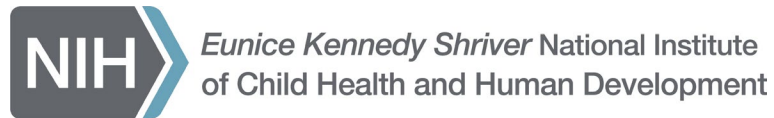


NICHD Director's Report

Diana W. Bianchi, M.D.

February 2, 2021



Talk Outline

- NIH Budget, New Congress, and New Administration
- 2020 NICHD Research Advances
- COVID-19 Research Updates
- NICHD Strategic Plan Implementation
- STrategies to EnRich Inclusion and AchieVe Equity (STRIVE) Initiative
- NICHD Staff Updates



NIH Budget, New Congress, and New Administration

NIH Budget and COVID-19-related Funding

FY21 Omnibus Appropriations

- NIH will receive \$42.9 billion, an increase of \$1.25 billion or 3%
 - \$12.6 million for Gabriella Miller Kids First
 - Additional \$5 million for INCLUDE, bringing it to \$65 million
- NICHD will receive \$1.59 billion for FY 21 (~\$36M increase)
 - Includes \$10 million increase for preterm birth research

COVID-19 research

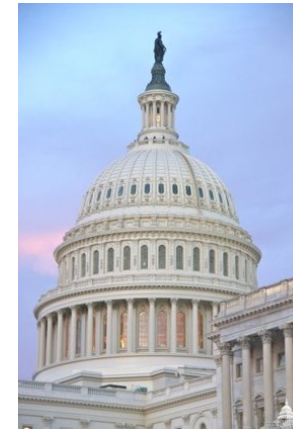
- NICHD's approach has been to compete for NIH OD funds to support COVID-19 research



A New Congress and a New Administration

Congressional leaders with history of strong NIH support

- Rosa DeLauro (D-CT) – chair of House Appropriations Committee
- Cathy McMorris-Rogers (R-WA) – ranking member of House Energy and Commerce Committee



Administration members and nominees with interests overlapping NICHD's mission areas

- Vice President Kamala Harris has long advocated for maternal health; proposed legislation in the Senate to address high rate of maternal mortality
- Assistant Secretary for Health – Rachel Levine, pediatrician with expertise in adolescent medicine
- Presidential Science Advisor and head of OSTP – Eric Lander, geneticist
- New head of Operation Warp Speed – David Kessler, pediatrician and former FDA head





Selected NICHD Research Advances of 2020



<https://www.nichd.nih.gov/newsroom/news/2020-year-in-review-showcase>

Women's Health Research Advances

- Researchers developed a non-invasive way to potentially shrink **uterine fibroids**. Mouse studies used nanoparticles to deliver a tumor-killing drug to the fibroids, setting the stage for possible studies in humans.
- Links between **endometriosis** and a type of DNA modification called DNA methylation raise the possibility that differences in DNA methylation patterns could be used to diagnose endometriosis
- Developing non-hormonal **contraception options**, as well as contraceptives that offer protection against STIs



Pregnancy and Postpartum Research Advances

- In New York City hospitals, Black and Hispanic women were more likely to deliver in “**poor**” **quality hospitals** (analysis based on their treatment and outcomes for pregnant women and very preterm newborns)
- Risk of death during pregnancy and up to 1 year after delivery was significantly higher for women who lived in **maternity healthcare “deserts”** - counties which lack hospitals with obstetric care
- **Postpartum depression** may persist up to three years after birth
- Researchers created two new **fetal growth calculators** to estimate the size of the fetus



Pediatric Research Advances

- **Screen time** before bed may affect kids differently, depending on whether they have a particular personality trait
- The benefits of **fetal surgery** to treat myelomeningocele persisted through school age
- **Drug labels** for doxycycline, clindamycin, and caffeine citrate now include better information for healthcare providers on recommended usage and dosage in pediatric populations
- Insights into the decision-making processes of adolescents may be useful for developing interventions to **encourage positive risk taking**



