News, Opportunities and Deadlines for May 2021

Report: 2021 Annual Conference on Computational Biology and Bioinformatics

The 2021 Annual LBRN Conference on Computational Biology & Bioinformatics was held for the first time in a completely virtual format on April 15-17 2021 with a record number of over 200 registrations and a virtual format with 25 submitted abstracts for posters from our Project PI's, Graduate, and Undergraduate students from our partner and outreach campuses that are part of the LBRN system throughout the state of Louisiana. We hope those who participated benefited and appreciated that we were able to hold this in a virtual format considering the pandemic at this time.

Topics included:

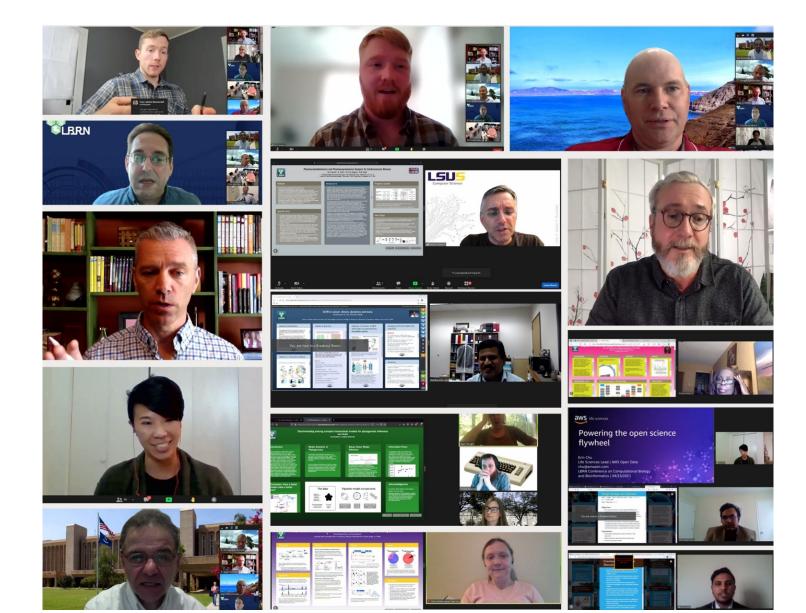
- Cancer Informatics
- Cloud Computing
- Coronavirus Disease (COVID-19)
- Evolutionary Genomics and Phylogenetics
- Microbiome and Metagenomics
- Virology and Infectious Diseases

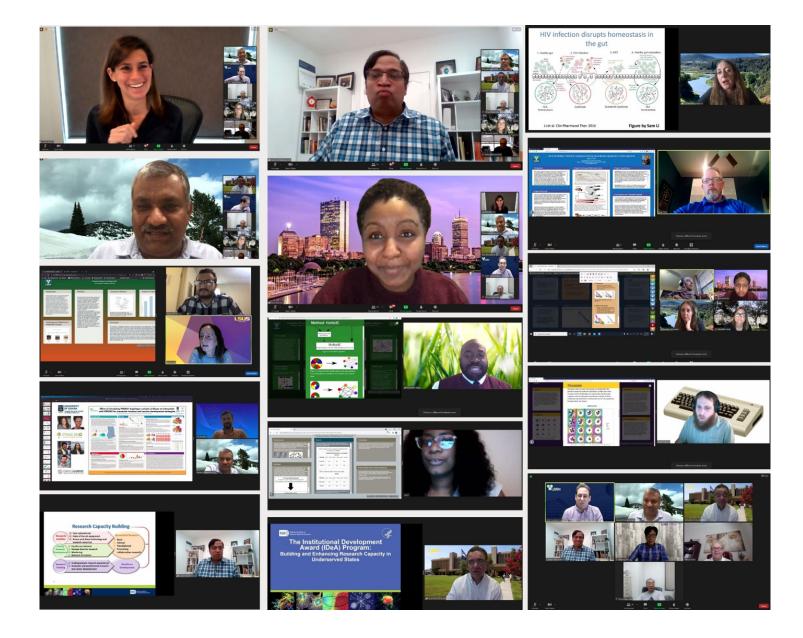


Media:

Nearly all the talks are available online on the event media page available here to access at your convenience: https://lbrn.lsu.edu/2021-LCCBB-Media.html

