Each year the LBRN program has an annual meeting in which program participants, committee members and administrators meet to review individual research accomplishments and to discuss the overall program activity. Summer research faculty and graduate and undergraduate students are encouraged to present their LBRN sponsored research, and talks are scheduled to highlight sponsored research projects from partnered campuses across the state.

Oral Presenters: INBRE Full Project PIs, Pilot Project PIs, Summer Graduate Students, and invited guests.
Poster Sessions: Pilot, Translational, and Startup Project PIs, 2019 LBRN Summer Faculty, and Graduate Students are required to submit an abstract to participate in the poster session. LBRN Undergraduate Summer students are also invited to participate. Poster abstract submission form will be sent after your registration.

This year's meeting is being held on January 17-18th in Baton Rouge, Louisiana at the LSU Student Union in the Ballroom and Theater.
Address: LSU Student Union, 310 LSU Student Union, Baton Rouge, LA 70803

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**XLerator Network Request for Applications (RFA) for IDEAS-TO-PRODUCTS (I2P)**

The National Institute of General Medical Sciences (NIGMS) funded creation of Regional Technology Transfer Hubs (Hubs) for IDeA States in 2018 to accelerate the translation of biomedical innovations into commercial products that improve patient care and enhance health. In the Southeast IDeA States Region, XLerateHealth (the SBC on the grant) in collaboration with a consortium of 24 academic institutions across all 6 Southeastern IDeA states and Puerto Rico are working to create one of four hubs - the Southeast “XLerator Network”. In 2019, NIGMS has provided funding to develop a program to specifically support pilot projects that would help advance innovations by quickly and clearly demonstrating whether a technology or product is worthy of advancing through the commercialization process. Many of these projects are anticipated to become future candidates for NIH SBIR/STTR funding.

I2P (“Ideas to Products”) is the name of the program for the Southeast XLerator Network Hub. The I2P program will administer $200,000 for 1 year to support approximately 4-7 product-development projects, with individual awards generally ranging between $25K and $40K.

Click here to see the full RFA, and come back to our website during the submission period (November 11 through November 20) to submit your Pre-application.

- [TechTransfer_Form_NIGMS](#)
- [Forms_NIGMS](#)
- [Abstract_Form_NIGMS](#)
• Xavier University of Louisiana Awarded Second Renewal of NIH RCMI Program

**2U54 MD007595-11** (PIs: G Wang, G D'Amour) 4/1/19 – 12/31/23

NIH-NIMHD “RCMI Cancer Research Center at Xavier University” $15,943,123

This program continues the development of a cancer research center at Xavier University of Louisiana that focuses on cancer health disparities. The program includes 3 research projects, a Research Infrastructure Core with five components, a Community Outreach Core and Investigator Development Core that will carry out comprehensive mentoring activities as well as support annual startup/pilot awards.

To sustain Xavier’s overall research momentum, enhance research capacity, and advance to the next level of excellence in biomedical research on minority health and health disparities, the RCMI Cancer Research Center will implement program activities to support early stage, underrepresented investigators, maintain core facilities to support Xavier researchers at all levels of career development, and to promote and sustain long-lasting, bidirectional partnerships between Xavier and local communities to address cancer health disparities. The proposed RCMI Center will consist of three major research projects in two areas: basic biomedical research and behavioral research, and 4 Cores: the Administrative Core, the Investigator Development Core, the Research Infrastructure Core, and the Community Engagement Core.

These programs will be implemented to achieve the following specific aims: **Aim 1.** Enhance Xavier’s research capacity for basic biomedical and behavioral research. **Aim 2.** Enable Xavier investigators to become more competitive in obtaining external funding. **Aim 3.** Promote career enhancement of Xavier’s new and early stage investigators through a pilot project fund and by initiating a research/grantsmanship “pipeline” supporting new faculty for five years to obtain
extramural funding. **Aim 4.** Enhance the quality of all scientific inquiry and promote research on minority health and health disparities by semi-annual symposiums and workshops on the quality of minority health and health disparities research each year to offer training in good scientific practices, appropriate statistical usage, and responsible laboratory practices for researchers at all levels. **Aim 5.** Establish sustainable relationships with community-based organizations that will partner with Xavier researchers.

