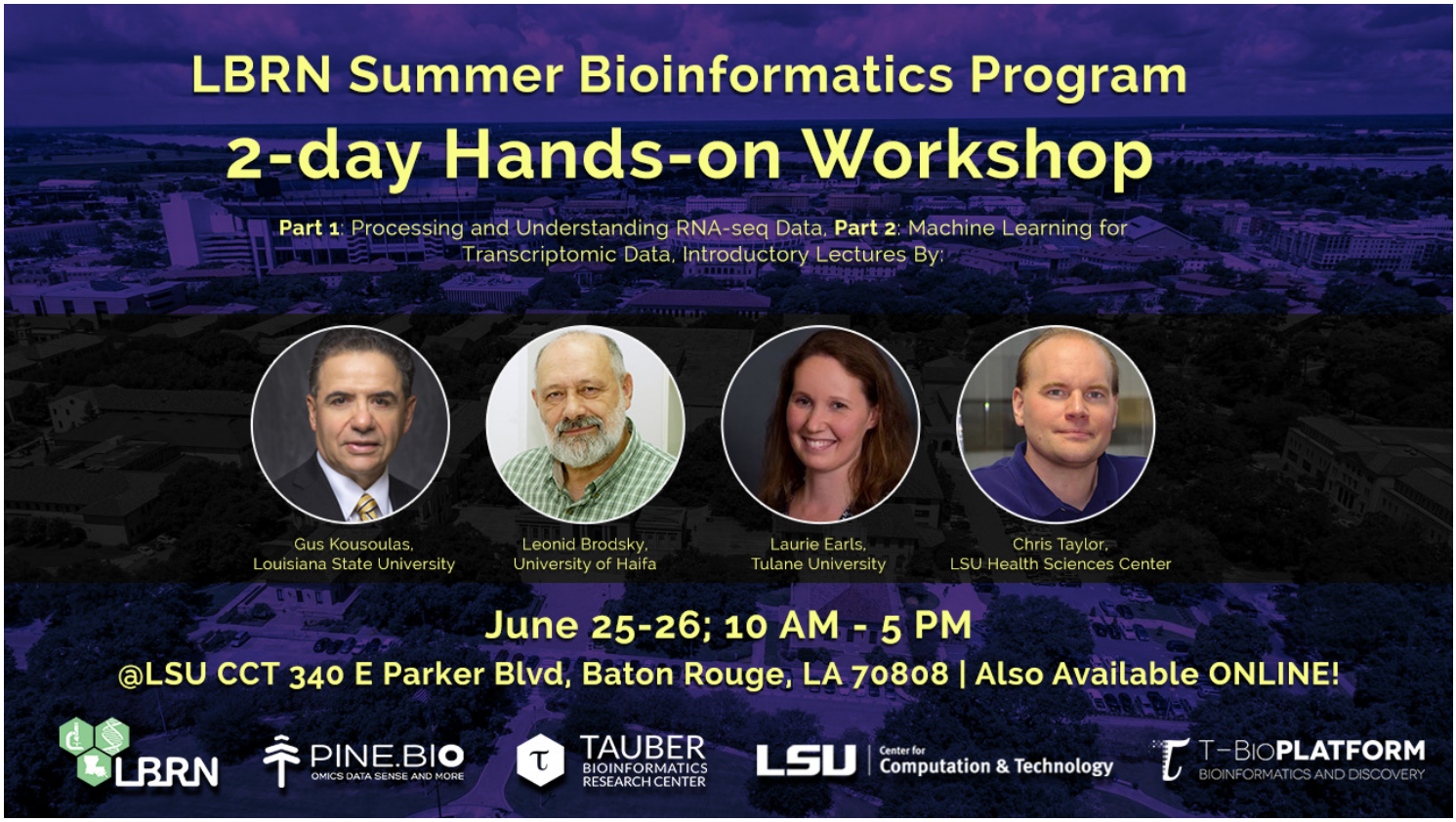
News, Opportunities and Deadlines for June 2018

LBRN Summer Bioinformatics Program



Date: June 25th – 26th, 2018

Time: 10:00 am to 5:30 pm (CST)

Location: CCT, LSU

- **Workshop 1: Processing and Understanding RNA-seq Data**

Part 1: Processing Data – a critical approach to RNA-seq

One of the primary challenges in processing RNA-seq data is in aligning it accurately to a reference genome and getting true values associated with biological variation. In this part of the workshop, we will review how subtle changes in our pipeline for read alignment and quantification will affect the results.

