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INVESTING IN BIOMEDICAL RESEARCH AND CAREER DEVELOPMENT

More than 60 years of Investing in Scientists and Biomedical Science

Founded in 1955, the Burroughs Wellcome Fund is an independent private foundation dedicated to advancing the biomedical sciences by supporting research and other scientific and educational activities.

Within this broad mission, BWF seeks to accomplish two primary goals—to help scientists early in their careers develop as independent investigators, and to advance fields in the biomedical sciences that are undervalued or in need of particular encouragement.

BWF’s primary approach is to target individual researchers at degree-granting institutions in the United States and Canada, providing financial support through our competitive, peer-reviewed award programs. In complement to our support of academic research, we also make grants to nonprofit organizations whose missions improve the overall environment for scientific activities and careers.

Above all, BWF establishes relationships and invests in the person. We prioritize the researcher’s individual development—designing awards that enhance opportunities for training, collaboration, and idea-sharing. We then facilitate networks, gatherings, and conversations to further provide awardees with a diverse community of expertise, mentorship, and inspiration.

BWF believes that a diverse scientific workforce is essential to the process and advancement of research innovation, academic discovery, and public service.

Our investment in the person ensures that each award has life beyond any single grant—that creative, original, and unique solutions to biomedical problems will continue to rise throughout an investigator’s career—and in turn, confer good health and strength for all humankind.
"BWF BELIEVES THAT A DIVERSE SCIENTIFIC WORKFORCE IS ESSENTIAL TO THE PROCESS AND ADVANCEMENT OF RESEARCH INNOVATION, ACADEMIC DISCOVERY, AND PUBLIC SERVICE."
AS WE ENTER 2022... WE HAVE LEARNED TO BE FLEXIBLE, RESILIENT, AND MORE APPRECIATIVE OF THE BENEFITS OF A HOLISTICALLY HUMANISTIC WORKSPACE. WE WILL LEVERAGE THIS NEW FOUNDATION FOR CREATIVE ENGAGEMENT AMONG SCIENTISTS, EDUCATORS, ARTISTS, JOURNALISTS, AND THE PUBLIC TO SOLVE THE SOCIETAL CHALLENGES OF TODAY AND TOMORROW.

President’s Message

The Burroughs Wellcome Fund community continues to weather the storm that the pandemic created. From the personal to the professional, we have all been challenged. Here in Research Triangle Park, we are determined and dedicated to move forward and ensure that our mission to serve society continues unabated. We see potential silver linings to the grey clouds of the last two years.

Our staff, for the most part, has worked virtually during this time and we have used this time to enhance our infrastructure and upgrade many of our systems. We are increasing our global connectivity and engagement by enhancing our in-house virtual technology so that we may emerge from the pandemic as a greener foundation. I am extremely proud of the effective way the entire BWF community has come together to ensure efficient, seamless operations of our programs. I am inspired by the innovation that has not only overcome challenges but opened new doorways into the future.

We are fortunate the stock market has remained strong, and our endowment allows us to provide room for philanthropic experiments and to take "risks" in our portfolio. The pandemic has provided an opportunity to be creative in our grantmaking portfolio. We have expanded our Science + Arts funding as well as increased our Science Communication budget. As a result of increased funding capacity, we have been able to provide more awards and enhance our new focus area of Climate Change and Human Health.

Additionally, we have helped support our network of awardees by providing flexible funding and no-cost extensions.

A few highlights:

**Diversity in Science**
Ensuring that we are receiving applications and distributing grants to a broad and diverse audience is critical to the mission of the Fund. We have expanded funding in several grant programs and are continually seeking strategies that consider diversity, equity and inclusion through every mechanism within the Fund.

**Climate Change and Human Health**
Since 2020, we have partnered with the National Academies of Medicine to help fully develop and realize BWF’s role in funding climate change and human health. We have funded pilot grants through the academies and have established an ongoing series of ad hoc grants dedicated to fostering new partnerships among those working in this area.

**Science Communication and Arts**
We have expanded our outreach in Science Communication and Science + Arts. We have contributed funding towards films, theater, an artist-in-residence program, and several
audiocast series. We have partnered with National Geographic to fund two incredible science communicators, Álvaro Laiz and Anand Varma.

Power of Partnerships
We have partnered with The Doris Duke Charitable Foundation and others to support physician-scientists across the United States. During the past year we have established several partnerships with other foundations to reach our goals more effectively. Our involvement with the Science Philanthropy Alliance and the Health Research Alliance have enabled conversations among many science philanthropies and to encourage collaboration and best practices in the field.

As we enter 2022, may we be guided and encouraged by new normal – expanding reach, inclusiveness, and partnerships for engagement, research success and lifelong learning. We have learned to be flexible, resilient, and more appreciative of the benefits of a holistically humanistic workspace. We will leverage this new foundation for creative engagement among scientists, educators, artists, journalists, and the public to solve the societal challenges of today and tomorrow.

Thank you.