- **New Publications by Xavier LBRN Investigators**

  - Subing Cao, Tianfang Ma, Nathan Ungerleider, Claire Roberts, Margaret Kobelski, Lianjin Jin, Monica Concha, Xia Wang, Melody Baddoo, Ladan Fazli, Eva Corey, Elisa Ledet, Rubin Zhang, Jonathan L. Silberstein, Wensheng Zhang, Kun Zhang, Oliver Sartor, Xuesen Dong, Erik K. Flemington, and Yan Dong. *Circular RNAs add diversity to androgen receptor isoform repertoire in castration-resistant prostate cancer, oncogene*, 13 August 2019, Aug 13, 2019, NA. Journal. (PMID 31409897 and PMCID 31409897).


  - Sruti Chandra, Hoang Michael Nguyen, Kylar Wiltz, Nicholas Hall, Feryn Harris, Srikanta Dash, Tarun Mandal and Anup Kundu* (Corresponding author). Aptamer-functionalized hybrid nanoparticles to enhance the delivery of doxorubicin into breast cancer cells by silencing P-glycoprotein. (submitted).

  - Chowdhury N, Olverson G, Hall N, Chaudhry S, Dash S, Mandal T, *Kundu A* (Corresponding author),...
- **New Funding Received by Xavier LBRN Investigators**

  - 2U54 MD007595-11 (PI: G Wang; Project #2: Zhang) 4/1/019 – 12/31/24  20% NIH-NIMHD “RCMI Cancer Research Center at Xavier University” $15,943,123 Research Project #3 “A Data-Driven Pan-Cancer Study of Biological Bases of Cancer Health Disparities” (PI: K Zhang) $1,420,000

  - NIH SC3. **Rami Al-Horani** (Role: Principal Investigator).
  Title: Inhibitors of the Intrinsic Pathway of Coagulation as New Anticoagulants. ($300,000).

- **New U.S. Patent Application by Xavier LBRN Investigator**

  - No. 62/925,395 - Filed: 24 October 2019
  Title: Protein Kinase Inhibitors and use thereof for Treatment of Neurodegenerative Diseases
  First Inventor: **Jayalakshmi Sridhar**, Reference: 2920571-016000

- **Lab Update: Dr. Cecily DeFreece, LBRN funded 2015-18**

  In the laboratory we are continuing our study of the LINE-1 endonuclease protein. We are currently characterizing the best conditions for assays that monitor LINE-1 endonuclease cleavage activity. Previously published reports characterizing LINE-1 endonuclease reported using buffers in a range of pH values. Over the summer, two students Ms. Taylor Lonzo, New Orleans Charter Science and Math High School, and Ms. Jerrica Harris, Xavier University of Louisiana, demonstrated that the pH of 7.25 resulted in the most robust LINE-1 endonuclease activity. As a result, we are continuing the effort to identify optimal buffer conditions and work to find the affinity of LINE-1 for various substrates. This work is required to more efficiently identify inhibitors of the LINE-1 endonuclease. Recently, in collaboration with Tulane University, we have received a library of novel small molecules to test for inhibition of the LINE-1 endonuclease. We will begin testing the inhibitors once our characterization studies are done.