Once we prepared a table, we are able to understand which gene has a higher expression than others and try to interpret these values in the context of what is known about genes and their functional role – using tools such as gene ontology and pathways.

Part 2: Detecting differences in RNA-seq data

When we have a table of several thousands of rows, we are faced with a challenge to understand what do all of these numbers mean across multiple samples. To analyze such a large number of values, statistical methods have been developed to look at variation across groups – namely, differential gene expression. In this part of the workshop, we will work with the table separating the samples into 2 groups and selecting only those genes that have a statistically significant variation in expression between those samples. We will also use Principal

Component Analysis to view how the gene expression data separates samples.

- **Workshop 2: Machine Learning for Transcriptomic Data**

Part 1: Conventional Machine Learning Approaches for Transcriptomic Data

In a series of hands-on exercises, participants will explore the expression table using conventional unsupervised machine learning methods like PCA and clustering. After that, we will use our understanding of the data and utilize a labeled dataset to train a classification model with and without feature selection.

Part 2: Project Workflow and Biological Interpretation

The second session will focus on workflow and how the methods we have learned to use can be applied to various problems, including a full analysis example – from raw data to identification of key groups and then working with the data to extract biological meaning while being aware of limitations some of the methods have.

Schedule

June 25th

- 10:00 ~ 12:00 PM
  - Guest speakers:
    - Dr. Gus Kousoulas, LBRN: Training and Resources for Louisiana Biomedical Researchers
    - Chris Taylor, LBRN BBC: The LBRN Bioinformatics Core.
    - Laurie Earls (Tulane, Mol. Bio): Bioinformatics for Molecular Biologists: Why do we need to understand it?
    - Leonid Brodsky (TBRC/Haifa University): T-BioInfo platform, a multi-omics platform for research and education
- 12:00 ~ 2:00 PM
  - Lunch
- 2:00 ~ 5 : 30 PM
  - **Hands on workshop 1 -> Processing and Understanding RNA-seq Data**

June 26th

- 10:00 ~ 1:00 PM
  - **Hands on workshop 2 -> Machine Learning for Biomedical Data**
- 1:00 ~ 2:00 PM
  - Lunch
- 1:00 ~ 3 PM
  - Afternoon session: Independent projects discussion and training

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LONI HPC Training

HPC@LSU | Training

The schedule for the Summer 2018 HPC Training is available at http://www.hpc.lsu.edu/training/tutorials.php.

Our next HPC trainings will be held on Wednesday, June 20 at 9:00 AM in 307 Frey Computing Service Center and broadcast through WebEx for remote users.

Note that all HPC trainings will start at 9:00AM.

Wednesday, June 20, 2018: HPC User Environment 2, Job Management with PBS
This training provides an overview of the HPC/LONI general account and allocation policies, hardware and software environments, queuing system, compiling programs, writing submit scripts, running and monitoring jobs on HPC systems.
This training is the second session of the ***mandatory*** two day training event for all HPC/LONI new users held on June 13 and June 20.
Prerequisites: Familiarity with Linux/Unix commands and editors

Next two HPC Trainings:

Wednesday, June 27, 2018: Practical Programming in C/C++ 1
Wednesday, July 11, 2018: Practical Programming in C/C++ 2
C/C++ is the programming language often used on HPC (high performance computing) systems. This two-part training on C/C++ will provide a brief introduction to the C/C++ programming language. The first part will cover basic syntax and grammar. The second part will focus on more advanced concepts which lead to practical programming techniques especially useful for scientific research and engineering. No prior programming background is expected.
Prerequisites:
Users are free to use their own laptops/workstations in which case a C/C++ compiler such as GCC must be installed
OR
HPC/LONI account to access C/C++ compilers on the clusters.

Please visit http://www.hpc.lsu.edu/training/tutorials.php for more details and register using the link provided.
Users who plan on joining remotely will be provided with a WebEx Link in their registration confirmation email. Please see the system requirements at https://grok.lsu.edu/Categories.aspx?parentCategoryId=3381.

2018 LBRN Summer Research Program

The Louisiana Biomedical Research Network (LBRN) sponsors a summer research program in support of undergraduate students, graduate students and faculty from any Louisiana institute. We offer qualified participants the opportunity to work in established research laboratories at Louisiana State University, LSU Health Sciences Center in New Orleans, LSU Health Sciences Center in Shreveport, Tulane Medical Center, or Tulane National Primate Research Center. The goal of our program and funding is to support biomedical research through an increase in graduate school admissions in these scientific fields and make Louisiana researchers more competitive in obtaining federal funding for research.