Louis J. Muglia, MD, PhD
President and CEO
Burroughs Wellcome Fund

BWF awarded more than $36 million in grants during fiscal year 2021
## FISCAL YEAR 2021

### Competitive Grant Awardees

**Career Award at the Scientific Interface**
- Kevin Dalton, PhD  
  Harvard University
- Rebecca Donegan, PhD  
  Georgia Institute of Technology
- Anne Draelos, PhD  
  Duke University
- Rogelio Hernandez-Lopez, PhD  
  University of California-San Francisco
- Antentor Hinton, PhD  
  University of Iowa Carver College of Medicine
- Christina Hueschen, PhD  
  Stanford University
- Vira Kravets, PhD  
  University of Colorado-Denver
- Ruth Marisol Herrera Perez, PhD  
  Columbia University
- Rebecca Sherbo, PhD  
  Harvard University
- Charlotte Strandkvist, PhD  
  Harvard Medical School
- Longzhi Tan, PhD  
  Stanford University

**Career Awards for Medical Scientists**
- Serine Avagyan, MD, PhD  
  Dana-Farber | Boston Children’s Hospital Cancer and Blood Disorders Center
- Silvia Bernardi, MD  
  Columbia University
- Jeeyeon Monica Cha, MD, PhD  
  Vanderbilt University
- Raghu Ram Chivukula, MD, PhD  
  Massachusetts Institute of Technology
- Erin Conrad, MD  
  University of Pennsylvania
- Carlos Antonio Diaz-Balzac, MD, PhD  
  University of Rochester
- Neir Eshel, MD, PhD  
  Stanford University
- Russell Paul Goodman, MD, DPhil  
  Massachusetts General Hospital
- Brian Christopher Miller, MD, PhD  
  Dana-Farber Cancer Institute
- Rachel Niec, MD, PhD  
  Rockefeller University
- Celestine N. Wanjalla, MD, PhD  
  Vanderbilt University
- Kevin Wei, MD, PhD  
  Brigham and Women’s Hospital

**Graduate Diversity Enrichment Program**
- Ashley Michelle Aguillard  
  University of North Carolina-Chapel Hill
- David Aponte Diaz  
  University of North Carolina-Chapel Hill
- Danielle Marie Brathwaite  
  University of North Carolina-Chapel Hill
- Danielle Leigh Chappell  
  University of North Carolina-Chapel Hill
- Jeliyah Shaquan Clark  
  University of North Carolina-Chapel Hill
- Marta Cristina Cruz Cisneros  
  University of North Carolina-Chapel Hill
- Austin Ogechukwu Maduka  
  Duke University
- Carmen A Marable  
  University of North Carolina-Chapel Hill
- Jamshaid Shahir  
  University of North Carolina-Chapel Hill
- Ellysia Vogt  
  University of North Carolina-Chapel Hill
- Shunafrica White  
  North Carolina A&T State University

**Career Guidance for Trainees**
- American Society for Cell Biology
- BioKansas
- Drexel University
- Sena Institute of Technology Foundation
- University of Nevada-Reno
- University of North Carolina-Chapel Hill School of Pharmacy
- University of Pittsburgh
- University of Tennessee Health Science Center
- Yale University School of Medicine
Innovation in Regulatory Science Award

Amrita Basu, PhD  
University of California-San Francisco

John F P Bridges, PhD  
Ohio State University College of Medicine and Public Health

Abraham Joy, PhD  
University of Akron

Laine Thomas, PhD  
Duke University

Carole Yauk, PhD  
University of Ottawa

Meredith Zozus, PhD  
University of Texas Health Science Center-San Antonio

Investigators in the Pathogenesis of Infectious Disease

Matthew D. Daugherty, PhD  
University of California-San Diego

Lawrence A. David, PhD  
Duke University

Elizabeth S. Egan, MD, PhD  
Stanford University School of Medicine

Gianna E. Hammer, PhD  
Duke University

Timothy W. Hand, PhD  
University of Pittsburgh

Nicholas S. Heaton, PhD  
Duke University School of Medicine

Helen M. Lazear, PhD  
University of North Carolina-Chapel Hill

Sebastian Lourido, PhD  
Massachusetts Institute of Technology

Laura-Isobel McCall, PhD  
University of Oklahoma

Jakob von Moltke, PhD  
University of Washington School of Medicine

John Whitney, PhD  
McMaster University

Next Gen Pregnancy Initiative

Vikki M Abrahams, PhD  
Yale University

William Lee Kraus, PhD  
University of Texas Southwestern Medical Center-Dallas

Diana Monsivais, PhD  
Baylor College of Medicine

Katy Patras, PhD  
Baylor College of Medicine

Joan T. Price, MD  
University of North Carolina-Chapel Hill

Mijo Simunovic, PhD  
Columbia University

Tamara Tilburgs, PhD  
University of Cincinnati

Yong Wang, PhD  
Washington University

Postdoctoral Diversity Enrichment Program

Ismail Abd Al Azim Ahmed, PhD  
New York University

Sada M Boyd, PhD  
University of California-Los Angeles

Simone Andrea Douglas-Green, PhD  
Massachusetts Institute of Technology

Daniel Luis Gonzales, PhD  
Purdue University

Keisha Nicole Hardeman, PhD  
University of Texas Southwestern Medical Center-Dallas

Corine M. Jackman, PhD  
Carnegie Mellon University

Alberto Jose Lopez, PhD  
Vanderbilt University

Nikea Pittman, PhD  
University of North Carolina-Chapel Hill

Maureen McQuirk Sampson, PhD  
Emory University

Ninecia Scott, PhD  
University of Alabama-Birmingham

Kaela S. Singleton, PhD  
Emory University

Dylan James Suvlu, PhD  
Massachusetts Institute of Technology

Tigist Tamir, PhD  
Massachusetts Institute of Technology

Christine Vazquez, PhD  
University of Pennsylvania

Junior West, PhD  
Johns Hopkins University School of Medicine
BIOMEDICAL SCIENCES

CAREER DEVELOPMENT OF BIOMEDICAL SCIENTISTS
BWF is committed to fostering the development of the next generation of biomedical scientists and is committed to supporting degree-granting institutions to achieve this goal. The career development of young scientists has been a major funding theme at BWF and various programs have provided major support to promising young scientists to help them make the transition from late postdoctoral training to early faculty service.

The Career Awards for Medical Scientists (CAMS) was introduced in 2007 to specifically address the declining participation of physicians engaged in academic biomedical research. The CAMS award provides support to facilitate the transition from a mentored position to an independentence for the early career physician scientist. The program is ideal for the physician scientist considering an academic career.