Event Images:





Poster Presentations:

Participants over 2 days exhibited a total of 25 posters through a virtual platform, which was
especially possible for presentations, conversations and Q&A through break rooms each in
each day where all participants could engage directly with the poster presenters. You can
explore and search these posters and contact the authors through the iPosterSession
platform we utilized for our meeting: https://lbrn2021lccbb-

<u>lsu.ipostersessions.com/Default.aspx?s=LCCBB_2021_gallery</u>

Poster Presentation Awards:

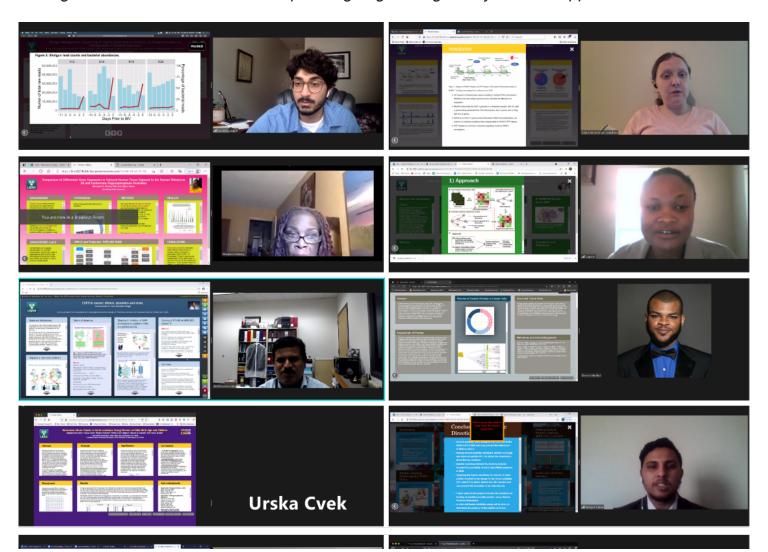
Awards were made to graduate and undergraduate LBRN project affiliated and PUI campus poster presentation participants. You can see their posters on the <u>website</u>.

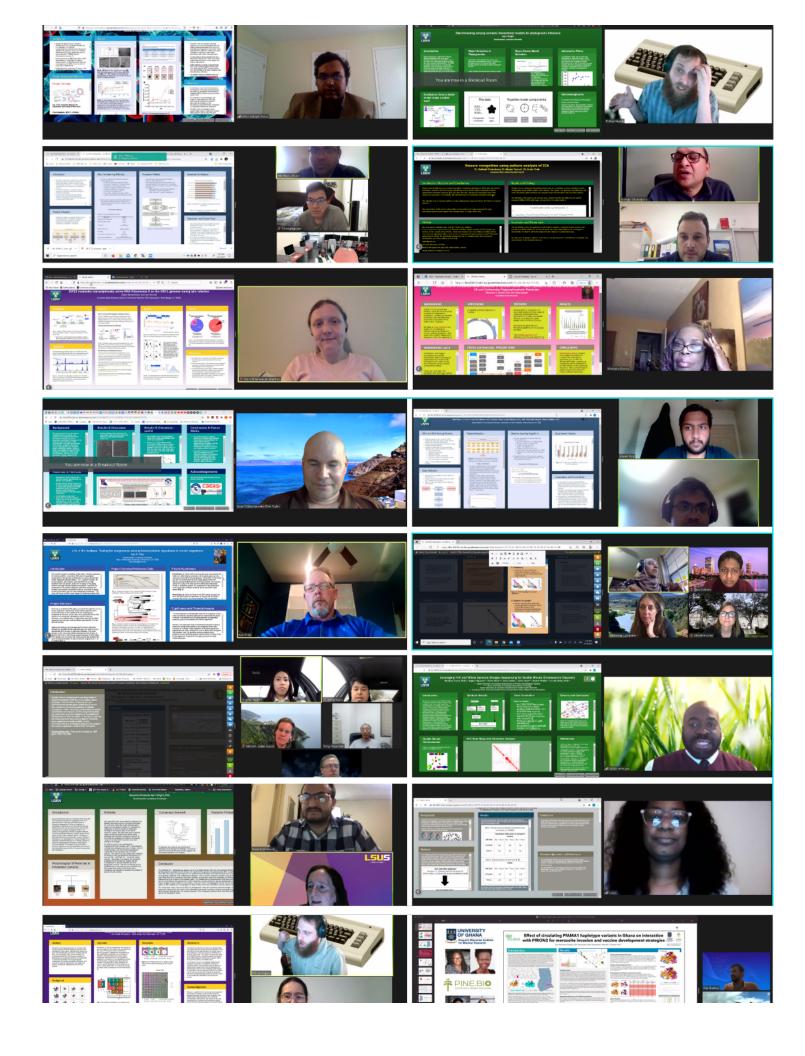
Undergraduate Student Presentation Awards

