



EMORY  
UNIVERSITY

Office of the Senior  
Vice President for Research

# Another Banner Year!

Fiscal Year 2021 Research Funding Announcement

**Deborah W. Bruner, RN, Ph.D., FAAN**

Senior Vice President for Research  
Robert W. Woodruff Professor of Nursing



Dear Colleagues,

**A**s the fall semester begins, I want to express my appreciation for the courage and dedication shown by the entire Emory community this past year. These past twelve months have witnessed an extraordinary coming together of the Emory research community. As you navigated ongoing changes driven by the COVID-19 pandemic, you continued to advance discovery and innovation, putting your ideas and experience to work in the service of a greater good. Despite the challenges posed by research ramp-down and up, remote work, and a shifting public health landscape, you led with creativity and resilience, forging new partnerships within and beyond Emory and making breakthroughs across the university's signature areas of inquiry.

**It gives me great pleasure to announce that Emory University has reached a new research funding milestone of \$894.7 million during FY21. This represents an increase of 7.6 % over FY20.**

The Office of Research Administration saw an increase in proposal dollars submitted by 2.3% over FY20 and processed approximately 3,669 awards this past year. These numbers mean important financial support for research across schools and centers. More than that, the numbers remind us of the power of constructive collisions—conversations springing up across disciplines that spark new ways of thinking, seeing, and attending to our world.

“Emory faculty members have reached a significant new milestone,” said Emory University Provost Bellamkonda. “This funding achievement testifies the ambition and expertise of our research community. The pandemic hasn’t slowed our progress; rather, it has spurred our research. This significant funding milestone foretells discoveries yet to come from our faculty. These discoveries will impact our health, our climate, our understanding of society, and will help shape our future.”

Emory’s accomplishments in COVID-19 research continue at an accelerated pace. Wilbur Lam and Greg Martin received an additional \$18.2 million from the NIH’s Rapid Acceleration of Diagnostics (RADx) program [to continue their verification of COVID-19 diagnostic tests](#), bringing their total support to \$54 million for RADx projects. Venkat Narayan and his team received a \$5 million NIH grant to [increase COVID-19 testing for people affected by diabetes in Georgia](#), also part of the RADx initiative. Molnupiravir, [an antiviral medication first discovered at Emory’s non-profit drug development company DRIVE](#) (Drug Innovation Ventures at Emory), led by

George Painter, has been shown to reduce SARS-CoV-2 to undetectable levels in COVID-19 patients after five days of administration in early-stage trials. And the Emory-patented anti-inflammatory medication baricitinib, first repurposed by Raymond Schinazi, is [emerging as a major option for treatment of hospitalized patients needing respiratory support](#).

COVID-19 research formed just one part of your achievements this past year. From the basic sciences to the clinical and social sciences, from the performing and creative arts to business and theology, Emory faculty made important advances, often through collaborative projects. Our global footprint continues to grow, with researchers now garnering over \$134.5 million. Investigators in brain health and the neurosciences were awarded approximately \$67.5 million to continue transforming key areas such as Alzheimer’s research and new frontiers in brain-body understanding. Sam Sober and his team received funding from the [Simons Foundation to continue the Simons-Emory International Consortium on Motor Control](#), a consortium of eight research groups working together to address fundamental questions in sensorimotor neuroscience. Emory’s work in cancer has been awarded over \$3.6 million, providing a strong foundation as we move into our competitive renewal in 2022. Emory is also advancing steadily in support for the humanities and the arts, with an estimated \$5.6 million in private and foundation awards this year alone.

None of these gains would be possible without the contributions of faculty, who lead the way from bench to bedside, from the classroom to the community. Emory faculty members continue to receive outstanding awards in their fields, meeting our mission and bringing the university recognition for game-changing research contributions. Examples this year include Denise Jamieson, elected to the National Academy of Medicine; and five Emory faculty members elected to the American Academy of Arts and Sciences: Rafi Ahmed, Carol Anderson, Jericho Brown, Sanjay Gupta, and Vanessa Siddle Walker. At Winship Cancer Institute, we welcomed the appointment of our colleague Suresh S. Ramalingam, thoracic oncologist and expert in small cell and non-small cell lung cancer, as executive director. I hope you will join me in congratulating all these faculty members for their significant achievements.