CAMS is a highly competitive program that provides $700,000 in support over five years for physician scientists (MD, DO, DVM, DDS), who are committed to an academic career, to bridge postdoctoral/fellowship training and the early years of faculty service.

Proposals must be in the area of basic biomedical, disease-oriented, or translational research. BWF is also interested in artificial intelligence and machine learning. Proposals in health services research or involving large-scale clinical trials are not eligible. BWF anticipates making up to 10 awards including up to two awards to clinically trained psychiatrists who focus their research at the interface between psychiatry and neuroscience.
CAREER DEVELOPMENT
PROVIDING PROFESSIONAL GUIDANCE
FOR BIOMEDICAL RESEARCHERS
HELPING TRAINEES UNDERSTAND, ACQUIRE, AND DEMONSTRATE SKILLS THAT MAKE THEM READY FOR COMPLEX CAREERS SHOULD BE THE GOAL OF SUBMITTED PROPOSALS.

Career Guidance for Trainees

Moving from training to satisfying employment, whether within academe or in other realms, can require skills not always learned at the bench. Helping trainees understand, acquire, and demonstrate skills that make them ready for complex careers should be the goal of submitted proposals.

The Career Guidance for Trainees (CGT) program provides grants to support demonstration projects that will model affordable, transferable approaches to improving trainees’ readiness for stable, fulfilling careers. For the 2021 round, we will be considering proposals for grants of $15,000 - $25,000. These smaller awards will allow us to make grants to more organizations. This decision was made in the context of COVID-19’s impact on support of career development activities at many institutions.

BWF will support pilot projects that demonstrate practical approaches to readying scientists for career transitions. Projects may be meant to enhance trainees’ understanding of jobs beyond the Academy, or of career trajectories within academe, or of the flexibility of scientists’ intellectual skill set.

CGT aims to advance ideas that have the potential to be deployed at larger scales. FASEB’s Individual Development Plan, a tool that helps structure key conversations between trainee and advisor, and Preparing Future Faculty, a program that provides trainees opportunities to observe and experience faculty responsibilities, are two examples of high impact programs that started small and expanded. By citing them as examples, we mean to encourage potential applicants to think big. In these proposals, send us ideas that could change how an organization like yours thinks about readying trainees for successful, fulfilling, happy careers that reflect the value of a scientific education.
CLIMATE CHANGE AND HUMAN HEALTH

SUPPORTING WORK AT THE INTERSECTION OF
CLIMATE CHANGE AND HUMAN HEALTH
The Burroughs Wellcome Fund Climate and Health Interdisciplinary Award provides support for collaborative exploratory work that opens new ground for comprehensively assessing or mitigating the impacts of climate change on human health. This program will support both individual scientists and multi-investigator teams. Early career faculty and postdoctoral fellows nearing their transition to independence are especially encouraged to apply, either individually or within teams.

Our goal is to prime new discovery in areas that are difficult to reach through discipline-specific, silo-driven approaches. Through this program we will provide flexible funding for conceiving and piloting work that will grow into productive and informative collaborations among researchers approaching connected questions from fields that usually do not interact.

These awards will support research and research coordination to unravel the relationships of climate change and human health. The awards are meant to stimulate development of interdisciplinary and transdisciplinary approaches to problems with interconnected and potentially cumulative impacts on human health in general, and vulnerable populations, specifically.

Projects must draw on the basic or applied biomedical sciences—disciplines ranging from biochemistry to population health, including public health research focused on social justice and equity—collaborating with disciplines beyond biomedicine, for example field ecology, agricultural sciences, veterinary medicine, law, public policy, other applied social sciences, geological and planetary sciences, architecture, engineering, mathematics, communications, or other relevant disciplines appropriate to the research proposed.

Proposals should be driven by broad questions that present significant potential for evidence-based discovery. Proposed aims must be measurable, well-articulated, substantial, achievable, and must include not only planning activities but also scholarly research findings. Projects in environmental health, health disparities, and One Health are competitive for this program when climate change is addressed as a core element. Solutions and insights from both global and hyperlocal viewpoints are of interest.

The Burroughs Wellcome Fund aims to stimulate the growth of new connections between scholars working in largely disconnected fields who might together change the course of climate change’s impact on human health. Over the next two years, we will dedicate $1M to supporting small, early-stage grants of $2,500 – $50,000 toward achieving this goal.

Climate and Health Interdisciplinary Award

Climate Change and Human Health Seed Grants
DIVERSITY IN SCIENCE
ENRICHING BIOMEDICAL RESEARCH
WITH NEW VOICES AND FACES
The Burroughs Wellcome Fund is committed to supporting the next generation of biomedical scientists and researchers. A significant portion of its grant programming includes the career development of young scientists. The existing Postdoctoral Diversity Enrichment Program Award (PDEP) was established to address the continuing lag in the advancement of underrepresented scientists and to position awardees to be more competitive in their pursuit of securing academic and research positions. Enrichment support for underrepresented postdocs has proven to be effective in their career progression. More than 109 awards have been made to early career scientists since the establishment of the Postdoctoral Enrichment Program Award in 2013.

Despite several decades of federally supported programs, racial and ethnic minority Americans continue to be underrepresented among PhD recipients and in the science and engineering workforce. In biomedical sciences, graduate enrollment is 68% white, 12.9% Asian, 5.4% black, 5.9% Hispanic, 7% unknown and less than .5% American Indian. Students with strong SAT scores, high grades and success in high school honors math and science courses often leave the undergraduate college STEM pipeline, and the loss is disproportionate among underrepresented students. BWF seeks to support those underrepresented students who go on to become graduate doctoral students in STEM fields and thus increase the diversity of individuals completing degree requirements and entering postdoctoral programs.