- 1st: **Aasish Rijal, University of New Orleans**, A Sequence-based Machine Learning Method to effectively predict DNA and RNA Binding Residues.
- 2nd: Basanta Khakurel, Southeastern Louisiana University, Species Delimitation in Eastern Pine Snakes (Pituophis melanoleucus).
- 3rd: Angela Nguyen & Rahib Islam, Xavier University of Louisiana, Cancer Genomes with eccDNA Oncogene Amplification Show Evidence of Deletion-Episome Model of Double Minute Chromosome Formation.

Graduate Student Presentation Awards

- 1st: Ishita Choudhary, LSU School of Veterinary Medicine, Baton Rouge, Compartmentspecific transcriptomics of ozone-exposed murine lungs reveal sex- and cell type-associated perturbations relevant to mucoinflammatory lung diseases.
- 2nd: Jafrin Jobayer Sonju, University of Louisiana at Monroe, pH-sensitive liposome formulation of peptidomimetic-doxorubicin conjugate for targeted delivery of anticancer conjugate on HER2 positive lung and breast cancer.
- 3rd: **Ugochi Emelogu, Southern University and A&M College, Baton Rouge**, *Target genes of Hoxa1 time series sequencing: a gene regulatory network approach.*







4th LBRN-LONI Scientific Computing Bootcamp



Event Date: May 27-29, May 31 to June 2, 2021

Deadline: May 21, 2021Location: Zoom Online

Scientific computing is becoming more ubiquitous for all types of research areas. Skills and knowledge that are necessary to take full advantage of the power of computing, however, are often inadequately present in both curricular and extracurricular training. The purpose of this workshop is, by both presentation and hands-on experiences, to help attendants understand the usage of popular scientific computing programming tools and prepare for their future computational study and research career.

In five days, the attendants will learn:

- Introduction to R programming language with its applications in scientific computing
- Introduction to Python programming language with its applications in scientific computing
- Introduction to Deep Learning



NIGMS IDeA-wide Town Hall Meeting hosted by NAIPI

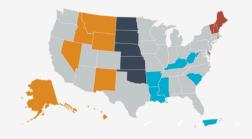
NIGMS IDeA-wide Town Hall Meeting

- ◆ General overview of the IDeA program ◆ IDeA Program-sponsored COVID-19-related research activities
- ◆ Upcoming COVID-19-related funding opportunities open to IDeA program PIs ◆ Google/Amazon-sponsored cloud computing training and research programs for IDeA program



Keynote Speaker:

Dr. Ming Lei is the Director of the Division for Research Capacity Building at the National Institute of General Medical Sciences (NIGMS). He oversees the Institutional Development Award (IDeA) and other research capacity-building programs with a total annual funding budget of approximately \$500 million. He held leadership positions at the National Cancer Institute (NCI) and the National Science Foundation (NSF) before joining NIGMS in 2018. Prior to entering public service, Ming Lei was an R01-funded principal investigator and Professor at the Medical College of Wisconsin, studying the regulation of DNA replication. He earned an Ph.D. from Cornell University at Ithaca, New York.



Presentation Topics

- General overview of the IDeA program
- IDeA Program-sponsored COVID-19-related research activities
- Upcoming COVID-19-related funding opportunities open to IDeA program PIs

Google/Amazon-sponsored cloud computing training and research programs for IDeA program

NAIPI aims to protect and promote the IDeA programs. It fosters interactions, promotes resource sharing, enhances the national visibility of the INBREs, COBREs, and CTRs, develops consensus on priorities, identifies and disseminates best practices, identifies opportunities and develops strategies.