**Poster Presentations:**


- **Lab Update: Dr. RA Al-Horani, LBRN funded 2017-2020**

Venous thromboembolism (VTE) remains a major public health crisis. VTE is the third most common cardiovascular disease and annually affects about 1 million people in the US. VTE is responsible for more than 100,000 annual deaths in the US. Anticoagulants are the mainstay for the prevention and/or treatment of VTE. However, current anticoagulants are plagued with a number of drawbacks including the life-threatening risk of internal bleeding which limits their safe
use in a wide range of patients. Thus, new approaches to safely prevent and/or treat VTE are highly clinically significant. Factor XIIIa (FXIIIa) is a transglutaminase procoagulant that is different from all other physiological procoagulants which are serine proteases. This unique biochemical aspect of FXIIIa has been under investigation in the context of VTE mechanism. Venous thrombi from FXIII-deficient mice were found to be significantly smaller in size. Furthermore, various reports indicated that specific FXIIIa polymorphism provides a moderate protection against VTE and that heterozygous FXIII-deficient mice do not show signs of excessive bleeding. Not only that but in vitro experiments also revealed that treating normal human blood with a transglutaminase active site inhibitor dose-dependently increases RBC extrusion from contracting clots and reduces clot size. Therefore, FXIIIa may serve as a potential therapeutic target to develop a new effective treatment for VTE that does not significantly increase the bleeding risk. In this project, we exploit a multidisciplinary approach to establish the principles of effective and selective inhibition of FXIIIa by sulfonated GAG mimetics. The long-term goal of research in this area is to develop potent and specific inhibitors of FXIIIa so as to 1) enhance our understanding of FXIIIa contribution to the coagulation physiology and pathology and 2) investigate an alternative approach to modulate FXIIIa through allostery so as to pave the way to a novel and transforming potent and safe anticoagulant therapy.

**Poster Presentations:**

3. “Factor XIIIa Inhibition by Arylsulfonates as Novel Avenue to New Anticoagulants” RA Al-Horani, M Mohammad, M Mottamal and DK Afosah (2019) 17th Louisiana Biomedical Research Network Annual Meeting, Baton Rouge, Louisiana, USA
6. “Inhibition of Coagulation Factor XIIIa by Glycosaminoglycan Mimetics” RA Al-Horani, M Mottamal and DK Afosah (2018) 16th Louisiana Biomedical Research Network Annual Meeting, Shreveport, Louisiana, USA
7. “Sulfated Inositol-Based Glycosaminoglycan Mimetics Are Homogeneous, Potent, Selective, and Allosteric Inhibitors of Factor Xla” RA Al-Horani and UR Desai (2017) American Heart Association Scientific Sessions, Anaheim, California, USA
8. “Sulfonated Molecules Are Novel Factor XIIIa Inhibitors” RA Al-Horani, M Mottamal and DK Afosah (2017) Research Centers in Minority Institutions Translation Science Conference, Washington DC, USA

GeneLab (School of Veterinary Medicine - Louisiana State University) is a multi-faceted core laboratory directed by the Division of BIOMMED in the School of Veterinary Medicine at Louisiana State University. GeneLab engages in specific research and training projects, which require expertise in Next-Generation Sequencing, traditional DNA sequencing, gene cloning, PCR, gene expression and other molecular methods. The goal of GeneLab is to facilitate the utilization of the state-of-the-art technologies in genomics research by LSU faculty and researchers nationwide at a competitive price and in a timely fashion.

The primary focus of GeneLab is its portfolio of sequencing capabilities. Currently, two Next Generation Sequencing instruments, the Illumina NextSeq, the Illumina MiSeq and 10X Genomics Chromium Controller along with bioinformatics support for NGS data are provided to the research community and offering will be extended rapidly as NGS and other emerging sequencing technologies are evolving.
**Illumina NextSeq**

The Illumina NextSeq System is a desktop sequencer with power and flexibility to carry out applications such as whole genome sequencing, exome sequencing, whole transcriptome sequencing, mRNA-Seq, and others. In one run it can sequence a full human genome at 30x coverage. Users can choose between high output or mid output flow cell configurations. At high output, up to 800 million paired end reads can be generated (at 150 bp read length) to produce up to 120 Gb of data in 29 hours. The Illumina sequencing systems utilize a well-established sequencing by synthesis (SBS) method and patented cluster generation technology in which fluorescently labeled nucleotide bases are detected as they are incorporated into DNA template strands. All four reversible terminator-bound dNTPs are present in each sequencing cycle.