Graduate Diversity Enrichment Program

The Burroughs Funds will support the following:

1. Activities for the graduate student to travel and participate in or present at conferences, workshops, courses and training.

2. Costs associated with the purchase of equipment, materials and supplies related to their research, presentation, short course enrollment, workshops and training.

3. Participation in peer network system of diversity and/or underrepresented graduate students.

The Graduate Diversity Enrichment Program provides a total of $5,000 over two years to provide underrepresented minority PhD students enrolled in NC Institutions of higher education with opportunities for greater science and research enrichment experiences.

ENRICHMENT SUPPORT FOR UNDERREPRESENTED POSTDOCS HAS PROVEN TO BE EFFECTIVE IN THEIR CAREER PROGRESSION.
The Burroughs Wellcome Fund (BWF) is committed to fostering the development of the next generation of biomedical scientists and is committed to supporting only degree-granting institutions to achieve this goal. The career development of young scientists has been a major funding theme at BWF. The continuing lag in advancement of underrepresented minority scientists is a significant problem for the scientific community. Despite several decades of federally supported programs, Americans from these minority populations continue to be underrepresented among PhD recipients and in the science and engineering workforce. Many well-prepared underrepresented minority students—including people of Latino, Native-American, Pacific Island, and African-American descent—are interested in pursuing scientific or engineering careers. Many students with strong SAT scores, high grades, and success in high school honors math and science courses leave the college science pipeline, but the loss is disproportionate among women and minorities. Thus, factors other than school preparation, science aptitude, and interest must be responsible for the low achievement and low persistence of these subgroups of undergraduate and graduate science and engineering students. Identifying and mitigating these negative factors, then retaining well-educated students with Science & Engineering interests would improve the United States’ ability to compete in today’s global scientific community. (SCIENCE, 31 March 2006, Preparing Minority Scientists and Engineers, Michael Summers and Freeman Hrabowski).

For this reason, the Burroughs Wellcome Fund created the Postdoctoral Diversity Enrichment (PDEP) Program in 2012. BWF is committed to funding the next generation of scientists and researchers, thus we have an interest in advancing the careers of underrepresented minority postdoctoral fellows.

The primary goal of PDEP is to substantially enhance the postdoctoral training and experience of underrepresented minority junior scientists. Funds will be provided to support the following enrichment activities:
1. Activities for the postdoctoral fellow to enhance research productivity, e.g. workshops, courses, travel, collaborations, and training in new techniques

2. Activities for the postdoctoral mentor to increase the mentoring of PDEP fellows in university-based programs:
   - Career guidance of the underrepresented minority postdoctoral fellow
   - Research guidance that increases the productivity of the PDEP fellow
   - Attendance at one annual meeting of mentors hosted and/or sponsored by the Burroughs Wellcome Fund

3. Participation in a peer network system of underrepresented minority postdoctoral scholars

PDEP provides a total of $60,000 over three years to support the career development activities for underrepresented minority postdoctoral fellows in a degree-granting institution in the United States or Canada whose training and professional development are guided by mentors committed to helping them advance to stellar careers in biomedical or medical research. Generally, up to 15 awards will be granted for enrichment activities annually. This grant is meant to supplement the training of postdocs whose research activities are already supported. It is not a research grant.

The program provides a total of $60,000 over three years as follows:

Year one: $20,000 will be granted to support enrichment activities of the postdoctoral fellow ($10,000 for research supplies or equipment uniquely required to enhance the postdoctoral fellow’s research and $10,000 for education and training, including for mentors in the research lab where the postdoctoral fellow is assigned.) The PDEP award cannot be used to support salary expenses or indirect costs.

Year two: $20,000 (same allocation as year one)

Year three: $20,000 will be granted to help the postdoctoral fellow advance research efforts towards the professoriate. The funds must be used to develop independent, innovative areas of research.
INFECTION DISEASES
ANSWERING PERSISTING QUESTIONS ON THE MECHANISMS AND NATURE OF HUMAN PATHOGENS
The Investigators in the Pathogenesis of Infectious Disease program provides opportunities for assistant professors to bring multidisciplinary approaches to the study of human infectious diseases. The goal of the program is to provide opportunities for accomplished investigators still early in their careers to study what happens at the points where the systems of humans and potentially infectious agents connect. The program supports research that sheds light on the fundamentals that affect the outcomes of these encounters: how colonization, infection, commensalism and other relationships play out at levels ranging from molecular interactions to systemic ones.

PATH is a competitive award program that provides $500,000 over a period of five years to support accomplished investigators at the assistant professor level to study pathogenesis, with a focus on the interplay between infectious agents and their hosts, shedding light on how both are affected by their encounters. The awards are intended to give recipients the freedom and flexibility to pursue new avenues of inquiry, stimulating higher-risk research projects that hold potential for significantly advancing understanding of how infectious diseases work and how health is maintained.
INTERFACES IN SCIENCE

INVESTING IN CROSS-TRAINED RESEARCHERS TO MAKE TRANSDISCIPLINARY BREAKTHROUGHS
Recognizing the vital role cross-trained scientists will play in furthering biomedical science, the Burroughs Wellcome Fund developed the Career Awards at the Scientific Interface (CASI). This grant is intended to foster the early career development of researchers who are dedicated to pursuing a career in academic research. The ideal applicants are researchers who have transitioned from graduate work in the physical/mathematical/computational sciences or engineering into postdoctoral work in the biological sciences.

The awards provide $500,000 over five years to bridge advanced postdoctoral training and the first three years of faculty service. These awards are open to U.S. and Canadian citizens, permanent residents, or temporary residents.