Thank you to a Dynamic Duo: Drs. Bill and Sheri Wischusen set to Retirement



Message from Bill: "Of the numerous projects that I worked on: LSU LBRN was one of the best, both in terms of what we were doing and who we were working with."

Dr. E. William (Bill) Wischusen, LSU Biology, coordinated the LBRN grant from its inception in 2001 (funding arrived in 2002) until 2016. Dr. Sheri Wischusen, LSU College of Science, while not part of the LBRN grant, coordinated the LSU HHMI Program until it ended at LSU from which we (LBRN) collaborated with for the our Summer Programs at LSU. We thank them for all the work with LBRN!

Success Stories of LBRN

LBRN Students Research Accomplishments

Ghinna Fondinka, a Loyola University student majoring in Biological Sciences participated in Dr. Elahe Mahdavian's (LSUS) research-based course as part of the 2020 LBRN virtual summer

program. Ghinna has successfully presented his CADD project entitled "Application of SIB-Similarity and Molecular Docking Computational Tools in Drug Discovery for COVID-19" at the Annual Undergraduate Research Symposium (URS) – Loyola University – April 2021. The course entitled "Computational Aided Drug Discovery (CADD)", enabled students to integrate various computational modeling tools and bioinformatics in the context of <u>antiviral drug discovery</u> for COVID-19. In this course, Dr. Mahdavian merged instruction with guided research, thus students participated in hypothesis-driven investigations in a course-based format.



Presentation link:

https://www.dropbox.com/s/fylarv7rzf2zkab/URS%20Presentation%20Recorded-Ghinna%20Fondinka.mp4?dl=0

Other LBRN program participants including several LSUS students have made research presentations on their CADD projects in Spring 2021 (LSUS research forum and the annual LBRN meeting). Dr. Mahdavian states: "We are currently working on two manuscripts to publish different aspects of these CADD projects (pedagogy and research), both will include student co-authorship."

Please see links below for samples of student recent poster presentations on CADD projects:

- <u>Ibrn2021am-lsu.ipostersessions.com/Default.aspx?s=43-E8-1E-38-DC-B6-28-E5-84-BC-2B-20-E1-3D-F5-8D</u>
- <u>lbrn2021am-lsu.ipostersessions.com/Default.aspx?s=66-93-1C-8D-1C-BB-C8-B4-02-F6-35-77-20-A5-B4-5C</u>
- <u>lbrn2021am-lsu.ipostersessions.com/Default.aspx?s=F4-6D-94-E5-D1-0B-56-32-2E-A2-0A-</u>

2E-7D-B0-7D-29

 https://www.dropbox.com/s/keo1k3diz3uu7gx/AveryChelseyCADDPoster-LSUS%20Scholar-2021.pptx?dl=0

Congratulations!

LBRN PI Awarded R01 from NIH

The National Institutes of Health awarded \$1.65 million to fund cancer research being done by **Dr. Seetharama Jois (LBRN PI)**, a professor of Medicinal Chemistry at the School of Basic Pharmaceutical and Toxicological Sciences at the University of Louisiana Monroe College of Pharmacy. The National Cancer Institute of the NIH has issued a notice of award for the project titled "**Molecular mechanism of EGFRs protein-protein interaction inhibition by a grafted peptide in NSCLC**".

The research will be carried out in collaboration with Yong-Yu Liu, M.D., Ph.D., a cancer pharmacologist at the ULM College of Pharmacy, and a lung-cancer researcher from the Mayo Clinic in Minnesota.



Photo from Siddharth Gaulee/ULM Photo Services

Director of the Office of Sponsored Programs and Research of the University of Louisiana Monroe, LaWanna Gilbert-Bell, said, "This is the second R01 awarded by NIH to the University since 2016. This is the highest award possible from the NIH. It reiterates and highlights the profound research being conducted by our distinguished faculty."

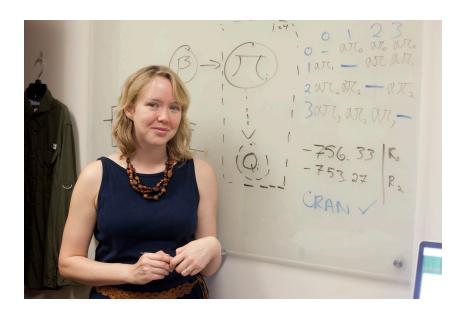
... to see more details

Southeastern Biologist Receives NSF grant

Southeastern Louisiana University Assistant Professor of Biological Sciences Dr. April

Wright (LBRN PI) has been awarded a five-year grant of \$1,125,000 by the National Science Foundation to integrate information from the fossil record with data collected from living species to infer phylogenetic relationships.