Intellectual and Developmental Disabilities Research Advances

- NICHD-funded researchers adapted a tool commonly used in neuroscience research to ensure that people with intellectual disabilities can still participate. The tool, called the **NIH Toolbox Cognitive Battery**, helps researchers assess cognitive functioning of adults and children.
- A **telehealth** approach to improve clinical trial access for infants with tuberous sclerosis complex
- A plant compound called apigenin **improved the cognitive and memory deficits** usually seen in a mouse model of Down syndrome



Rehabilitation Research Advances

- A study team identified a way to use **neuroimaging** results, specifically low-frequency oscillations, as a **biomarker** for a person's degree of injury and their potential to regain the ability to move after experiencing a **stroke**
- Researchers developed “**morphing electronics**” - a flexible material that can potentially transform surgical implants for neurological devices. This material can adapt to a patient's growth, a major challenge in **pediatric medical devices**.
- Use of **machine learning** to decrease daily “retraining” time for **brain-controlled prosthetics**.





COVID-19 Research

Summary of Ongoing NICHD Activities on COVID-19

- **Gestational research assessments for covid-19 (GRAVID)** - Analysis of medical records of up to 24,500 women within NICHD's [Maternal-Fetal Medicine Units Networks](#) to examine maternal and neonatal outcomes for pregnant women with and without SARS-CoV-2 infection
- **Global Research Network: COVID-19 Infection Prevalence During Pregnancy and Impact on Pregnancy Outcomes** - Enrolling 2,000 pregnant women at 8 active international sites to compare maternal, fetal, and neonatal outcomes of women infected and not infected with SARS-CoV-2
- **SARS-CoV-2 and Breast Milk:** [Studies of breast milk](#) as a potential source of viral transmission as well as protective antibodies
- **CARING for Children with COVID** (Collaboration to Assess Risk and Identify loNG-term outcomes for Children with COVID) - Studies on Multisystem Inflammatory Syndrome – Children (MIS-C) and other complications of SARS-CoV-2 related illness coordinated with NHLBI and NIAID; NICHD focuses on [therapeutics](#) through the Pediatric Trials Network
- **Intramural research:** Studies of specific tissues (e.g., placenta) to understand the mechanisms of infection





RADx[™] Radical (RADx-rad)

RADx-rad will support new, non-traditional approaches, including rapid detection devices and home-based testing technologies, that address current gaps in COVID-19 testing. The program will also support new or non-traditional applications of existing approaches to make them more usable, accessible, or accurate. These may lead to new ways to identify the current SARS-CoV-2 virus as well as potential future viruses.

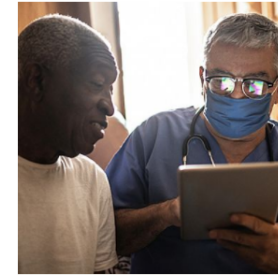
Budget: \$200 Million

Predicting Viral-Associated Inflammatory Disease Severity in children with Laboratory Diagnostics and Artificial Intelligence (PreVAIL kids)

- Develop novel, nontraditional approaches, testing strategies and technologies to ***understand the spectrum of pediatric SARS-CoV-2 illness, rapidly diagnose and characterize MIS-C associated with SARS-CoV-2, and predict the longitudinal risk of disease severity*** after exposure to and/or infection by SARS-CoV-2 to tailor management and optimize health outcome
- Studies must include: Genetics, Omics & Other Biomarkers; Viral Dynamics & Immune Profiling Studies; Digital Health Platforms Leveraged for Children; Artificial Intelligence (AI) & Machine Learning
- Milestone-driven award transition to advance only approaches, strategies and technologies with promise to lead to an accurate and reliable MIS-C prognostic algorithm to enhance the treatment of children
- 8 awards were made in December 2020



RADx-UP Supplements to NICHD Awards



RADxSM Underserved Populations (RADx-UP)

The overarching goal of the RADx-UP initiative is to understand the factors associated with disparities in COVID-19 morbidity and mortality and to lay the foundation to reduce disparities for those underserved and vulnerable populations who are disproportionately affected by, have the highest infection rates of, and/or are most at risk for complications or poor outcomes from the COVID-19 pandemic.