Scientific advances such as genomics, quantitative structural biology, imaging techniques, and modeling of complex systems have created opportunities for exciting research careers at the interface between the physical/computational sciences and the biological sciences.

Tackling key problems in biology will require scientists trained in areas such as chemistry, physics, applied mathematics, computer science, and engineering. Proposals that include deep or machine learning applications of artificial intelligence are particularly encouraged.

Special consideration will be given to proposals that investigate the connection between climate change and human health.

“THIS GRANT IS INTENDED TO FOSTER THE EARLY CAREER DEVELOPMENT OF RESEARCHERS WHO ARE DEDICATED TO PURSUING A CAREER IN ACADEMIC RESEARCH.”
REGULATORY SCIENCE
KEEPING GOVERNMENT REGULATIONS APACE WITH BIOMEDICAL ADVANCES
The Burroughs Wellcome Fund (BWF) recognizes Regulatory Science as an important yet underfunded area of research. With this initiative, BWF aims to provide research support to stimulate innovation in this area.

The process of translating biomedical discoveries into new therapies has become increasingly complex considering evolving science and technology and requires that the science of regulation keep up with the advances in biomedical science and technology. For example, existing animal models of human disease are often poor predictors of efficacy of new therapeutic approaches in humans. As new technologies produce new types of preclinical models, innovation is needed in the evaluation of these models to justify movement into clinical studies. Although numerous reports have documented the importance of this area of research to the future of the biomedical enterprise, it remains inadequately supported.

Regulatory science has been defined as the “development and use of new tools, standards, and approaches to more efficiently develop products and to more effectively evaluate product safety, efficacy, and quality.” Regulatory science has become a centerpiece of the Food and Drug Administration’s (FDA) strategy for fostering innovation, and the academic and foundation communities have been called to take an active role in building this emerging field. BWF encourages investigators to address regulatory science in areas of the FDA’s strategic priorities including product manufacturing & quality, and food safety & applied nutrition.

BWF’s Innovation in Regulatory Science Awards provides $500,000 over five years to academic researchers developing new methodologies or innovative approaches in regulatory science that will ultimately inform the regulatory decisions made by the FDA and others. This would necessarily draw upon the talents of individuals trained in mathematics, computer science, applied physics, medicine, engineering, toxicology, epidemiology, biostatistics, systems pharmacology, and food safety and nutrition as examples.
Building upon the original goals of the BWF Preterm Birth Initiative, a recently convened Pregnancy Think Tank has helped shape the next generation of BWF preterm birth awards. Growing evidence suggests relationships between the duration of pregnancy, fetal growth, and adverse pregnancy outcomes such as preterm birth, preeclampsia, intrauterine growth restriction, stillbirth, and maternal medical complications including maternal mortality. Other areas of interest are climate change and environmental impact on pregnancy, complications associated with ART, and epigenome-wide association studies. We seek to expand the scope of this award mechanism to capture these and other pregnancy outcomes as we believe they will be mutually informative and accelerate discovery. Each award will provide up to $500,000 over a four-year period ($125,000 per year).

The initiative is designed to stimulate both creative individual scientists and multi-investigator teams to approach healthy and adverse pregnancy outcomes using creative basic and translation science methods. The formation of new connections between reproductive scientists and investigators who are involved in other areas is particularly encouraged. Postdoctoral fellows nearing their transition to independent investigator status through senior established investigators are encouraged to apply.

Molecular and computational approaches such as genetics/genomics, immunology, microbiology, evolutionary biology, mathematics, engineering, and other basic sciences hold enormous potential for new insights independently or in conjunction with more traditional areas of parturition research such as maternal-fetal medicine, obstetrics, and pediatrics. We encourage applications seeking actionable therapeutic interventions, novel diagnostics, and device development for real time data capture, and particularly those investigating mechanisms of racial disparities in pregnancy outcomes.
SCIENCE COMMUNICATION
SUPPORTING A BROAD RANGE OF INITIATIVES AROUND SCIENCE COMMUNICATION AND SCIENCE IN THE ARTS
Since 2020, the Burroughs Wellcome Fund has established science communication as an area of strategic focus and has increased financial investment and commitment in this area. BWF awards noncompetitive grants (ad hocs) for science communication and science in the arts activities. BWF supports a broad range of initiatives around science communication and science in the arts that are ideally aligned with our larger portfolio programs and strategic initiatives.

Proposals should be focused on one or several of the following areas:
- Foster a prioritization of science communication planning and strategy among BWF audiences;
- Promote science journalism and communication to encourage conversations and engagement of science in civic life;
- Strategies to deter misinformation in science communication;
- And initiatives that promote and inspire the wonder, awe, and promise of science.

Proposals must be vetted with the Communications Team (communications@bwfund.org) prior to submission and review.
SCIENCE EDUCATION

EMPOWERING NORTH CAROLINA'S CHILDREN WITH SCIENTIFIC POTENTIAL
The Burroughs Wellcome Fund’s Career Award for Science and Mathematics Teachers recognizes outstanding STEM teachers in the North Carolina public primary and secondary schools.

The award provides $175,000 over five years and is available to North Carolina teachers who have an outstanding performance record in educating children and who demonstrate solid knowledge of STEM content.

This award presents opportunities for professional development and collaboration with other master science and/or mathematics teachers who will help to ensure their success as teachers and their satisfaction with the field of teaching. The award offers schools and school districts the opportunity to fully develop and empower teachers as leaders in the field.

Special consideration will be given to teachers working in hard-to-staff, economically deprived classrooms in North Carolina. Special consideration will also be given to efforts that integrate environmental science and climate change into STEM-related curriculum.