The grant was one of only two CAREER grants awarded in the state. The National Science Foundation CAREER awards are in support of junior faculty who exemplify the role of teacher-scholars through research and education, and the integration of these endeavors in the context of their organizations' missions.



The project will focus on the use of posterior predictive methods for assessing which models are most appropriate for a particular dataset. The work will provide practical guidance and research software tools for researchers to perform more complex model assessment in systemic biology, Wright said.

"I will be working with statistical methods to integrate fossil data with extant molecular data to estimate dated phylogenetic trees," said Wright. "Phylogenetic trees are one of our key ways of understanding the evolution of organisms, form, and function. And fossils are often our only direct source of information about past organisms. What we'll be doing in the lab is evaluating different mathematical models for estimating phylogenetic trees from joint fossil and molecular data."

... to see more details

LSU Heath Researcher receives \$750k NASA grant

Project: Develop a novel single-cell biodosimetry for brain genomic instability and neurodegeneration to predict clinical health outcomes in human spaceflight crews.

The research team includes project investigator, Xiaohong Lu, LSUHSC-S, co-investigators Dr.

Lynn Harrison, Professor of Molecular and Cellular Physiology at LSU Health Shreveport; Dr. Jeffery Chancellor, Assistant Professor at LSU Baton Rouge; and **Dr. Urska Cvek (LBRN PI)**, Professor at LSU Shreveport.

As NASA plans future exploration missions to the Lunar and Martian surfaces, realistic ground-based analog studies and more predictive biodosimetry are needed to assess whether the space radiation poses a detrimental risk of brain genomic instability and neurodegeneration that leads to late-onset behavioral deterioration for spaceflight crews. Implementing a recently developed method of recreating the intravehicular (IVA) radiation environment expected on spaceflight vehicles and habitats and a novel genetic sensor, this proposal addresses Research Topic 3 – Animal Biology Studies in support of Human Space Exploration and Sub-topic AB1-A: Behavior and underlying neural function in Appendix D: Solicitation of Proposals for Flight and Ground Space Biology Research. We propose to determine how the space environment and sex affect brain genomic stability and consequent age-related brain structure and function changes. Our studies will support Human Space Exploration, by contributing the first biodosimetry for quantifying brain DNA instability and neurodegenerative changes to predict clinical health outcomes in human spaceflight crews and the utility of available ground-based analogs to realize basic mechanisms that can lead to the development of biologic counter-measures.

... to see more details

BioMorph Lab at Louisiana Tech receives two USAF contracts

Louisiana Tech's BioMorph Lab, directed by professor **Dr. David Mills (LBRN PI)**, recently received a pair of research contracts from the U.S. Air Force that call for the development of an antimicrobial filament for 3D medical device printing and a multifunctional bandage.

The antimicrobial filament is a bioplastic that contains agents to kill bacteria, fungi, and other elements that cause infection. The bandage will be multifunctional because it can be used in combat, at a military hospital, or for civilians. Components of the bandage will be printed.



Dr. David Mills & BioMorph Lab members

This is the first time the BioMorph Lab has received a USAF grant, but the Lab has had Department of Defense funding in the past. The contract is classified as Phase I, which is for 90 days. Mills' major goal is to locate a military medical partner for his Phase II proposal. Specifically, the research contracts are a collaboration between the USAF, Tech's BioMorph lab, and Mills' two startups, organicNANA and Nano Medicine.

