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PRAIRIE VIEW
A&M UNIVERSITY
The Office of Research, Innovation and Sponsored Programs

RESEARCH BRIEFS

Faculty Research Development Grant Provides Opportunities for Research

CONTRIBUTOR RAMASWAMY KRISHNAMOORTHI

The Office of Research, Invention, and Sponsored Programs (ORISP) strives to catalyze and support the creative and research efforts of faculty in all disciplines by providing seed grants. This year, ORISP has expanded and enhanced its Faculty Research Development Grant Program (FRDGP), formerly known as the Summer Research Mini-Grant program, with the creation of two types of grants, Type A and B. The Type A grant awards $ 90 K per year for two years, and the Type B grant $ 45 K for one year.

The revamped program should greatly benefit tenure-track and tenured faculty members in the early stages of their career. The Type A grant provides funds for a post-doctoral fellow, a graduate research assistant, project needs, and one month of summer salary for the Principal Investigator (PI). The Type B grant allows for the hiring of a couple of graduate or undergraduate students and a month of summer salary for the PI. The FRDGP directly complements the two student-oriented initiatives of ORISP that award graduate and undergraduate research assistantships.

A total of 39 faculty members applied for grants—20 for Type A and 19 for Type B. The Type A proposals were reviewed by external faculty members and the Type B proposals by PVAMU faculty members. Each proposal received at least two reviews and was discussed by members of the ORISP team. The reviews considered the following five factors and marked each proposal as Poor, Fair, Good, or Excellent under each category, identifying its strengths and weaknesses. Based on those ratings, each proposal was overall rated as Poor, Fair, Good, or Excellent by the reviewers. The ORISP team considered all the reviews and ranked the proposals by assigning a score of 1 to Poor, 2 to Fair, 3 to Good, and 4 to Excellent in the overall rating.

Those selected to receive the Faculty Research Development Grant Program will be notified and identified in an upcoming issue of Research Briefs newsletter.

ORISP is hopeful that the grants will spur the faculty members to submit successful proposals to external funding agencies for accomplishing their long-term research and educational goals.

The faculty and student-oriented research funding programs offered by ORISP buttress the strategic efforts of PVAMU to increase its research capacity.

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New Efforts to Expand Activities at HBCUs and MSIs

CONTRIBUTOR OLUSOLA EWULO AND KAREN B. COTTON

The Office of the Under Secretary of Defense for Research and Engineering (OUSD -R&E) chose Prairie View A&M University for its recent Regional Historically Black Colleges and Universities and Minority-Serving Institutions Technical Assistance Workshop. The Department of Defense program managers outlined multiple prospects for collaboration with students, faculty, and staff.

The day-long event consisted of a morning panel session, moderated by Patricia Huff, HBCU/MI Program Manager/ Technology Integration and Outreach- Army Reserve Office- Information Sciences Directorate. During the morning panel discussions, program managers from the Army, Navy, Air Force, and other defense agencies shared information on initiatives and opportunities for research funding in unique and cutting-edge topics of interest to DoD. Also during the morning discussions, a panel of HBCU/MSI principal investigators, moderated by PVAMU's Lijun Qian, shared their strategies for successful engagement with DoD. The focus of this panel was engaging DoD program managers for Science, Technology, Engineering, and Mathematics (STEM) success.

Following a networking luncheon, there were two sessions. The first, moderated by Evelyn Kent, DoD HBCU/MI Program Director at OUSD -R&E. The panels' focus was the expanding the involvement of HBCUs/ MSIs in DoD-wide opportunities in the fiscal year 2019. The final panel, moderated by Vallen L. Emery, Jr. laid the groundwork for the development of applications and proposals with comprehensive budgets. The afternoon also provided an opportunity for students to present poster presentations.