Budget: \$500 Million

- **IDDRC Supplement - Supporting the Health and Well-being of Children with Intellectual and Developmental Disability during COVID-19 Pandemic**
 - Goal: Provide 50,000 saliva-based tests for SARS-CoV-2 students, teachers, and staff in 6 special education schools in St. Louis area and assess national perspectives among parents of children with IDD and school staff regarding its impact
 - Determine the best implementation strategies to maximize the use of an FDA-approved diagnostic test for vulnerable children with IDD in a school setting
- **Safety, Testing/Transmission, and Outcomes in Pregnancy with COVID-19 (STOP-COVID-19 study)**
 - Antibody testing to determine how asymptomatic COVID-19 infection in pregnancy increases risk of adverse pregnancy outcomes



Post Acute Sequelae of COVID-19 (PASC)

- COVID-19 relief bill: \$900 billion total
 - \$1.25 billion for NIH
 - \$1.15 billion to support research and clinical trials related to the long-term effects of COVID-19
- Developing a trans-NIH approach to study PASC
- Children will be considered separately from adults

The New York Times

At 12, She's a Covid 'Long Hauler'

Although most young people recover quickly, doctors are seeing some children and teens with lingering fatigue and other chronic problems.

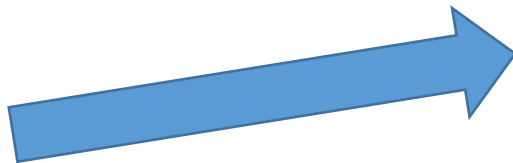




NICHD Strategic Plan Implementation

NICHD Strategic Plan Implementation

- Investing resources based on the Plan's goals
- Prioritizing based on scientific opportunity, resource availability, national health priorities, etc.
- Implementation will remain flexible to accommodate evolving research needs
- Transparency – Report progress to Council and through our website



The screenshot shows the 'Check Our Progress' page of the NICHD Strategic Plan 2020. The page has a navigation bar at the top with links: Home > About NICHD > Organization > NICHD Strategic Plan 2020 > Check Our Progress. On the right side of the navigation bar are 'Share' and 'Print' buttons. The main heading is 'Check Our Progress'. Below the heading is a circular image of a fetus in a womb, with a teal and orange graphic overlay. To the right of the image is a paragraph explaining the five broad research themes of the plan. Below this paragraph is a list of five progress updates, each corresponding to a theme. At the bottom of the main content area, it states: 'We will be updating this website periodically to report on our continued progress.' On the right side of the page, there is a sidebar titled 'NICHD Strategic Plan 2020' with a sub-header 'Explore the Plan'. This sidebar contains several links: Director's Message, Introduction, Scientific Research Themes and Objectives, Aspirational Goals, Scientific Stewardship, Management and Accountability, Appendix I: NICHD Statutory Authority, Appendix II: NICHD Organization and Functions, and Appendix III: Strategic Planning Process. At the bottom of the sidebar, there is a 'Check our Progress' button and a link to 'Progress on Theme 1'.

Home > About NICHD > Organization > NICHD Strategic Plan 2020 > Check Our Progress

Share Print

Check Our Progress

The NICHD Strategic Plan includes five broad research themes that enable us to focus our efforts on the most significant public health challenges and advance science in these priority areas. NICHD scientists and staff have been working since the release of the NICHD Strategic Plan in September 2019 to make the research goals and objectives a reality. To learn about some of our ongoing progress, select from the following themes:

- Progress on Theme 1: Understanding the Molecular, Cellular, and Structural Basis of Development
- Progress on Theme 2: Promoting Gynecologic, Andrologic, and Reproductive Health
- Progress on Theme 3: Setting the Foundation for Healthy Pregnancies and Lifelong Wellness
- Progress on Theme 4: Improving Child and Adolescent Health and the Transition to Adulthood
- Progress on Theme 5: Advancing Safe and Effective Therapeutics and Devices for Pregnant and Lactating Women, Children, and People with Disabilities

We will be updating this website periodically to report on our continued progress.