... to see more details

Louisiana Coronavirus (COVID-19) Information

Information from CDC: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html

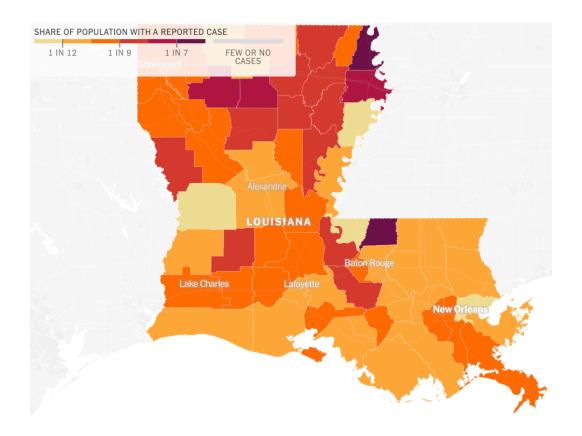
COVID-19 vaccination will help keep you from getting COVID-19

- All COVID-19 vaccines currently available in the United States have been shown to be safe and effective at preventing COVID-19. <u>Learn more about the different COVID-19 vaccines</u>.
- All COVID-19 vaccines that are in development are being carefully evaluated in clinical trials
 and will be authorized or approved only if they make it substantially less likely you will get
 COVID-19. <u>Learn more about how federal partners are ensuring COVID-19 vaccines work</u>.
- Based on what we know about vaccines for other diseases and early data from clinical trials, experts believe that getting a COVID-19 vaccine also helps keep you from getting seriously ill even if you do get COVID-19.
- Getting vaccinated yourself may also protect people around you, <u>particularly people at</u> increased risk for severe illness from COVID-19.
- Experts continue to conduct studies to learn more about how COVID-19 vaccination may reduce spread of the virus that causes COVID-19.

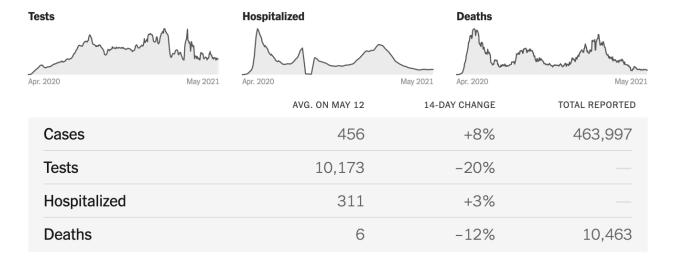
COVID-19 Vaccines for Children and Teens

Although fewer children have been infected with COVID-19 compared to adults, <u>children can</u> <u>be infected with the virus that causes COVID-19</u>, can get sick from COVID-19, and can spread COVID-19 to others. CDC recommends COVID-19 vaccination for everyone 12 years of age and older to help protect against COVID-19. Children 12 years of age and older are able to get the <u>Pfizer-BioNTech COVID-19 Vaccine</u>.

Cases per capita in Louisiana



Tracking COVID cases in Louisiana



The following information was provided by <u>The New York Times Interactive Coronavirus website</u>.

We want to remind everyone to continue practicing safety with regards to prevention of spreading and contracting the COVID-19 virus.

We remind everyone of the information provided here on our website: <u>LBRN COVID-19</u>.

NIH Extramural Nexus



Updated NIH-wide Strategic Plan for COVID-19 Research Now Available

NIH recently released its <u>updated Strategic Plan for COVID-19 Research</u>, available on the <u>NIH COVID-19 website</u>. Responses to a <u>Request for Information</u> helped inform this iteration, building on progress <u>since the 2020 plan</u>. The updated strategic plan highlights progress made in the development of diagnostics, therapeutics, and vaccines, along with developing strategies on how to effectively provide these resources. It also directs NIH-supported research into:

- Investigating and treating the long-term health consequences of COVID-19;
- Understanding and responding to new SARS-CoV-2 variants;

Understanding and engaging disproportionately impacted populations.

Enhancing Data Access and Analysis in the Cloud Advances NIH-Supported Discovery

To fully benefit from the <u>exponentially growing</u> body of biomedical data, we need cutting-edge approaches that foster data access, analysis, sharing, and collaboration so novel scientific questions can be pursued. But the sheer volume, sometimes siloed nature, along with the costs and time associated with analyzing large datasets, can be <u>difficult</u> for some researchers. Recognizing these concerns, NIH is helping by hosting large data sets and bringing together computational tools and cloud technologies in ways that support open access, interoperability, and collaborative analyses. We encourage you to explore how these resources may help accelerate your research in ways not possible before.