**Illumina MiSeq**

Cluster generation, sequencing, and analysis are all done on a single instrument. The sequencing process takes place on a flow cell with 1 channel. Multiple samples can be run at once by using indices for each sample. 2x300bp reads are supported on the MiSeq and takes ~3 days to run. With v.3 kits the MiSeq can produce >25 million reads or 15GB per run. With v.2 kits the MiSeq can produce >15 million reads or 7.5 GB per run with standard flow cells. There is also the option of using micro and nano flow cells which produce up to 4 million and 1 million reads per run (1.2Gb & 500Mb). Actual output can vary depending on cluster density.
10X Genomics Chromium Controller

Go beyond traditional gene expression analysis to characterize cell populations, cell types, cell states, and more on a cell-by-cell basis. From assessing tumor heterogeneity and stem cell composition, to dissecting neuronal populations—the technological advancements provided by the Chromium Single Cell Gene Expression Solution allow the creation of high complexity libraries from single cells to maximize insight from any sample type.
Services and collaboration can be delivered through the LBRN cores.

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**Fall 2019 NIH Regional Seminar on Program Funding and Grants Administration**

Nov. 6-8 in Phoenix, Arizona.

The NIH Regional Seminar serves the NIH mission of providing education and training for the next generation of biomedical and behavioral scientists. This seminar is intended to:
Demystify the application and review process
Clarify federal regulations and policies
Highlight current areas of special interest or concern

Who Should Attend? The seminar and optional workshops are appropriate for those who are new to working with the NIH grants process – administrators, early stage investigators, researchers, graduate students, etc. For those with more experience, the seminar offers a few more advanced sessions, updates on policies and processes direct from NIH staff, as well as valuable presentation resources to share with your institution.

Who are the Presenters? The NIH Regional Seminar involves approximately 65 NIH and HHS staff who are brought to a central location in order to educate, share, and hear your questions over the course of two days, plus the pre-seminar workshops. (Faculty page with pictures and bios will be posted this spring, so keep watching this website!)

This seminar is your opportunity to make direct contact with NIH policy officials, grants management, program and review staff, and representatives from the HHS Office for Human Research Protections (OHRP), HHS Office of the Inspector General (OIG), and others. In addition, take advantage of discussions involving more than 600 fellow attendees from around the world.

In addition to learning more about the NIH grants processes and policies through the optional workshops and 2-day sessions, there are opportunities throughout the seminar to Meet the Experts 1:1. These 15 minutes chats are a great way to get more specific questions answered by NIH & HHS experts. You’ll have the opportunity to sign up in advance or on-site to speak with the expert(s) of your choice participating in the seminar.

What are some of the topics? Here’s a quick overview of some of the topics:

- Budget Basics for Administrators and Investigators
- Career Development Awards
- Clinical Trials
- Compliance (Case Studies)
- Current Issues at NIH
- Diversity in the Extramural Research Workplace
- electronic Research Administration (eRA)
- Financial Conflict of Interest
- Fundamentals of the NIH Grants Process
- Grant Writing for Success
- Human Research Protections
- Loan Repayment Program
- Office of Laboratory Animal Welfare (OLAW)
- Peer Review Process
- Preventing & Detecting Fraud
- Public Access
- SciENcv
- R&D Contracts
- Research Integrity
- Rigor & Reproducibility
- Training/Fellowships
- SBIR/STTR Program
- ….and that’s not all!
Can I go ahead and make my hotel reservations now? Yes! See our [Hotel/Travel](#) page for all the details. The room block is for a limited time and rooms traditionally sell out before the date for this seminar.

For inquiries regarding the seminar, email [NIHRegionalSeminars@mail.nih.gov](mailto:NIHRegionalSeminars@mail.nih.gov).

Listserv information is available on the [NIH Regional Seminar Webpage](#).

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**CFA for Short Term Core Projects**

Molecular Cell Biology Research Resources Core ([MCBRC](#)) and Bioinformatics, Biostatistics, and Computational Biology Core ([BBCC](#)) are calling for proposals to carry out short term projects in collaboration with the Cores. All LBRN researchers can submit a proposal for a defined project that can be carried out in collaboration with the Core facilities listed in the attached Call for Proposals (CFP) on a competitive basis. Each selected project will be allocated $1,500 to fully or partially offset Core expenses. More details can be found in the attached CFP.