Research that supports our shared ecological future also made important strides this year. We were thrilled to learn about the [National Science Foundation](#) grant awarded to Justin Burton to expand his lab’s investigations into the complex interactions between glaciers, sea ice, and the ocean—a project that could help predict the effects of climate change on sea-level rise. Emory faculty spearheading the [Georgia Climate Project](#) received [a grant from the Ray C. Anderson Foundation](#) for the next phase of this state-wide consortium, which promises to strengthen Georgia’s ability to prepare for and respond to our changing climate. Eri Saikawa received a grant from the Emory Senior Vice Provost for Research At the Intersection Fund to examine health disparities related to air pollution exposure among Chinese, Indian, and American populations in Atlanta. James Nagy received a [National Science Foundation](#) award in computational mathematics for data science, a project that includes the potential application of the mathematics of deep learning and data assimilation to the weather and environment through hurricane storm surge modeling.

All these successes—and you will find more examples in the pages that follow—could not be accomplished without the dedication and collective spirit of our research community. On behalf of everyone in the Office of Research, thank you for your contributions, your partnerships, and congratulations on another pioneering research year. Together, we can make meaningful discoveries that save and improve lives as we continue strengthening Emory’s reputation as a leading research university.

Regards,

**Deborah W. Bruner, RN, PhD, FAAN**  
Senior Vice President for Research  
Robert W. Woodruff Professor of Nursing



# Research by the Numbers

Data provided here is current as of August 31, 2021. Figures may change slightly due to fiscal year close.

## RESEARCH PROPOSALS

**\$1.4B** Total Dollar Value

**2.3%** Increase Over FY20

## FUNDED RESEARCH AWARDS

**\$894.7M** Total Dollar Value

**7.6%** Increase Over FY20

## FEDERAL FUNDING

**\$598M** Total Funding

**3.7%** Increase Over FY20

## TOP 3 FEDERAL FUNDERS

- 1. National Institute of Health
- 2. Center for Disease Control and Prevention
- 3. National Science Foundation

## CORPORATE FUNDING

**\$85M** Total Funding

**19.9%** Increase Over FY20

## TOP 3 CORPORATE FUNDERS

- 1. Pfizer
- 2. Ceres Nanosciences
- 3. Gilead Sciences

## FOUNDATION FUNDING

**\$134.8M** Total Funding

**52.8%** Increase Over FY20

## TOP 3 FOUNDATION FUNDERS

- 1. Bill and Melinda Gates Foundation
- 2. International AIDS Vaccine Initiative
- 3. Fred Hutchinson Cancer Research Center





# FY21 Research Spotlight



## **Saving Little Lives at Birth // Abebe Gebremariam and John Cranmer**

As part of their work launched by the Emory-Ethiopia partnership, Drs. Gebremariam and Cranmer will share a **\$4.5 million grant from the Global Financing Facility** to reduce infant mortality in Ethiopia through Kangaroo Mother Care (continuous skin-to-skin contact between mother and infant), emergency resuscitation measures, nutritional support, and early recognition and treatment of sepsis. Saving Little Lives at Birth aims to reduce preventable infant deaths using sustainable, locally tailored strategies and evidence-based interventions. It has been named the flagship program of the Ethiopian Ministry of Health, with consortium partners including UNICEF, the World Health Organization, and several Ethiopian universities.