In recent years, NIH has invested in <u>cloud computing</u> and other platforms to create shared environments enabling opportunities for better data access and novel analyses. These investments are positively shifting how researchers interact with <u>COVID-19</u>, <u>genomic</u>, <u>imaging</u>, <u>proteomic</u>, and other NIH-supported large datasets.

The NIH Strategic Plan for Data Science suggests fostering data access and use through investing in cloud computing will have many benefits. Researchers, for one, can retrieve data quicker than before, without needing to copy and store any data locally. They can also leverage existing high compute environments to scale up analyses and improve efficiencies, without needing to build or maintain the underlying infrastructure. And working in the cloud may ease collaboration between government, academia, industry, and other partners to facilitate the translation of basic discoveries into novel treatments.



An NIH initiative that brings together computational tools and cloud technologies for our recipient institutions and supported investigators is the Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative. Launched in 2018, the STRIDES Initiative is a vehicle for NIH and NIH-funded researchers to access cloud resources through partnerships with commercial cloud providers—making it easier and more cost-effective to access large datasets and computing power. More than 60 NIH research institutions are currently taking advantage of the favorable pricing, training, and technical support available. We encourage you to learn how others are leveraging these services and explore the available opportunities too.

... Continue reading to learn more

• FY 2020 By the Numbers: Extramural Investments in Research

Each year around this time we look back on NIH's investment in research. Similar to <u>previous fiscal</u> <u>years (FYs)</u>, this post focuses on grant funding and success rates for research supported through our traditional annual appropriations.

Grants data related to <u>special coronavirus appropriations</u> are excluded here to be consistent with prior "By The Numbers" posts. For more on that spending, please review <u>these posts</u> and use <u>the advanced search functionality</u> available in <u>RePORTER</u>.

NIH received \$ 41.6 billion in FY 2020 (see our <u>Appropriations history here</u>). Of this amount, \$30.8 billion was awarded to 56,169 new and renewed meritorious extramural grants (excludes research and development contracts). This investment was up \$1.3 billion from FY 2019 (4.4 percent increase), with 1,157 more grants funded (2.1 percent increase). The awards were made to <u>2,650</u> academic universities, hospitals, small businesses, and other organizations throughout the U.S. and internationally.

... Continue reading to learn more

Helping To Protect the Privacy of Participants in Non-NIH Funded Research

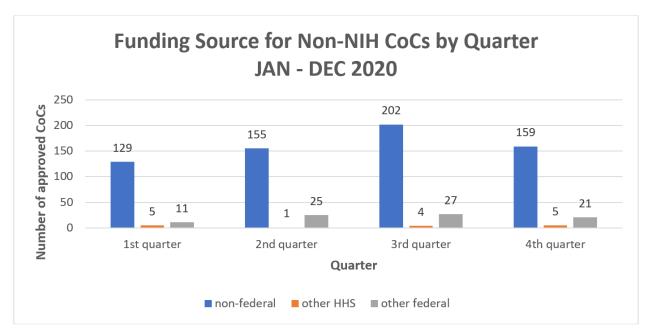
You likely know that for human-participant research funded wholly or in part by NIH, we automatically issue <u>Certificates of Confidentiality (CoCs)</u> as a <u>term and condition of award</u>. CoCs

protect identifiable, sensitive information of people who participate from being disclosed to others not associated with the study. More about the CoC policy can be found on this blog and podcast. But, for human-participant research funded by an entity other than NIH, did you know that you can reach out to us to request a CoC as well?

We offer this service for certain non-NIH funded projects to strengthen the privacy protections afforded to people involved in research studies. As with all CoCs, the protections for data or biospecimens collected under an active CoC issued for a non-NIH funded project also continue in perpetuity.

To obtain a CoC for a non-NIH funded project, investigators may request one through the <u>eRA CoC System</u>. NIH will ensure the research meets a number of requirements, including ensuring that the activity is actually research, that it falls within the mission of NIH or HHS, and that at least one institution or performance site is within the U.S or some of the data will be maintained within the U.S. On average, it takes about two days to process requests, though some can take longer. See our FAQs on <u>Certificates for Non-NIH</u>, <u>Federally Funded Research</u> and <u>Certificates for Non-Federally Funded Research</u> to learn more.