Advancing Forensic Science at PVAMU

CONTRIBUTOR DEIRDRE VADEN

The necessity for greater representation and advancement of minorities in the forensic science community is apparent from current events that emphasize the struggle for justice and equality in criminal justice and law enforcement. Since 2016, the Title III project, entitled "Enhancement of Biology Undergraduate Curriculum and Infrastructure to Establish an Undergraduate Forensic Science Certificate Program" has provided resources for undergraduate curriculum enhancement, faculty development, and forensic biology equipment. The successful outcomes of this Title III project were used to leverage additional external funding at Prairie View A&M University. An interdisciplinary team led by Dr. Deirdre Vaden was awarded a $149,982 grant from the National Science Foundation, entitled, "Catalyst Project: Biological Experiences Strengthen Talent through INterdisciplinary (BEST IN) Forensic and Investigative Genomics." Forensic science is the application of a broad spectrum of sciences and technologies to law enforcement. Forensic and investigative genomics, a rapidly evolving sub-discipline of forensic science, applies the principles of life sciences to law and has diverse applications in multiple areas. The catalyst project seeks to expand upon the Title III investments in order to create cross-discipline interactions that will develop into a unique and authentic interdisciplinary program producing students with broad and comprehensive knowledge of forensic science capable of entering the STEM workforce or entering into professional school. Since forensic and investigative genomics integrates multiple disciplines, the project will assemble an interdisciplinary team with diverse expertise; the team includes Dr. Shaye Lewis (agriculture), Dr. Nathan Mitchell (law and political science), Dr. Mark Tschaepe (ethics), Ms. Kimberley Gay (library science), Dr. Laurette Foster (mathematics) and Mr. Darrell Davis (forensic chemistry). The project seeks to grow the team to include chemistry, criminal justice, and other disciplines.

The catalyst project will expand advances in forensic science at PVAMU. The project supports the development, implementation, and study of evidence-based, innovative models and approaches for improving the preparation and success of HBCU undergraduate students so that they may pursue STEM graduate programs and/or careers. In the spring of 2019, the interdisciplinary team will apply for a new undergraduate certificate program. Offering the Forensic Science Certificate will strengthen the University's academic curriculum, support learning in core academic subjects and prepare graduates for a wide range of career opportunities (in crime laboratories, medical examiner offices, police departments, criminal defense and prosecution attorneys' offices, hospital, serology laboratories, clinical chemistry laboratories, pharmaceutical companies, high school science teachers etc.). The team will also develop innovative approaches to capture student interest, strengthen student engagement in learning and address ethical, legal, and social issues in forensic genomics. In the spring of 2019, specific courses will be enhanced with forensic and investigative genomics instructional and laboratory experiences. In Genetics (BIOL 2054) courses, students will analyze biodiversity on PVAMU's 1,440-acre main campus by DNA barcoding (using DNA to classify organisms). Students enrolled in a Research (BIOL 4061) course will trace their ancestry using traditional genealogy and genetic genealogy (DNA analysis for ancestry). Over 200 students will have the opportunity to use a popular direct-to-consumer (DTC) ancestral/kinship kit to trace their ancestry.

Office of Sponsored Programs Puts Customer Service First

CONTRIBUTOR OLUSOLA EWULO

Service to our research constituents is paramount to what we do in the Office of Sponsored Programs (OSP). Nestled within the Office of Research, Innovation and Sponsored Programs (ORISP), OSP is the centralized administrative office responsible for assisting research faculty/staff in proposal administration and submissions, and also for the financial management of awarded grants, contracts, and cooperative agreements. Listed below are some useful tips and suggestions that will assist you as you liaise with OSP:

1. Inform us as soon as possible once you have decided to pursue a particular funding opportunity. Give us a call to initiate a pre-proposal conversation. It will help us to establish a rapport with you and devote resources to your particular needs.
2. Complete the online **intent-to-submit form**. Once received, the appropriate proposal administrator will contact you with budget preparation assistance and other information needed to administer your proposal.
3. If your proposal is a limited submission, the link below will apprise you of our policies in choosing which proposal is accepted for submission: **www.pvamu.edu/research/office-of-sponsored-programs-osp/limited-submission-procedures/**
4. We ask that your final proposal be forwarded to the appropriate proposal administrator at least 2 weeks before the funding agency deadline. This timeframe will allow for internal review, approval routing, and submission. We recommend you allow additional time if feasible for you.
5. If your application is successful and we have received your notice of grant award from the agency, our contract negotiator will review for adequacy after which your award will be entered in Maestro, The Texas A&M University System's grants management program.
6. In Maestro, your new award will be tasked to a project administrator and an account/fund number established for the project.
7. If your award requires collaboration with other entities, OSP will issue the required sub-awards to those entities following established guidelines
8. Your assigned project administrator will administer your new project helping with financial reporting, regular monitoring of expenditure, applicable cost transfers, no-cost extensions, and ultimate close-out of the project. It is advantageous to maintain close contact with your project administrator as you continue to spend down your funds. Note that there is a shared-responsibilities between OSP and the department in the financial administration of your project.