## **Crafting Democratic Futures: Situating Colleges and Universities in Community-based Reparations Solutions // Carol Anderson, Vanessa Siddle Walker, Janeria Easley, and Jessica Stewart**

A team led by Dr. Anderson will participate in a **\$5 million collaborative grant from The Andrew W. Mellon Foundation**, part of its Just Futures Initiative. The three-year project will help build and deploy evidence-based reparations plans for locations in the eastern United States with multiple university collaborators. The Emory team will partner with local experts to understand the long-term effects of slavery, Jim Crow, and ongoing systemic racism on the Black community in metro Atlanta. Team members will use findings to help devise policy recommendations for reparations. The long-term goal includes developing a scalable model for university-community partnerships that promote justice, specifically local reparations.



## **Improving Wastewater-Based COVID-19 Surveillance // Christine Moe, Pengbo Liu, and Leda Bassit**

Dr. Moe, Dr. Liu, and Dr. Bassit are partnering with Ceres Nanosciences on a **\$3 million project to conduct COVID-19 surveillance** through detection of SARS Coronavirus-2 in wastewater. The project is part of a larger \$8.2 million grant from the NIH to test wastewater for SARS-CoV-2. Building on previous wastewater surveillance experience in India (typhoid fever), Ghana (COVID-19), and the Emory campuses (COVID-19), the multidisciplinary team will work with the Atlanta Department of Watershed Management to test wastewater from low-income neighborhoods and institutions in South Atlanta where the COVID-19 burden may be underestimated. The project includes studies of SARS-CoV-2 fecal shedding and infectivity in wastewater to guide interpretation of the wastewater surveillance results. Better testing and surveillance will allow communities to direct resources where most needed as the nation continues to combat the pandemic.



## **Child Health and Mortality Prevention Surveillance (CHAMPS) // Cynthia Whitney**

The CHAMPS team received \$31 million from the Bill & Melinda Gates Foundation for their ongoing mission to reduce child mortality by understanding specific causes of stillbirth or death in children under five worldwide. This latest grant supplement brings the foundation's total investment to \$271 million. CHAMPS provides unique opportunities for faculty, researchers, and students to make key advancements towards the reduction of child mortality globally.



SCIENCE

GALLERY

## **Science Gallery Atlanta exhibit "Hooked" // Deborah W. Bruner**

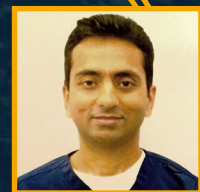
A **\$125,000 grant from the Simons Foundation** will support a 2022 exhibition within Science Gallery Atlanta that focuses on the challenges associated with addiction and recovery, broadly defined. Part exhibit, part experiment, Science Gallery connects young people in creative and dynamic ways to a range of topics in the sciences. "Hooked" will invite artistic contributions and collaborations to create interactive experiences that bring new understanding to dependency—on substances, on social media, and more—in today's world.



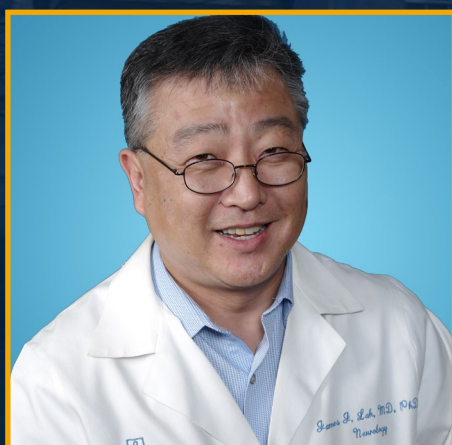


## Understanding the Impacts of Air Pollution Exposure on Respiratory Health Among Races and Immigration Status: Chinese, Indian, and American Populations in Atlanta, Georgia //

Eri Saikawa , Adviteeya Dixit, and Adam Klein



A Phase II Bidirectional Global Health Disparities Research Pilot Grant funded by Emory's Office of the Senior Vice President for Research will allow Drs. Saikawa and Klein to **extend their work** examining the impact of air pollution exposure on the respiratory health of migrant populations in the Atlanta metropolitan area. Air pollution exposure is heavily influenced by the social determinants of health, and in migrant populations, conditions may be exacerbated, including exposure to higher pollution levels. The team will conduct a survey and spirometry measurements of study participants to assess respiratory health and study its relation to air pollution by immigration status across different races.