Summer Research Events for our Undergraduate programs:

• LIGO – Open to the public every 3rd Saturday (on your own) https://www.ligo.caltech.edu/LA
• Softball – June 22 – 9:00 AM @ LSU UREC Field Complex, 2387 Gourrier Avenue
• Game Night + Potluck - July 6 – 5:00 - 10:00 PM @ LSU DMC 1008B
• Managing Stress Talk – July 17 – 3:00 PM @ LSU DMC 1008B
• Astronomy Night – July 19 – 5:30 PM @ 130 Nicholson Hall
• Presentation by Dr. Clinton S. Wilson – July 25 – 2:00 PM @ DMC 1034
• SURF – July 27 – All day @ LSU Union
• Movie Night- TBD

***DMC stands for the Digital Media Center at LSU Center for Computation and Technology

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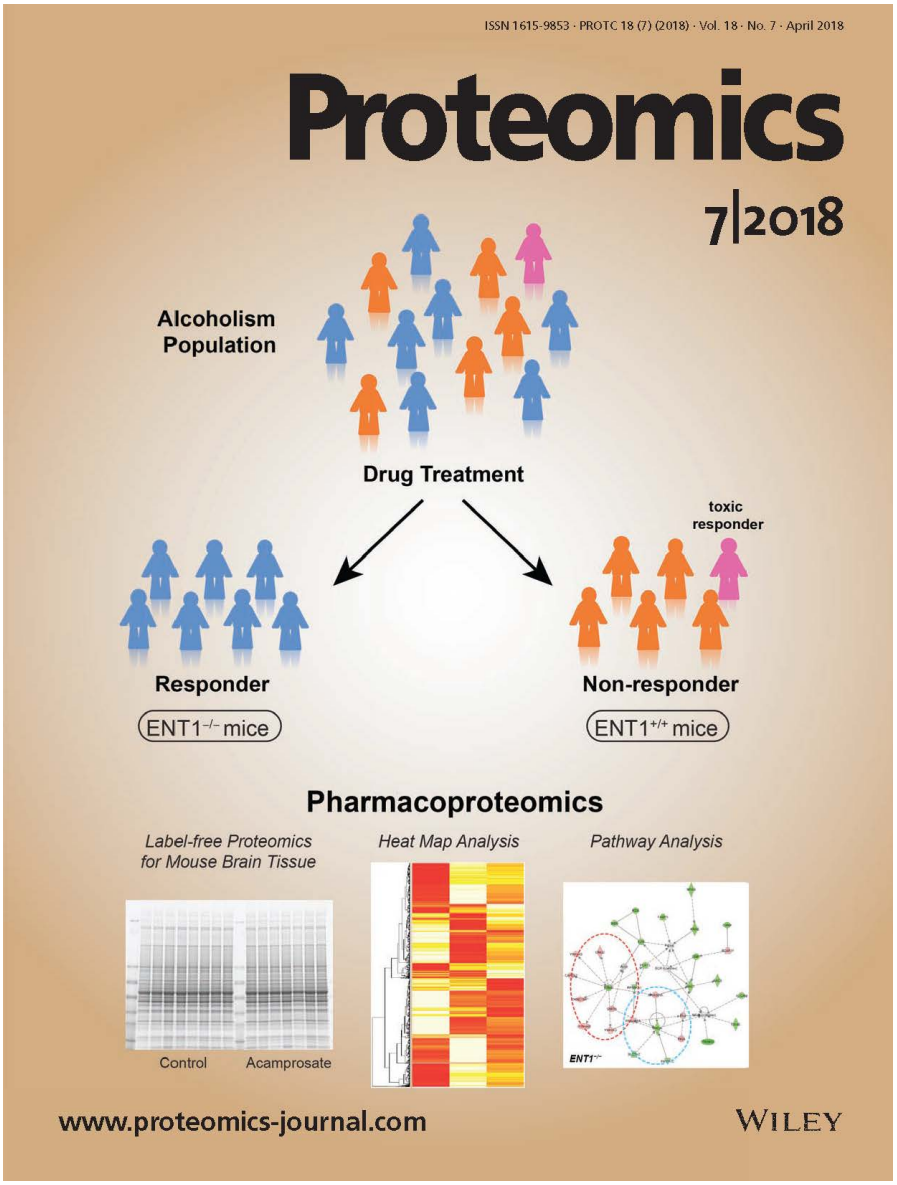
- **MENTORSHIP**

The LBRN program expects that our participants perform full time research for the period of funding. We do not allow for other jobs, teaching or classes or vacations to be scheduled during the funding period; fellowships (undergraduate students), stipends (graduate students), and summer salaries (faculty) are sufficient to enable the funded participant to focus 100% on the research project during the funding period. The student participant may become involved in a research project that is ongoing in the chosen laboratory, or design a project in collaboration with the intended mentor.