NICHD Strategic Plan 2020

Explore the Plan

- [Director's Message](#)
- [Introduction](#)
- [Scientific Research Themes and Objectives](#)
- [Aspirational Goals](#)
- [Scientific Stewardship](#)
- [Management and Accountability](#)
- [Appendix I: NICHD Statutory Authority](#)
- [Appendix II: NICHD Organization and Functions](#)
- [Appendix III: Strategic Planning Process](#)

Check our Progress

[Progress on Theme 1](#)



Strategic Plan Progress

- For each Scientific Research Theme, the website includes
 - **Highlighted Programs and Activities**
 - Current funding opportunities, collaborations, or other programs that are responsive to the Strategic Plan goal
 - Not a comprehensive list!
 - **Selected Research Advances**
 - Published NICHD-supported research that is responsive to the Strategic Plan goal
 - Not a comprehensive list!
- Updated regularly during the year

Progress on Theme 5

Advancing Safe and Effective Therapeutics and Devices for Pregnant and Lactating Women, Children, and People with Disabilities

Highlighted Programs and Activities

- **NEW:** Maternal and Pediatric Precision in Therapeutics (MPRINT) Hub
The [MPRINT Hub](#) will serve as a national resource for expertise in maternal and pediatric therapeutics to conduct and foster therapeutics-focused research in obstetrics, lactation, and pediatrics while enhancing inclusion of people with disabilities. By serving as a national resource, MPRINT will disseminate the available knowledge, tools, and expertise in maternal and pediatric therapeutics to the broader research, regulatory science, and drug development communities. Learn more: [RFA-HD-21-025](#) and [RFA-HD-21-026](#).
- **NEW:** Task Force on Research Specific to Pregnant Women and Lactating Women (PRGLAC) Implementation Plan
PRGLAC issued its [implementation plan](#) (PDF 647 KB) to outline the steps necessary to implement its recommendations.

Selected Recent Advances

- [MRI technique could reduce need for radiation in measuring tumor response to chemotherapy in children](#) (PMID: 32368961)
Researchers compared whole-body diffusion-weighted magnetic resonance imaging (DW MRI), which measures the density of tumors by tracking the
- [Personal Protective Equipment \(PPE\) does not hinder pediatric Cardiopulmonary Resuscitation \(CPR\)](#) (PMID: 32483079)
Studies have shown that wearing PPE while performing CPR on adult manikins results in more fatigue and poorer quality chest compressions. However, researchers found no such effect in pediatric CPR; the quality of the compressions and fatigue levels were no different for PPE compared with usual clothing.
- [Effect of metformin treatment differs in gestational diabetes mellitus \(GDM\) and type 2 diabetes](#) (PMID: 31742716)
Researchers showed that the pharmacological response to metformin treatment was significantly different in pregnant women with GDM compared with



Next Steps

- Continue refining implementation plans for Scientific Stewardship and Management & Accountability portions of the plan, for example:
 - Data science
 - Clinical trials management and policy
 - Staff recruitment, retention, and career development activities
- Engage in new activities (and continue ongoing activities) to achieve the Goals and Objectives outlined in each focus area
- Develop metrics and track progress toward meeting Objectives