BWF and the State Board of Education recognize that improving STEM education in North Carolina will require systemic revision of K-12 instruction. Teachers who are content-area experts and have pedagogical skills are critical to ensuring students’ success in understanding STEM subjects. These teachers can make a difference by serving as change agents, not only for their students, but also for other educators across the state.

The largest hurdle in accomplishing these goals has been a severe shortage of STEM teachers (even beyond North Carolina’s ongoing teacher shortage). In 2015, only 13 percent of the University of North Carolina system’s 4,675 newly prepared teachers were certified in computer science/technology, science, and mathematics.
BWF supports teaching professionals in their efforts to provide quality hands-on, inquiry-based activities for their students. This award provides up to $3,000 for one year to cover the cost of equipment, materials, and supplies. An additional $1,500 may be requested for professional development related to the implementation of new equipment or use of materials in the classroom. Awards are made to teaching professionals that hold a professional educator’s license to teach in a North Carolina K-12 public school.

BWF recognizes the important role that K-12 teachers play in the lives of students by stimulating a passion for science and mathematics innovations. In this time of tight budgets, BWF wants to support teaching professionals in their efforts to provide quality hands-on, inquiry-based activities for their students. BWF launched this program to support North Carolina K-12 teachers in their efforts to promote excitement for science and mathematics in the classroom by providing grants for materials, equipment, and supplies related to the implementation of high-quality curriculum and activities in the classroom.

Promoting Innovation in Science and Mathematics
The Student STEM Enrichment Program (SSEP) supports diverse programs with a common goal: to enable K-12 students to participate in creative, active learning STEM activities and pursue inquiry-based exploration in BWF’s home state of North Carolina. These awards provide up to $60,000 per year for three years. Since the program’s inception in 1996, BWF has awarded 250 grants totaling $37.7 million to 110 organizations that reach more than 43,000 North Carolina students.

SSEP awards support career-oriented and practical programs intended to provide creative STEM enrichment activities for students in K-12 education who have exceptional skills and interest in science, technology, engineering, and mathematics, as well as those perceived to have high potential.

After school and out of school time programs demonstrate value in helping to close opportunity gaps for underserved and underrepresented students. These programs must enable students to explore inquiry-based approaches to STEM activities, which BWF believes to be an effective way to increase students’ understanding and appreciation of the scientific and inquiry-based method. To increase academic achievement, programs must provide a well-defined structure that aligns with the school-day curriculum, well-trained staff, and student follow up.

**Program Goals**

In line with the mission of the Burroughs Wellcome Fund, projects that are funded under SSEP must seek to attain three goals:

- Improving students’ competence in science and mathematics
- Nurturing student enthusiasm for science and mathematics
- Engaging students in pursuing careers in research or other science-related areas

The activities designed to lead to these goals must align with the North Carolina Standard Course of Study for science and mathematics pertinent to the grade levels of the student participants (see NC Essential Standards). Activities should involve active learning and be inquiry-based.

Additional resources to consider are Next Generation Science Standards and National Council of Teachers of Mathematics.
The Burroughs Wellcome Fund makes noncompetitive grants for activities and career development opportunities for scientists that fall outside of our competitive award programs, but are closely related to our targeted areas.

We place special priority on working with nonprofit organizations, including government agencies, to leverage financial support for our targeted areas of research, and on encouraging other foundations to support biomedical research. Proposals must be vetted with the Communications Team (communications@bwfund.org) prior to submission and review.

Applicants should describe the focus of the activity, the expected outcomes, and the qualifications of the organization or individuals involved; provide certification of the sponsor’s Internal Revenue Service tax-exempt status; and give the total budget for the activity, including any financial support obtained or promised. Proposals are given careful preliminary review, and those deemed appropriate are presented for consideration by BWF’s Board of Directors.
The Burroughs Wellcome Fund’s investments totaled $924.8 million at August 31, 2021, the end of our fiscal year. BWF’s primary financial goal is to pursue an investment strategy that will support annual spending needs and maintain a constant real level of assets over the long term. To achieve this goal, a high percentage of our investments are placed in strategies that derive the bulk of their returns from exposure to U.S. and international capital markets. Hence, fluctuations in BWF’s investment results will be due largely to variability in capital market returns.
BWF’s investment policies are developed with the recommendations and review of the Investment Committee, which is appointed by and reports to BWF’s Board of Directors. The committee, which meets three times a year, has seven voting members, including five representatives from outside BWF and two representatives of our board. The board’s chair, BWF’s president, and BWF’s vice president for finance also serve on the committee as nonvoting members.

As part of BWF’s investment strategy, we have established “allocation targets”—that is, percentages of our total assets to be invested in particular asset classes. Investment managers hired by BWF pursue more focused mandates within each sector. As of the end of the fiscal year, BWF’s asset mix and market values were:

- **U.S. large capitalization equity assets** had a market value of $196.3 million. The sector’s target allocation was 25 percent, and actual holdings stood at 21.2 percent.

- **U.S. small capitalization equity assets** had a market value of $160.5 million. The sector’s target allocation was 18 percent, and actual holdings stood at 17.4 percent.

- **International equity assets** had a market value of $240.2 million. The sector’s target allocation was 32 percent, and actual holdings stood at 26.0 percent.

- **Fixed income assets** had a market value of $130.1 million. The sector’s target allocation was 22 percent, and actual holdings stood at 14.1 percent.

- **Cash equivalent assets** had a market value of $15.2 million. The sector’s target allocation was 3 percent, and actual holdings stood at 1.6 percent.

- **Alternative assets** had a market value of $182.5 million. The sector did not have a target allocation, and actual holdings stood at 19.7 percent. The maximum permitted allocation to alternative assets stood at 20.0 percent at cost.