*More details can be found in the attached CFP.*
The BBC Core provides introductory educational lecture series on informatics topics that are recorded and streamed. Prior offerings that are available for on demand streaming include:

- An Introduction to Computers and Informatics in the Health Sciences
  
  http://metagenomics.lsuhsc.edu/lectures/introinformatics/

- An Introduction to Microbial Community Sequencing and Analysis
  
  http://metagenomics.lsuhsc.edu/lectures/intromicrobiota/

On demand streaming links are available by each lecture along with downloadable lecture slides.
To support the LBRN / BBC Core community on LONI HPC systems, we have renewed our high-performance computing allocation for 2019/2020.

This can be utilized in lieu of individual investigators having to apply for and acquire their own allocations to access the HPC resources. If any of your campus members need access to high performance computing, please have them interface with Dr. Nayong Kim.
Delving Further into the Funding Gap Between White and Black Researchers

As is now well known, black scientists are less successful than their white counterparts in obtaining support from NIH R01 awards as designated Principal Investigators (PIs) (see here and here). Though recent NIH efforts are showing promise to enhance diversity in the biomedical workforce (see this post), much work is still needed to address the funding gap.

In a paper recently published in Science Advances, we delved into the underlying factors associated with this funding gap. We identified three decision points where disparate outcomes arose between white and black researchers: 1) the decision to bring applications to discussion during peer review study section meetings; 2) impact score assignments for those applications brought to discussion; and (3) a previously unstudied factor, topic choice – that is what topic the investigators chose to study.

We analyzed 157,549 R01 applications, both new and renewals, from fiscal years 2011-2015. We confirmed previous findings that black researchers submit fewer applications as PIs than white researchers. Applications with black scientists as PIs were brought to discussion in peer review only 77% as frequently as applications from white researcher PI’s (Figure 1).
When applications from black researchers were discussed in study section, they received worse impact scores— 38.4 + 13.4 vs 35.2 + 12.6. Combining lower submission rates, lower discussion rates, and worse impact, black scientists receive R01 funding only half as often as their white peers (Figure 1).

We found a number of differences in the characteristics of applications according to the race of the designated PI. Black scientists were more likely to propose research involving human subjects and less likely to propose work involving animal models.

We next used an informatics method called “word2vec” to bin the 157,549 applications into 150 topic clusters, which roughly aligns with the number of standing study sections at NIH. We can describe these clusters by word chains like “retina photoreceptor retinal cone MeSH_Photoreceptor_Cells_Vertebrate rod photoreceptor cells retinal degeneration” or “practice provider clinician care education evidence-based healthcare recommendation medical psychosocial.” Figure 2 shows word clouds associated with the topic clusters with the highest number of applications from black PIs (panel A) and with clusters in which there were no applications from black PIs (panel B). Note that the words in panels A and B are clearly qualitatively different.

A closer look at Figure 2 shows that black applicants were more likely to be associated with topics like health disparities, disease prevention and intervention, socioeconomic factors, healthcare,
lifestyle, psychosocial, adolescent, and risk (panels A and C). Generally speaking, applications with these terms were less likely to be funded than topics linked like neuron, corneal, cell, and iron (panel B).

Figure 2

...Continue reading...

• New NIH Resource to Analyze Biomedical Research Citations: The Open Citation Collection

Citations from scientific articles are more than lines on a page. They can, when reading between those lines, shed some light on the development of scientific thought and on the progress of biomedical technology. We’ve previously posted some examples in blogs here, here, and here. But to better see the light, we all would benefit from more comprehensive data and easier access
to them.

My colleagues within the NIH Office of Portfolio Analysis sought to answer this call. Drs. Ian Hutchins and George Santangelo embarked on a hefty bibliometric endeavor over the past several years to curate biomedical citation data. They aggregated over 420 million citation links from sources like Medline, PubMed Central, Entrez, CrossRef, and other unrestricted, open-access datasets. With this information in hand, we can now take a better glimpse into relationships between basic and applied research, into how a researchers’ works are cited, and into ways to make large-scale analyses of citation metrics easier and free.