STrategies to EnRich Inclusion and AchieVe Equity (STRIVE) Initiative

STRIVE Initiative Overview

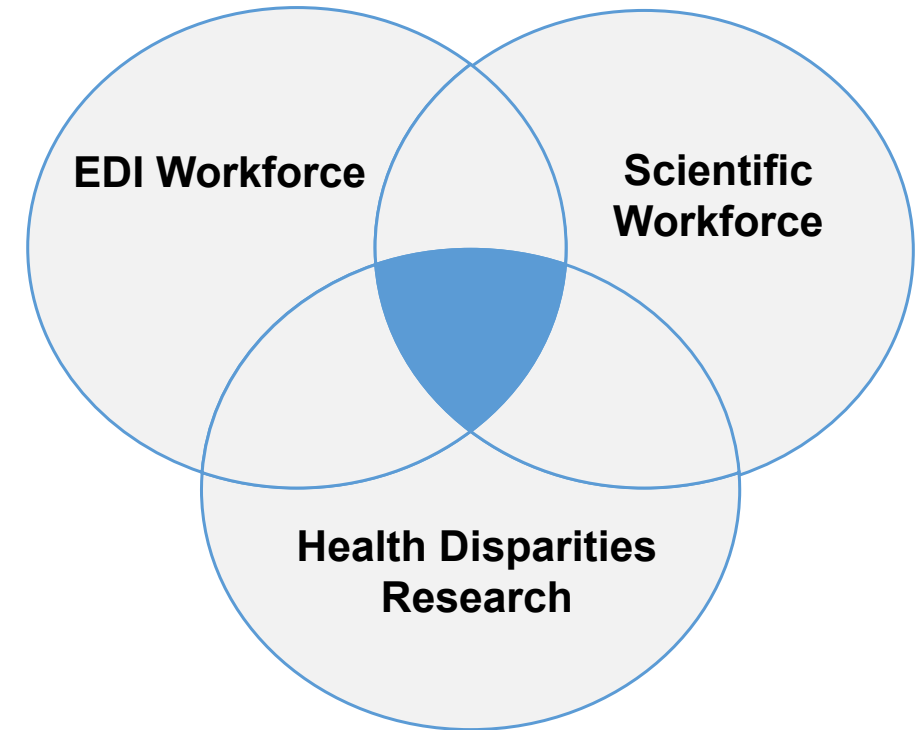
NICHD must do more to address underlying causes of health disparities, including tackling structural racism. We are also committed to diversifying the scientific workforce, both within our institute and in the broader extramural community.

- Effort led by NICHD's Office of Health Equity (OHE)
- Bold, new course forward
- Establish 3 committees to address different aspects of these issues



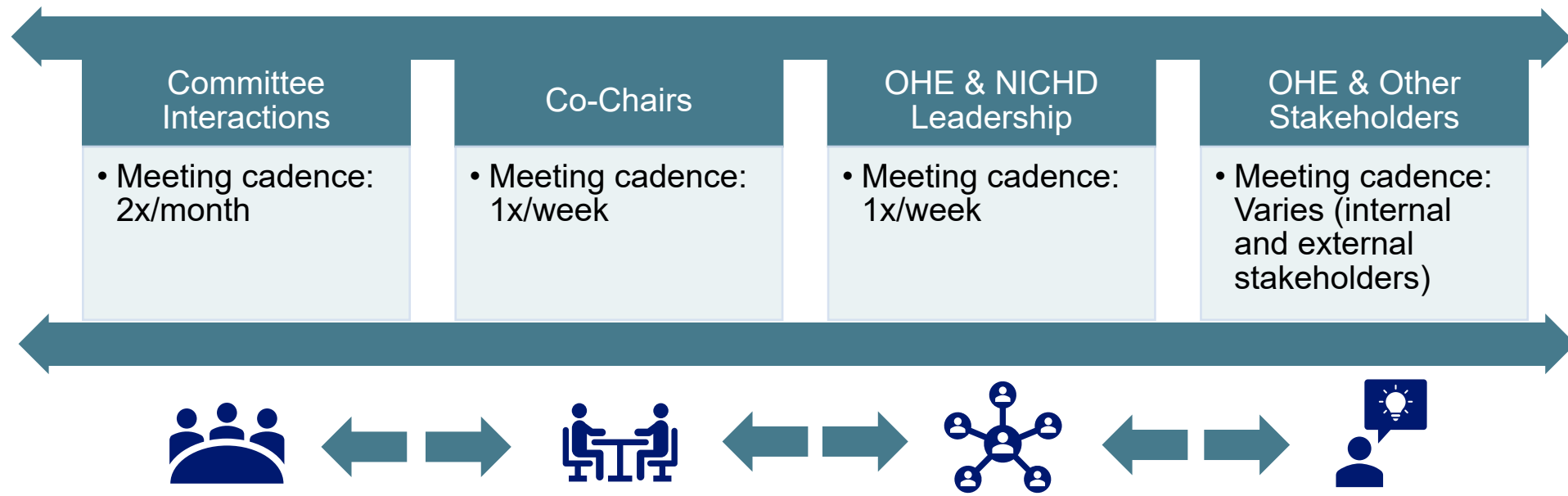
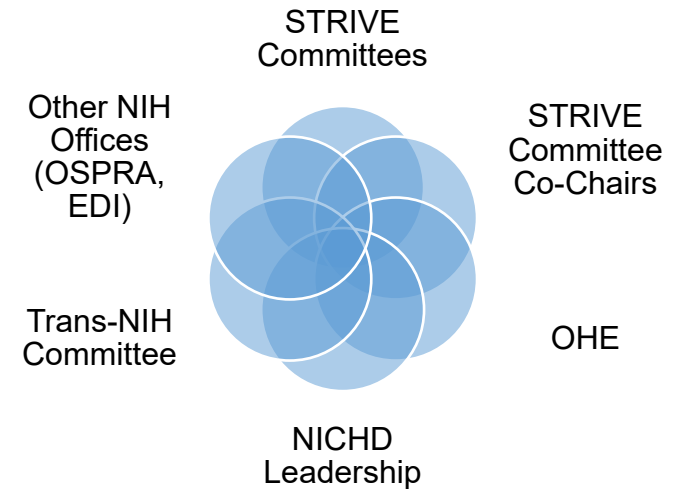
Committees and Goals