CONTACT US should you have any questions. Remember in OSP, we put our customers first.

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Ethical Research for the World of Tomorrow

CONTRIBUTOR INDRIKA RANAWEERA AND CRYSTA MENDES

The 2018 Advancing Ethical Research Conference (AER18) sponsored by Public Responsibility in Medicine and Research (PRIM&R) brought together more than 2,300 professionals from public and private institutions, the federal government, industry, and academia. The conference started on November 14 with several intensive preconference programs followed by a three-day conference on November 15-17, 2018 in San Diego, California.

There was an interesting array of topics ranging from basics of Institutional Review Boards (IRB) to ethical research across borders. It proved to be an excellent experience for those who attended from Prairie View A&M University (PVAMU) with the support of the Office of Research, Innovation, and Sponsored Programs. The Office is committed to the ongoing professional training of faculty and staff. AER18 was a good platform to learn about timely topics and late-breaking issue through a series of keynote sessions, concurrent panels, and breakout sessions.

To ensure that PVAMU benefited from all of the information shared at the conference and continue the advancement of the institutional research through the quality human subject research, the attendees (Dr. Sesha Kethineni, Dr. Jennifer Erdely and Dr. Akilah Francique from the IRB committee and Indrika Ranaweera from Research Compliance) each attended different sessions. The PVAMU IRB chair, Dr. Kethineni, shared her interest in learning more about ways to implement the revised Common Rule, as the timeframe to comprehend the new rule and update the institutional policies and procedures to reflect the changes is coming to an end. The Common Rule is scheduled to go into effect January 21, 2019. Through its focus on the Revised Common Rule resources and programs, PRIM&R provided the attendees with comprehensive education and resources to help understand the new provisions and what they mean for the institutional human research protections program.

AER18 invigorated PVAMU attendees and better equipped them to help the PVAMU research program become stronger and more effective. The knowledge gained at AER18 can be applied to determine the implications of the revised regulations for IRB program's operations, and also to assess changes needed in administrative processes and procedures to promote compliance with the new federal policy. The information shared will be used for continuing education of the committee members.

If you are interested, the 2019 Advancing Ethical Research (AER) Conference is on the way in Boston, MA. For more information, please visit **www.primr.org/conferences**.

Animal Science in "Charm City"

CONTRIBUTOR ALPHINA HO

The American Association for Laboratory Animal Science (AALAS) has held an annual National Meeting since 1950. For 2018, it was held in Baltimore, Maryland from October 28 to November 1. During this time, members of the research animal community came together for a program of workshops, lectures, poster sessions, and exhibits covering topics relevant to its entire membership. Attendees included representatives from academia, research institutions, government organizations, and commercial companies. The AALAS National Meeting claims to be the "largest gathering in the world of professionals concerned with the production, care, and use of laboratory and research animals."

Prairie View A&M University was represented by our Associate Vice President for Research, Dr. Awadh Binhazim, and our Attending Veterinarian, Dr. Alphina Ho Watson. Among the highlights of the meeting were: a lecture by US Fish & Wildlife veterinarian Dr. Cindy Driscoll, who talked about her decades-long career working in the US government as a marine and exotic animal veterinarian, starting at a time when women did not become vets, and those fields did not exist. Attendees had the opportunity to reconnect with colleagues at other institutions, like Dr. David Brammer—PV's consultant

AV in 2017, and Dr. Mildred Randolph—AV at UAMS in Little Rock, who conducted training at PVAMU earlier in the year. A key component to attending the conference was the opportunities to network with companies and vendors to facilitate refurbishing and re-commissioning the PVAMU vivarium, and exploring more streamlined ways for investigators to manage and submit Animal Use Protocols (AUPs), and manage their animal use and inventory. Also, the National Aquarium was open to attendees one night, Oriole Park at Camden Yards baseball park, was across the street, and Edgar Allen Poe's grave was a timely visit to round out the overall experience in what locals call "Charm City."

Newton Appointed to American Goat Federation Board

CONTRIBUTOR AWADH BINHAZIM

Dr. Gary R. Newton, Research Scientist Leader and Director of the International Goat Research Center, has been appointed to the Board of Directors of the American Goat Federation (AGF). The AGF works to unify, improve and advance the American goat industry to assist producers in achieving maximum success. It represents the interests of more than 150 organizations and thousands of producers engaged in the sustainable production and marketing of goat milk, meat, fiber, breeding stock, and grazing services across the United States.