## Emory Healthy Aging Study and Emory Healthy Brain Study //

James Lah

After pilot grants from The Goizueta Foundation enabled design and early implementation of these two studies within the Emory Brain Health Center, the National Institute on Aging has awarded the studies \$7.1 million this year in federal funding, with total multi-year funding at \$35 million. This support guarantees that the large, longitudinal, trial-ready cohort established by Dr. Lah and his team will be able to continue expediting their research.



## Lightning She Rode: Black Women in Life, History, and Death by Electric Chair //

Kali Gross

Dr. Gross received a **2021 Andrew Carnegie Fellowship** for her work examining the histories of Black women facing capital cases in the United States. Dr. Gross's research draws from archives around the United States to shed new light on the overrepresentation of Black women among persons put to death, especially by the electric chair, in U.S. history. This essential recovery effort fills a critical gap in the study of, and response to, capital punishment in America.

## A community-engaged health needs assessment of South Asians in Atlanta: The CENSAA Study //

Unjali Gujral and Megha Shah

A Phase II Bidirectional Global Health Disparities Research Pilot Grant funded by Emory's Office of the Senior Vice President for Research will allow Drs. Gujral and Shah to **continue their examination** of the cardiometabolic health and risk factors for cardio-metabolic disease among South Asians living in the Atlanta metro area. Building on a population-based survey and ethnographic qualitative data, the team plans to pilot an evidence-based health education intervention aimed at reducing cardio-metabolic risk among the target population. Primary outcomes include feasibility of recruitment, patient acceptance and adherence to the intervention, and identification of barriers and facilitators to implementation.



## The Thriving Congregations Initiative //

Ryan Bonfiglio

Candler School of Theology received a **\$991,221 grant from the Lilly Endowment, Inc.**, to help congregations implement new approaches to community engagement, theological study, and leadership. The grant will have its home within The Candler Foundry, led by Dr. Bonfiglio. Candler's program for public theological education, the foundry focuses on bringing theology and ministry to life outside traditional settings. The grant will support partnerships with churches and communities in and beyond Atlanta, across demographic profiles and denominational lines, with the aim of fostering diverse communities of learning and practice.



## Building Academic-Community Partnerships to Enhance the Mental Health of Ethiopian Adolescents and Young Adults //

Sophia Hussen and Janeria Easley

An estimated 13,000 Ethiopian-born individuals currently live in the Atlanta area, including a growing population of Ethiopian and Ethiopian-American adolescents and young adults who face challenges as they transition to adulthood. A Phase II Bidirectional Global Health Disparities Research Pilot Grant funded by Emory's Office of the Senior Vice President for Research will allow Drs. Hussen and Easley to **continue developing and testing a resilience-based intervention** to enhance mental health for these young adults. Utilizing surveys, community partnerships, diaspora dialogues, and statistical analyses, the team will develop group interventions, build social support, and facilitate the use of mental health services.







### Atlanta Center for Microsystems Engineered Point-of-Care Technologies (ACME POCT) // Wilbur Lam and Greg Martin

Dr. Lam and Dr. Martin received an additional [\\$18.2 million from the NIH's Rapid Acceleration of Diagnostics \(RADx\) program to continue their verification of COVID-19 diagnostic tests](#), bringing their NIH support to a total of \$54 million for RADx projects. The latest grant will allow the Atlanta team to complete their detailed analyses of COVID-19 tests that can be brought to market rapidly. It includes advisement to the NIH on strategies for scaling up testing to assist the public's safe return to normal activities. Together with partners from Georgia Tech's Institute for Electronics and Nanotechnology and Children's Healthcare of Atlanta, the Atlanta team comprises one of the leading point-of-care technologies centers in the nation.