- I. **Equity, Diversity and Inclusion in NICHD's Workforce:** Recruit and retain the best talent across all career paths to more fully accomplish our mission
- II. **Scientific Workforce:** Train and support the scientific careers of diverse scientists in the extramural community
- III. **Health Disparities Research:** Encompasses research across intramural and extramural divisions



Committee Interactions

- More than 50 committee members in total
- Staff participation from various career paths, scientific and administrative, with diverse skills sets and viewpoints
- Extensive coordination with trans-NIH effort and other NIH groups
- Consultation with external stakeholders



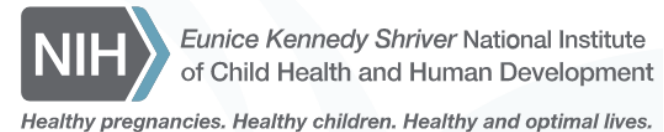
“Encouraged to think boldly and make an impact”



Scientific Workforce: Train and Support Diverse Scientists

New Partnership with Howard University

- Overarching partnership between the NIH Clinical Center and Intramural Research Program and Howard University (March 2019)
- New collaboration between NICHD and Howard University Department of Gynecology & Obstetrics
- First symposium held last week
- Potential collaborative activities:
 - Shared scientific research interests and collaborations
 - Mentorship, training, and professional development/ career exploration opportunities for Howard students and trainees
 - Scientific exchange through educational activities and seminars
 - Howard provides access to patient populations that cannot be cared for at the NIH CC



Workplan and Next Steps for STRIVE

- Workplan: The Committees will
 - Develop three 5-year comprehensive Action Plans
 - Integrate Action Plans into NICHD's 2020 Strategic Plan
 - Evaluate baseline data and collect new data
 - Staff “pulse-check” survey currently active
 - Engage internal and external stakeholders
 - Monitor Action Plan progress and recommend course corrections as needed
- Full presentation to NACHHD Council in June 2021





NICHD Staff Updates

Retirements

- Cynthia Brown, Acquisitions
- Bryan Clark, GMB
- George Giacoia, OPPTB
- Lisa Kaeser, OLPP
- Louis Quatrano, NCMRR
- Clarence Shine, GMB
- Liz Wehr, OSPRA
- Piotr Zelazowski, SRB



Welcome to New NICHD Extramural Staff!