Mentor Application

LBRN Publication News



LSUS LBRN Bioinformatics Core Faculty Work Featured on the Cover of Proteomics Journal !

Dr. Urska Cvek and Dr. Marjan Trutschl, members of the LBRN BBC Core and Professors in Department of Computer Science at LSU Shreveport are co-authors of a cross-institutional manuscript that has been published and featured on the cover of the latest issue of Proteomics, a Wiley journal: https://onlinelibrary.wiley.com/toc/16159861/18/7**.**

This project was led by Dr. Hyung W. Nam from LSU Health Sciences Shreveport (Department of Pharmacology, Toxicology, and Neuroscience) and was a collaboration among faculty from Mayo Clinic College of Medicine, LSUHSC-S, and LSUS. In the article titled “Pharmacoproteomics Profile in Response to Acamprosate Treatment of an Alcoholism Animal Model” the authors studied the FDA-approved medication for the treatment of alcoholism that is only effective in certain patients. To investigate the mechanism of acamprosate efficacy, the authors employ a pharmacoproteomics approach using an animal model of alcoholism, type 1 equilibrative nucleoside transporter (ENT1) null mice. The results suggest that neuroimmune restoration is a potentialy efficient mechanism in the acamprosate treatment of certain sub-populations of alcohol dependent subjects.

Proteomics Journal is the premier international source for information on all aspects of applications and technologies, including software, in proteomics and other "omics". The journal with an impact factor of 4.041 includes but is not limited to proteomics, genomics, transcriptomics,

metabolomics and lipidomics, and systems biology approaches.

NIH : Academic Research Enhancement Award for Undergraduate-Focused Institutions (R15 - Clinical Trial Not Allowed)

National Institutes of Health
Office of Extramural Research

Grants & Funding
NIH's Central Resource for Grants and Funding Information

A new **NIGMS R15 AREA program FOA** (PAR-18-714) that has been published today. The purpose of this Academic Research Enhancement Award (AREA) for Undergraduate-Focused Institutions is to support small scale research grants at institutions that do not receive substantial funding from the NIH, with an emphasis on providing biomedical research experiences primarily for undergraduate students, and enhancing the research environment at these applicant institutions. Eligible institutions must award baccalaureate science degrees, and have received less than 6 million dollars per year of NIH support (total costs) in 4 of the last 7 fiscal years. **This AREA FOA emphasizes the engagement and inclusion of undergraduates in research.**

See the details of this FOA at: https://grants.nih.gov/grants/guide/pa-files/PAR-18-714.html

Please note the following changes in NIGMS Support of Academic Research Enhancement Award (R15) Grants as published in the Notice (PAR-18-714):

1. NIGMS will no longer accept New, Renewal, Resubmission or Revision applications for R15 grants under the NIH Parent R15 Funding Opportunity Announcement (FOA) (PA-18-504 and subsequent reissuances).
2. All R15 applications for NIGMS support must be submitted to PAR-18-714 "Academic Research Enhancement Award for Undergraduate-Focused Institutions".

The first AIDS Application due date for this FOA is September 7, 2018

More details...

BBC Core Educational Resource

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.

LONI HPC Allocation for LBRN

We are happy to announce that High Performance Computing allocation for supporting LBRN/BBC Core community from the LONI HPC system.

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.

CFA for Short Term Core Pojects

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.

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NIH Extramural Nexus (NIH/OD)

National Institutes of Health
Office of Extramural Research

- ## NIH Wants You! – Apply to Be Our Next Director of the Center for Scientific Review

Do you have a vision for the future of improving scientific reviews? Are you a first-rate Scientific Leader seeking a career at the Center for supporting the most preeminent biomedical research institutes in the nation and the world? If so, the NIH has the perfect opportunity for you!

The NIH is currently accepting applications for the Director, Center for Scientific Review. Applicants must have a commitment to scientific excellence and the energy, enthusiasm, and innovative thinking necessary to lead a dynamic and diverse organization.

To apply and be considered before the August 21, 2018 closing date, please visit here to review the full vacancy announcement and requirements.

