellows June 7-9 in Tampa, Florida. [To read more about Dr. Sakon’s achievement.](#)

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