## FY21 Research Highlights

[Alexis Dunn Amore](#) is serving as principal investigator for an NIH study conducted in partnership with the Atlanta Birth Center exploring the postpartum brain-gut microbiome axis and postpartum depressive symptoms (Nell Hodgson Woodruff School of Nursing).

[John Banja](#) received a two-year [grant from the Advanced Radiology Services Foundation](#) to fund research and education in the field of radiology as it relates to the ethics of artificial intelligence (Center for Ethics / School of Medicine).

[Carol Anderson](#), [Jericho Brown](#), and [Vanessa Siddle Walker](#) were elected to the American Academy of Arts and Sciences (Emory College of Arts and Sciences).

[Natalia Salgado Bueno](#) received a [Facebook Research Grant](#) to examine misinformation and polarization within the Brazilian political and news arenas (College).

[Justin Burton](#) received a [National Science Foundation grant](#) to further his lab's investigations into the complex interactions between glaciers, sea ice and the ocean to help predict the effects of climate change on sea level rise (College).

[Susan Brasher](#) is leading multiple research grants aimed at implementing and improving early childhood and language development. Projects include [Talk With Me Baby](#), a national initiative since 2017 (Nursing).

[Christine Calamaro](#) is serving as principal investigator of an [NICHD grant](#) to demonstrate "proof-of-concept" for the ability of the Lightengale IVT, a lighted infusion line, to improve nurse workload in a simulation setting. She is also the PI of a [National Science Foundation grant](#) for developing a lighted infusion line to optimize care for critically ill COVID-19 patients (Nursing).

[Katherine Davis](#) received a four-year Beckman Young Investigator Award that supports promising young faculty members in the early stages of their academic careers in the chemical and life sciences (College).

[Andrea Dittman](#) (Goizueta Business School) and [Melissa Owen](#) (Nursing) received a Nexus Synergy Grant to study resiliency in undergraduate students.

[Angela Dixon](#) is serving as principal investigator for a [Russell Sage Foundation pipeline grant](#) to examine black-white disparities and intergenerational effects of kinship and household mortality. Dr. Dixon is also serving as principal investigator for a [Spencer Foundation racial equity research grant](#) looking at racial disparities in mortality and educational attainment (College).

[Michael Elliott](#) is serving as principal investigator for a [Mellon Foundation grant](#) examining the changing landscape of publications within the humanities (College).



**Francesco Evangelista** is serving as principal investigator of a three-year [Department of Energy Grant](#) to develop software for quantum computers. (College).

**Negar Fani** is leading the primary clinical trial site for a [collaborative NIH grant](#) testing the mechanisms of new mind-body interventions for trauma-related disassociation (SOM).

**Sarah Fankhauser**, Associate Professor of Biology, received an NSF Grant for her project entitled "[Incorporating professional science writing into high school STEM research projects.](#)" (Oxford)

**Eldon Geisert** is serving as principal investigator of a [five-year grant by the National Eye Institute](#) to study a regulatory factor called POU6F2, which modulates central corneal thickness in mice and is a risk factor for glaucoma in humans (SOM/Emory Eye Center).

**Andra Gillespie** is serving as principal investigator for a five-year [Mellon Foundation Renewal Award](#) for the Visiting Scholars Program of the James Weldon Johnson Institute for the Study of Race and Difference. Gillespie is also serving as principal investigator for a two-year [Russell Sage Foundation grant](#) looking at the intersection of COVID-19 and recent police protests (College).

**Peter Hoeyng** received a Halle Foundation grant to expand and support the German Studies Study Abroad program (College).

**Ciannett Howett**, associate vice president for sustainability, resilience and economic inclusion at Emory, was among those receiving [a USDA award to the Working Farms Fund](#), a partnership between [The Conservation Fund](#) and Emory University to support next-generation farmers in Georgia and create a more resilient food system across metro Atlanta (Office of Sustainability).

**Peng Jin** will lead Emory's portion of a [five-year NIH grant](#) to investigate new therapeutic approaches to fragile X syndrome, continuing the work of the [late Stephen Warren](#) (SOM).