- ## RCDeCade: 10 Years and Still Counting

Remember hearing those stories about how your grand-PIs had to walk five miles, in the snow, uphill, with no shoes just to learn how NIH spent its research budget? Well, believe it or not, but that was just ten years ago. Today, we have the Research, Condition, and Disease Categorization (RCDC) webtool to do this in a blink of an eye. Now, following the official release of Fiscal Year (FY) 2017 data and updated estimates for FYs 2018 and 2019 last month, we wanted to celebrate a successful decade of service.

With origins stemming from the NIH Reauthorization Act of 2006, and now available via NIH RePORT, RCDC is a helpful resource for investigators, advocacy groups, Congress, and the public to easily see how much NIH spends on certain research areas year by year. Since 2008, we have made regular enhancements to make the system more beneficial to all. Project listings published. Data cleansed. Quality enhanced. Disease burden information added. And, today, 285 categories reported online.

....Continue reading

Top Stories

- ## Working with Human Subjects? New Human Subjects System Replaces NIH's Inclusion Management System

On June 9, 2018, a new Human Subjects System will replace the Inclusion Management System (IMS) currently used for reporting participant sex/gender, race, and ethnicity information for NIH grants. The new system consolidates human subject information submitted in applications and progress reports and will be used for all human subject-related post-submission updates as of its release on June 9.

Recipients will be able to access the system through the Human Subject link that will be on both the eRA Commons Status page and in the RPPR. Investigators and signing officials will be able to make study updates or corrections (including just-in-time or off-cycle updates) through the new system.

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- ## xTRACT Anticipated to be Required in Fiscal Year 2020

In October 2015, eRA introduced xTRACT as an electronic system within eRA Commons for creating research training data tables and tracking trainee outcomes. xTRACT permits users to leverage data already in eRA Commons to pre-populate training tables with trainee names, institution information, award information, etc., which can be used both in new application submissions and for progress reports [the Research Performance Progress Report (RPPR)]. While use of xTRACT is not required currently, it is anticipated to be required as of FY 2020 for certain types of training grant applications.

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New Resources

- **New Podcast: Data Privacy, Access, and Security of the Personal Data NIH Collects on Grantees, Applicants, Investigators, and Trainees**

NIH takes the security and privacy of data of people supported by NIH grants seriously. Some of this information is made public if we make an award—such as name and contact information. Other data is protected by the Privacy Act. If you have ever wondered how NIH protects these data, then take a few minutes and listen to the discussion on a new All About Grants podcast (MP3 / Transcript).

You Ask, We Answer

- **After My Application is Submitted, Can I Include a Copy or Citation of a Preprint as Post-submission Materials?**

No. Pre-prints are not included in the list of allowable post-submission materials, because they do not fall in the category of unanticipated events.

Post-submission materials are not intended to correct oversights or errors discovered after submission of the application, but rather allow applicants the opportunity to respond to unforeseen events.

See NOT-OD-17-066 and our post-submission policy FAQs for more information on NIH's post-submission material policy,

- **How do you define a "study" for the purposes of providing information on the PHS Human Subject and Clinical Trial form and registering in ClinicalTrials.gov?**

Our application instructions provide guidance to submit a study record for each protocol. When in doubt, NIH supports lumping several aims or hypotheses into a single study record, to the extent that makes sense for your research.
Have other questions related to the new PHS Human Subject and Clinical Trial form or NIH clinical trial policies? Find more FAQs and their answers at grants.nih.gov.

National Research Mentoring Network

NRMN
Mentoring to Diversify the Biomedical Workforce
National Research Mentoring Network

NRMN @ ABRCMS 2018- Travel Award Programs; Apply Today!

ABRCMS is one of the nation's largest STEM conferences for underrepresented minority students. Over the four days, more than 2,000 students present their research, explore over 380 exhibit booths, participate in cutting edge scientific sessions and network with faculty and peers from across the nation.

Research faculty provide the students with valuable feedback by serving as presentation judges and play an essential role in mentoring students and learning strategies for facilitating student success.

The Annual Biomedical Research Conference for Minority Students(ABRCMS) is inviting applications for two travel award programs.

- Research faculty and mentors willing to serve as judges at ABRCMS 2018 are eligible to apply for the ABRCMS Judge Travel Award**.** Apply by **July 20th**
- Undergraduates, postbaccalureates, and terminal level master's students are invited to showcase their research by submitting abstracts for presentation. The abstract submission deadline is **September 7th**
- Travel funds are available to eligible undergraduates and postbaccalaureates students who submit an abstract for poster or oral presentation. The deadline to apply for a travel award is **August 22nd**

Questions? Contact abrcms@asmusa.org.

NIH 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.