The American Dairy Goat Association, American Boer Goat Association, and the Texas Sheep and Goat Raisers are all members of AGF. Dr. Newton hopes to work with the AGF to promote sound public policy, enhance the production and marketing of goat products, and promote research beneficial to member organizations and all producers.

FOR MORE INFORMATION please contact Gary Newton at ***grnewton@pvamu.edu***.

National Security Agency Visits PVAMU

CONTRIBUTOR AWADH BINHAZIM

Today, more than ever, public/private partnerships are critical to protecting our nation and our allies from threats both physical and in cyberspace. Through our partnerships with academia, we encourage and foster the need for more STEM and CYBER professionals entering the workforce as well as supporting ongoing research to provide first-rate solutions for our nation's leaders. We work with academia on some of our toughest challenges cultivating mutually trusted, valued and cooperative partnerships.

The National Security Agency also values diversity. Prairie View A&M University's established reputation for producing excellent engineers, computer scientists, and graduates from other STEM disciplines with diverse backgrounds and experiences makes it a natural choice for exploring research, internships, and recruitment opportunities. This initial outreach to foster a mutually beneficial relationship successfully identified several key areas of joint interest particularly initiatives that relate to cybersecurity, data science, and increasing minority representation in the STEM workforce.

NSA in Texas looks forward to expanding its engagement with PVAMU and participation in the upcoming 14-5 May 2019 Big Data Workshop hosted by the Center of Excellence In Research and Education for Big Military Data Intelligence (CREDIT).

ORISP at Your Service!

The Office of Research, Innovation, and Sponsored Programs welcomes requests from Colleges and Departments to provide seminars and workshops on any aspect of proposal preparation and grant management. Sample topics include proposal preparation, funding opportunities, research compliance, export control, grant management, purchasing and hiring guidelines, contracts, sub-contracts, project close-outs, and more. Please contact us at X-1570 or send an email request to ORISP@pvamu.edu.

Center for Computational Systems Biology

Q & A Session with Dr. Seungchan Kim

WRITTEN BY RAMASWAMY KRISHNAMOORTHI

Dr. Seungchan Kim is the Chief Scientist of the Chancellor's Research Initiative (CRI)-supported Center for Computational Systems Biology (CCSB). Dr. Lijun Qian, AT&T Endowed Professor of Electrical and Computer Engineering and the Principal Investigator of CCSB, convinced Kim to join PVAMU in 2016. He leads cutting-edge research endeavors in bioinformatics, computational biology, and integrated cancer genomics. Kim is an internationally renowned scientist with more than 70 peer-reviewed research publications which have received more than 5000 citations.

Before his current appointment, Kim, after earning a Ph.D. in Electrical Engineering from Texas A&M University, embarked on a multi-faceted research career that included stints as a faculty member at Arizona State University and a founding member and Head of Biocomputing Unit of Translational Genomic Research Institute (TGen). Since taking the lead at CCSB, Kim has attracted a host of scientists to work on delineating molecular mechanisms of diseases, such as cancer and Parkinsons's disease, employing state-of-the-art equipment and computational approaches. ORISP recently met with Kim and his group to learn more about CCSB.

Q: What brings you to PVAMU?

A: I came to PVAMU because I saw great potential to build a center for solving complex biological and biomedical problems, as generous funding was available from both the Chancellor's Research Initiative and the university. I was intrigued by the fact that the Center was to be located in the College of Engineering. At the same time, I saw an opportunity to leverage engineering and computational expertise to find solutions.

Q: Tell us a little bit more about the Center.

A: Our center employs a "systems" approach to study complex biological and biomedical problems, aiming for a holistic view of problems, not individual components. We combine computational modeling and analysis with experimental biology, employing techniques, such as machine learning and Big Data analytics. To name a few projects, we are currently studying cancer Alzheimer's and Parkinson's diseases.

Q: Can you tell us about your team at the Center?