As described in their recent PLOS Biology essay, the resulting resource, called the NIH Open Citation Collection (OCC), is now freely available and ready for the biomedical and behavioral research communities to use. You can access, visualize, and bulk download OCC data as part of the NIH’s webtool called iCite (Figure 1). iCite allows users to access bibliometric tools, look at productivity of research, and see how often references are cited.

![iCite](image)

**Figure 1**

...Continue reading...

- Extension Policy for K99/R00 Eligibility

NIH recognizes that a lot can happen to interrupt the 4-year K99 eligibility window. Since one of the most popular reasons for extension requests involve childbirth, NIH will approve an extension of one year for childbirth, consistent with the NIH Extension Policy for Early Stage Investigator Status (ESI), effective immediately. Men, those adopting children, and same-sex partners of individuals
giving birth can also apply for an extension.

- **Are Letters of Intent Required?**

  No, letters of intent are not required. Submission of a letter of intent is not binding and the letter is not part of the application review.

  Sometimes a letter of intent is requested by the funding opportunity announcement (FOA) as a way for NIH staff to begin planning for the review of your application. We encourage you to submit the letter of intent. However, NIH welcomes your application even if you chose not to submit the letter.

  When requested, letters of intent are due 30 days before the application due date. The FOA will specify what information should be included. Generally the letter of intent includes the FOA number, a descriptive title of the proposed activity, the name of the applicant institution, the name, address and phone number of the PI(s), and identifies other key personnel and participating institutions.

- **Looking for Submission Policies?**

  Before you hit submit, check out the [Submission Policies page](#) for answers to questions such as:

  - What if the [due date](#) falls on a holiday, weekend, or NIH office closure?
  - Can [late applications](#) ever be accepted?
  - What if you experience [system issues](#)?
  - Who qualifies for [continuous submission](#)?
  - What types of information does NIH accept [post-submission](#)?
  - How many [resubmissions](#) are permitted?
  - How does NIH handle [overlapping applications](#)?
  - What if [severe weather](#) closes applicant institutions?

  For more information, see the [frequently asked questions page](#) on submission policies.

- **New “All About Grants” Podcast on Managing Conflicts of Interest in Peer Review**

  Thousands of researchers serve as peer reviewers each year at NIH. As part of their service, they assess the scientific and technical merit of numerous applications. Sometimes, during their review,
they recognize a possible conflict of interest with an application that should be disclosed to NIH.

In this next installment of the NIH’s All About Grants podcast series, we talk about how NIH manages conflicts of interest to ensure that we maintain integrity throughout the peer review process (MP3 / Transcript). Sally Amero, Ph.D., NIH’s Review Policy Officer, joins us and explains why it is important to manage these conflicts, what is and is not a potential conflict, how to disclose conflicts, and who is involved throughout the peer review process.

NIH LBRN Acknowledgement

So that we can most effectively communicate the scope and results of our funding support, we would like to know when you are planning news announcements about IDeA awards or program activities and achievements...

When you produce such material, please be sure to identify the IDeA program, not just the INBRE, COBRE or sub-program, and to provide context about the program’s goals along the lines of:

The University of _________ has received $XXX from the National Institutes of Health (NIH) to support an Institutional Development Award (IDeA) Center of Biomedical Research Excellence. The IDeA program builds research capacities in states that historically have had low levels of NIH funding by supporting basic, clinical and translational research; faculty development; and infrastructure improvements.

In journal articles, news releases, or other materials about your program’s activities or achievements, please use funding acknowledgement language such as:

Research reported in this {publication, release} was supported by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number 5 P20 GM103424-15 and 3 P20 GM103424-15S1.

• In journal articles, oral or poster presentations, news releases, news and feature articles, interviews with reporters and other communications, acknowledge the IDeA program's full or partial support of the research. The citation in scientific publications should use the following format:

Research reported in this publication was supported by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under
grant number P20GM12345.

- If you wish to acknowledge NIH/NIGMS funding on your Web site or other communication product, you may use wording such as:

  Funded by an Institutional Development Award (IDeA) from the National Institutes of Health.
  or
  Funded by the LBRN (P20GM12345) an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health.

  Please do not use the NIH or NIGMS logo to acknowledge funding, as these logos are only to be used for material produced by NIH and its components.