**Tayari Jones** won a [Guggenheim fellowship](#) in the fiction category (College).

**Jesse Karlsberg** and **Meredith Doster**, co-administrators of the digital library Sounding Spirit, have received a third grant [from the National Endowment for the Humanities](#) to continue promoting collaborative engagement with southern sacred songbooks (Emory Libraries/College).

**Hank Klibanoff** is serving as principal investigator for a [Center for Civil & Human Rights Truth and Transformation Project](#), via an Arthur M. Blank Foundation grant, in support of the Georgia Civil Rights Cold Cases Project. Klibanoff was also [nominated to the federal Civil Rights Cold Case Review Board](#) by President Joseph Biden (College).

**Allan Levey** and **Nicholas T. Seyfried** are serving as Emory investigators on a [collaborative National Institute on Aging grant](#) that will launch the next version of a public-private partnership that takes an open-data, big science approach to developing Alzheimer's disease therapies (SOM).

**Tianquan "Tim" Lian** will lead Emory's portion of a multi-institute five-year [grant from the US Department of Energy](#) aimed at developing new tools for solar energy conversation (College).

**John Lindo** received a National Science Foundation CAREER Award [to lead investigations of the evolutionary and adaptive histories of Indigenous people of the Americas](#) through his ancient DNA lab (College).

**Lauren McCullough** has received a [grant from the National Cancer Institute](#) to examine drivers of breast cancer recurrence and mortality among women in Georgia (Rollins School of Public Health/Winship Cancer Institute).

**Nadine Matthie** has received grant funding from organizations such as the National Institute of Nursing Research, National Heart, Lung, and Blood Institute, and the Sigma Theta Tau International Honor Society of Nursing. Her latest work incorporates virtual reality as a tool for pain management in sickle cell disease (Nursing).

**James Nagy** received a five-year [National Science Foundation award](#) in computational mathematics for data science (College).

**Ilya Nemenman** won a Simons Investigator Award for theoretical physics in life sciences (College).

**Laura Otis** won a [Guggenheim fellowship](#) in the field of English literature (College).

**Lars Ruthotto** and **Bree Ettinger** received a three-year [National Science Foundation award](#) in computational Mathematics for Data Science (College).

**Ignacio Sanz** received the [William E. Paul Distinguished Innovator Award](#) from the Lupus Research Alliance to investigate mechanisms that induce an autoimmune response among lupus patients (SOM).

**Guido Silvestri** and **Rafick Sékaly** will each head up a collaboratory from the Martin Delaney HIV Cure Collaboratories, the flagship NIH program on HIV cure research. The purpose is to foster dynamic, multidisciplinary collaborations between basic, applied, and clinical researchers studying HIV persistence and developing potential curative strategies (Yerkes).

**David Weiss** and **Bruce Levin** are co-principal investigators of a [grant from the National Institute of Allergy and Infectious Diseases](#) to study heteroresistance, a particular form of antibiotic resistance that undermines treatment of bacterial infections (SOM/College).

**Daniel Weissman**, who specializes in building mathematical models to better understand the rapid evolution of pathogens, has been named a [2021 Sloan Research Fellow](#) (College).

**Deanna Ferree Womack** has received a [Louisville Institute grant](#) to support her upcoming book, "Imaging Islam: Gender, Race and American Protestant Encounters with Muslims" (Candler School of Theology).

**Li Xong** is serving as principal investigator of a [National Science Foundation collaborative grant](#) to develop a real-time contact tracing app for COVID-19 (College).

**Katherine Young** won a [Guggenheim fellowship](#) in the field of music composition (College). Candler School of Theology's receipt of a \$1 million collaborative gift to help establish a [postdoctoral research fellowship in Jain Studies](#). The Bhagawan Arnath Postdoctoral Fellowship in Jain Studies will advance Candler's contributions in interfaith engagement and dialogue, peacebuilding and conflict transformation, and the intersection of faith and ecology. (Candler)