A: Our team consists of scientists with different, but complementary, areas of research expertise: Dr. Dumitru Iacobas with more than a decade of research experience in computational systems biology and bioinformatics at New York Medical College. Dr. Anna Joy, is a cell biologist specializing in brain tumor from Barrow Neurological Institute. Dr. Lijun Qian, is a machine learning and big data expert. Dr. Xiangfang Li, is a computational biologist with expertise in drug-response-modeling, and Dr. Xishuang Dong, a machine learning and artificial intelligence expert.

Q: What are some unique capabilities of the Center?

A: Our Center is located the College of Engineering, unlike most computational biology centers which are part of medical centers. That traditional arrangement gives the benefit of easy access to biomedical scientists and biomedical data for analysis. In our case, for the projects we focus on, we have more and ready access to computational and engineering expertise. That gives us unique strength and capability to computational and experimental biology studies that we do in our personalized genomics labs.

Q: What are some of the short-range and long-range goals of the Center?

A: Our center is still in early-stage development. We are actively recruiting more scientists and students for projects. We are also expanding our collaboration networks both within Texas and across the nation. Our current collaboration includes Translational Genomics Research Institute, Baylor Scotts and White Research Institute, Johns Hopkins University, University of Pittsburgh Medical Center, New York Medical College, Albert Einstein College of Medicine, and M.D. Anderson Cancer Center.

Our long-range goals are: 1) to isolate and sequence single cells that are involved in disease development; 2) to manipulate gene expressions selectively to destroy cancer cells without affecting the normal ones; 3) to combine experimental and computational studies for characterizing regulatory networks involved in disease processes.

Apart from these research goals, we are very much interested in developing a curriculum to educate future computational biologists. The National Science Foundation (NSF) is supporting our project in this area.

Q: What are some unique resources the Center has available?

A: We already have a high throughput DNA sequencer installed, and are actively looking into single-cell sequencing technology to help our research., as mentioned above. We will also continue to use our Agilent Microarray systems to analyze the remodeling of functional genomic fabrics in disease and their recovery following various treatments.

We also have access to the Deep Learning Lab that Dr. Lijun Qian heads. This lab has state-of-the-art high-performance computing equipment.

Q: How do you see the Center helping other groups across the campus?

A: We readily help and collaborate with faculty members across the campus. We are currently collaborating with Dr. Yolander Youngblood in the Department of Biology for NSF-funded bioinformatics studies of weedicide-resistance in Amaranthus, and with Dr. Suxia Cui on improving network on campus for research and education in Agriculture, Science, and Engineering, also funded by NSF.

We are exploring other collaborative research opportunities with Cooperative Agriculture Research Center and International Goat Research Center in the College of Agriculture and Human Sciences, among others.

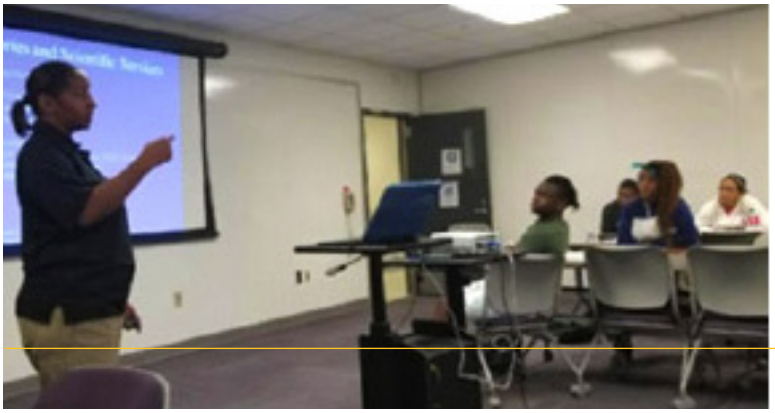
Q: Are students able to get hands-on research experience in the Center?

A: Yes, we currently have 3 PVAMU undergraduate students working on ongoing studies with center scientists. Sabrina Noe is a Chemical Engineering undergraduate working with Dr. Joy on the regulation of a cancer-associated gene; Nneka Ede is a Computer Science major, working with Dr. Iacobas for developing a bioinformatics software package; Langston Whittington is a freshman in Electrical and Computer Engineering working with Dr. Dong on machine learning and big data analytics. We welcome both graduate and undergraduate students to gain research experience at the Center for Computational Systems Biology.

PVAMU Summer 2018 Forensic Science Workshop

The future forensic scientists of PVAMU.

Students learn how to read and interpret data from an instrument. Forensic scientist from U.S. Customs Laboratory explains her role in the laboratory.



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