CoC requests come in for projects supported by many different funders. Non-federal sponsors, like research institutions, non-profit organizations, and pharmaceutical companies, consistently represent the bulk of approved requests. Figure 1 shows a breakdown by quarter last year. The remainder of requests issued come from human-participant research projects supported by other HHS funding sources, as well as the Department of Defense, Department of Veterans Affairs, the National Science Foundation, and other federal departments.



Reminder: NIH Will Continue to Accept Preliminary Data as Post-Submission Material Through January 2022 Council

In recognition of the fact that COVID-19 may still be adversely affecting the ability of applicants to generate preliminary data, NIH will continue to accept a one-page update with preliminary data as post-submission materials for applications submitted for the January 2022 Council (beginning with applications submitted for the May 25, 2021 due date for Fall 2021 review meetings), ONLY if the Funding Opportunity Announcement (FOA) used for submission allowed preliminary data in the application (NOT-OD-21-095).

The deadline for <u>submitting all post-submission materials</u>, including preliminary data, will be 30 days before the study section meeting or as stipulated in the FOA. Because applications for emergency competitive revisions and urgent competitive revisions undergo expedited review, post-submission materials will not be accepted for those applications.

For a visualization of the peer review process and timelines during COVID-19, see this infographic.

Updated Biographical Sketch and Other Support Format Pages Available Now and Required January 2022

As <u>announced</u> in March, updated biosketch and other support format pages and instructions are available for use in applications, Just-in-Time (JIT) Reports, and Research Performance Progress Reports (RPPRs). Use of the new format pages is preferred immediately and required for due dates and submissions on or after January 25, 2022 (NOT-OD-21-110). This represents a change from the original May 25, 2021 requirement date for the updated formats and other support signatures. Applicants and recipients can use this time to align their systems and processes with the new formats and instructions. Failure to follow the appropriate formats on or after January 25, 2022 may cause NIH to withdraw applications from or delay consideration of funding.

Applicants and recipients remain responsible for disclosing all research endeavors regardless of the version of the forms used, including:

 If asked by NIH staff, supporting documentation, which includes copies of contracts, grants or any other agreement specific to senior/key personnel foreign appointments and/or employment with a foreign institution for all foreign activities and resources that are reported in Other Support. If the contracts, grants or other agreements are not in English, recipients

- must provide translated copies.
- Immediate notification of undisclosed Other Support. When a recipient organization discovers
 that a PI or other Senior/Key personnel on an active NIH grant failed to disclose Other
 Support information outside of Just-in-Time or the RPPR, as applicable, the recipient must
 submit updated Other Support to the Grants Management Specialist named in the Notice of
 Award as soon as it becomes known.

See our Biosketch and Other Support pages for additional information.

All About Grants Podcast: NIH Loan Repayment Programs (Part 1) – An Overview

Now that we have your attention, join us for this first in a two part <u>NIH All About Grants</u> podcast mini-series on the <u>NIH Loan Repayment Programs (LRPs)</u> (<u>MP3 / Transcript</u>). Dr. Ericka Boone, Director of the Division of Loan Repayment within the NIH Office of Extramural Research, discusses the <u>different extramural LRPs available</u>, what exactly is "qualified educational debt" (and, importantly, what it is not), considerations for applying, <u>benefits</u> to participating, and much more.

"We all know that there are immense benefits to receiving the LRP, and one of them being relief from the debt burden of having to pay back student loans at a time where an investigator's at a really vulnerable career decision point. They're at their early stages of their career and they're wondering, do I stay in a career that I love or do I exit out of this career pathway in order to pursue other opportunities that might be more lucrative? And I really love this program, because it really helps to keep people actively engaged." – Ericka Boone

In our second conversation (coming soon), we will dive deeper into the specifics of developing your application. Please also check out the LRP page for <u>eligibility</u> and program information, send questions to <u>LRP@NIH.gov</u>, and follow them at <u>@NIH_LRP</u>.

Have an idea for a future podcast? Email ExtramuralNexus@mail.nih.gov and tell us all about it.

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. Please contact your LBRN Steering Committee Member.

LONI HPC Allocation for LBRN



To support the LBRN / BBC Core community on LONI HPC systems, we have renewed our high-performance computing allocation for 2020/2021.

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 <u>Dr. Nayong Kim</u>.

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 GM103424-18 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 (2P20GM103424-19) an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health.

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