Tessie October
*Physician/Medical
Officer*
PTCIB



Cinnamon Dixon
*Physician/Medical
Officer*
PTCIB



Monica Longo
*Physician; MFM sub-
specialist; Project
Scientist, MFMU*
PPB



Guillermina Girardi
Program Officer
PPB



Welcome to New NICHD Extramural Staff!



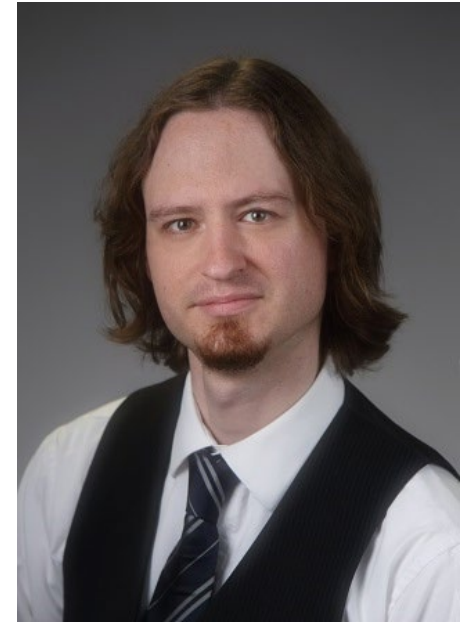
Alicia Ross
Health Specialist
NCMRR



Toyin Ajisafe
Program Officer
NCMRR



Amanda Price
Program Officer
CDBB



Chris Belter
Program Analyst
DER



Welcome to New NICHD Extramural Staff!



Chantell Stevenson-Brown
*Grants Management
Specialist*
GMB



Barbara Hodgkins
*Grants Management
Specialist*
GMB



Yvonne Talley
*Grants Management
Specialist*
GMB



Bettina Buhring
Project Officer
Starting mid-February
IDDB



Welcome to New NICHD OD Staff!



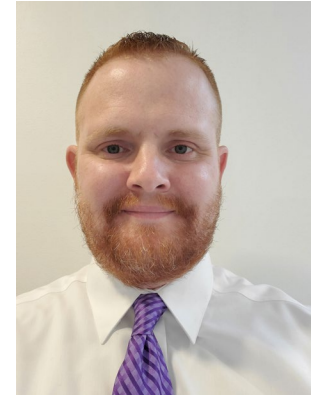
Sybil Philip
*Deputy Executive
Officer*



Jacob Balenson



Lisa Schaupp

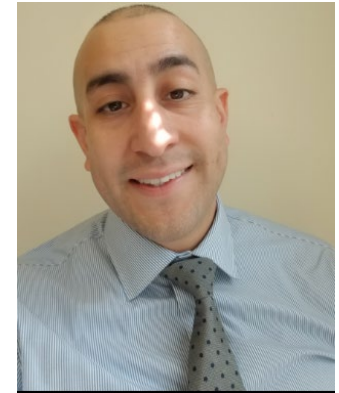


Justin Borden

Office of Acquisitions



Gannon White

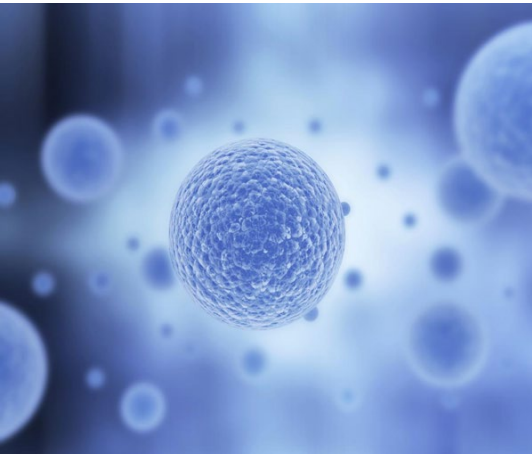


Edwin Osorio



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Check <https://www.nichd.nih.gov/about/jobs>
to find out more!





Thank You!

Questions?