The total market value of BWF’s investments increased by $149.4 million, or 19.3 percent, from the end of the previous fiscal year. This increase in assets was due mainly to strong returns for world equities during the fiscal year. BWF’s total investment return before investment management fees for the fiscal year was +24.8 percent. The U.S. large capitalization equity sector returned +30.2 percent, the U.S. small capitalization equity sector had a +47.3 percent gain, the international equity sector returned +26.6 percent for the fiscal year, and fixed income produced a +3.7 percent result.

As of August 31, 2021, BWF employed 16 marketable securities investment managers. In the U.S. large capitalization equity sector, the managers were Brown Advisory; LSV Asset Management; and Martingale Asset Management. BMO Asset Management, Loomis Sayles, Bridge City Asset Management and Essex Investment Management managed U.S. small capitalization equities. Camden Asset Management; C.S. McKee; Rimrock Capital Management; Barings; and Amundi Pioneer were the fixed income managers. Capital Guardian Trust Company; Hardman Johnston Global Advisors; Acadian Asset Management; and Hansberger Growth Investors managed international equities. BWF also held investments in four venture capital funds: Intersouth Partners VI, Spray Venture Funds I and II and Mission Ventures II. Winston Partners managed a fund of equity oriented hedge funds. Blackrock Alternative Advisors managed a fund of absolute return strategies. Hamilton Lane Advisors managed five funds of private equity strategies and three private debt strategies. Dyal Capital managed a private equity fund. Neuberger Berman managed an insurance linked strategy and a private equity strategy. Finally, the Fund internally managed a diversified portfolio of mainly passive investments which was named the Tactical Portfolio. The Tactical Portfolio included investments in U.S. equities, international equities and global bonds.
## Statements of Financial Position

**AUGUST 31, 2021 AND 2020 (all dollar amounts presented in thousands)**

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$ 2,547</td>
<td>$ 2,924</td>
</tr>
<tr>
<td>Investments</td>
<td>936,107</td>
<td>778,877</td>
</tr>
<tr>
<td>Accrued interest and dividends receivable</td>
<td>1,262</td>
<td>1,206</td>
</tr>
<tr>
<td>Other assets</td>
<td>146</td>
<td>116</td>
</tr>
<tr>
<td>Property and equipment, net</td>
<td>6,742</td>
<td>7,178</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>$ 946,804</td>
<td>$ 790,301</td>
</tr>
<tr>
<td><strong>LIABILITIES AND NET ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactions payable, net</td>
<td>$ 6,442</td>
<td>$ 4,168</td>
</tr>
<tr>
<td>Accounts payable and other liabilities</td>
<td>1,115</td>
<td>927</td>
</tr>
<tr>
<td>Excise tax payable</td>
<td>1,370</td>
<td>262</td>
</tr>
<tr>
<td>Deferred federal excise taxes</td>
<td>3,533</td>
<td>2,120</td>
</tr>
<tr>
<td>Unpaid awards</td>
<td>110,312</td>
<td>103,118</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>122,772</td>
<td>110,595</td>
</tr>
<tr>
<td>Unrestricted net assets</td>
<td>824,032</td>
<td>679,706</td>
</tr>
<tr>
<td><strong>Total liabilities and net assets</strong></td>
<td>$ 946,804</td>
<td>$ 790,301</td>
</tr>
</tbody>
</table>
## Statements of Activities

**AUGUST 31, 2021 AND 2020 (all dollar amounts presented in thousands)**

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest and dividends, less investment expenses of $3,622 and $3,277 in 2021 and 2020, respectively</td>
<td>$6,120</td>
<td>$6,286</td>
</tr>
<tr>
<td>Net realized gain on sale of investments</td>
<td>75,998</td>
<td>18,560</td>
</tr>
<tr>
<td><strong>Total revenues and realized gains</strong></td>
<td>$82,118</td>
<td>$24,846</td>
</tr>
</tbody>
</table>

| **EXPENSES**           |         |         |
| Program services       | $36,713 | $21,115 |
| Management and general | 7,177   | 6,596   |
| **Total expenses before net unrealized appreciation (depreciation) and deferred federal excise tax** | 43,890  | 27,711  |
| Net unrealized appreciation (depreciation) of investments, net of provision for deferred federal excise tax (expense) / benefit of $(1,413) and $139 in 2021 and 2020, respectively | 106,098 | 43,050  |
| **Change in net assets** | 144,326 | 40,185  |
| **Net assets at beginning of year** | 679,706 | 639,521 |
| **Net assets at end of year** | $824,032 | $679,706 |
**GRANTS INDEX**

**BWF makes all grants to nonprofit organizations.** For most of the programs, the name of the individual on whose behalf the grant is made is listed first, the title of the award recipient’s project is listed second, and the name of the organization that received the money is listed third.

For programs that may have coaward recipients, the award recipients and their organizations are listed first, followed by the project title. For grants made directly to organizations and not on behalf of an individual, the name of the organization is listed first, followed by the title of the project or a brief description of the activity being supported.

In addition to making competitive awards, BWF makes noncompetitive grants—Ad Hocs—for activities that are closely related to our major focus areas. These grants are intended to enhance the general environment for research in the targeted areas.

For full audited financials visit [bwfund.org/annualreport](http://bwfund.org/annualreport)
# Program Summary

**AUGUST 31, 2021**

<table>
<thead>
<tr>
<th>Program</th>
<th>Awarded Net of Cancelled</th>
<th>Amount Paid</th>
<th>Percentage of Total Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIOMEDICAL SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Awards in the Medical Sciences</td>
<td>$ 7,190,000</td>
<td>$ 7,407,100</td>
<td></td>
</tr>
<tr>
<td>Physician-Scientist Institutional Award</td>
<td>–</td>
<td>3,000,000</td>
<td></td>
</tr>
<tr>
<td>Research Travel Grant</td>
<td>6,082</td>
<td>6,082</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>899,823</td>
<td>972,670</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 8,095,905</td>
<td>$ 11,385,853</td>
<td>38%</td>
</tr>
<tr>
<td><strong>DIVERSITY IN SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Diversity Enrichment Program</td>
<td>–</td>
<td>$ 27,500</td>
<td></td>
</tr>
<tr>
<td>Postdoctoral Diversity Enrichment Program</td>
<td>1,009,646</td>
<td>847,862</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>1,172,682</td>
<td>519,314</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 2,180,328</td>
<td>$ 1,394,676</td>
<td>5%</td>
</tr>
<tr>
<td><strong>INFECTIOUS DISEASES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Guidance</td>
<td>$ 252,896</td>
<td>$ 215,401</td>
<td></td>
</tr>
<tr>
<td>Investigators in Pathogenesis of Infectious Disease</td>
<td>5,500,000</td>
<td>4,209,483</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>1,645,075</td>
<td>1,338,075</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 7,397,970</td>
<td>$ 5,762,959</td>
<td>19%</td>
</tr>
<tr>
<td><strong>INTERFACES IN SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Award at the Scientific Interface</td>
<td>$ 5,187,313</td>
<td>$ 3,667,313</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>347,614</td>
<td>419,902</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 5,534,927</td>
<td>$ 4,087,215</td>
<td>14%</td>
</tr>
</tbody>
</table>
## Program Summary
### AUGUST 31, 2021

<table>
<thead>
<tr>
<th>Category</th>
<th>Awarded Net of Cancelled</th>
<th>Amount Paid</th>
<th>Percentage of Total Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REGULATORY SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation in Regulatory Science Awards</td>
<td>$3,025,166</td>
<td>$1,255,166</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>1,130,000</td>
<td>160,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,155,166</td>
<td>$1,415,166</td>
<td>5%</td>
</tr>
<tr>
<td><strong>REPRODUCTIVE SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next Gen Pregnancy Initiative</td>
<td>$4,000,000</td>
<td>$2,162,500</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,000,000</td>
<td>$2,162,500</td>
<td>7%</td>
</tr>
<tr>
<td><strong>SCIENCE AND PHILANTHROPY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>$758,460</td>
<td>$815,655</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$758,460</td>
<td>$815,655</td>
<td>3%</td>
</tr>
<tr>
<td><strong>SCIENCE EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Award for Science and Mathematics Teachers</td>
<td>$700,000</td>
<td>$336,692</td>
<td></td>
</tr>
<tr>
<td>Student STEM Enrichment Program</td>
<td>2,436,297</td>
<td>933,213</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>1,214,539</td>
<td>1,359,539</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,350,836</td>
<td>$2,629,444</td>
<td>9%</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>$36,473,593</td>
<td>$29,653,467</td>
<td>100%</td>
</tr>
</tbody>
</table>
Biomedical Sciences

**Career Awards for Medical Scientists**

**Serine Avagyan, MD, PhD**
Dana-Farber | Boston Children’s Hospital
Cancer and Blood Disorders Center
Hematopoietic stem cell clonal diversity in GATA2 deficiency associated blood disorders

**Silvia Bernardi, MD**
Columbia University
Neural bases of conceptual generalization and transfer learning: mechanisms that go awry in psychiatric illness

**Jeeyeon Monica Cha, MD, PhD**
Vanderbilt University
Understanding sexually dimorphic responses of the pancreatic beta cell in diabetes

**Raghu Ram Chivukula, MD, PhD**
Massachusetts Institute of Technology
Elucidating the Role of Lysosome Dysfunction in Pulmonary Fibrosis

**Erin Conrad, MD**
University of Pennsylvania
Understanding the Role of Somatic Mutations in Severe Adult-Onset Inflammatory Diseases

**Carlos Antonio Diaz-Balzac, MD, PhD**
University of Rochester
Transcriptional regulation of neural circuit formation in intellectual disabilities

**Neir Eshel, MD, PhD**
Stanford University
Dopamine and serotonin at the intersection of reward and aggression

**Russell Paul Goodman, MD, DPhil**
Massachusetts General Hospital
Targeting Hepatic Reductive Stress to Treat Fatty Liver Disease

**Brian Christopher Miller, MD, PhD**
Dana-Farber Cancer Institute
Targeting Myeloid Cells as a Personalized Immunotherapy Approach to Cancer

**Rachel Niec, MD, PhD**
Rockefeller University
Lymphatic regulation of the intestinal stem cell niche

**Celestine N. Wanjalla, MD, PhD**
Vanderbilt University
Understanding the role of CD4+ T helper cells in cardiovascular disease progression in persons with HIV

**Kevin Wei, MD, PhD**
Brigham and Women’s Hospital
Notch3 as a therapeutic target in rheumatoid arthritis

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**Career Guidance**

**Career Guidance for Trainees**

**American Society for Cell Biology**
Rose Hendricks
How People Learn: Supporting Trainees by Supporting Trainers at Scientific Societies

**BioKansas**
Training Culturally Competent Leaders to Improve Equitable and Inclusive Practices

**Drexel University**
TOTAL STEM – Training Opportunities for Assessment and Learning in STEM

**Harvard University**
Online Science Policy Training Platform

**Sena Institute of Technology Foundation**
Entrepreneurial exchange experience for graduate and postdoctoral fellows in Ghana

**University of Nevada-Reno**
Developing a Postdoctoral Academic and Industry Career Empowerment (PAICE) program

**University of North Carolina-Chapel Hill School of Pharmacy**
Micro-Credentials to Support Career Readiness for Pharmaceutical Industry Roles

**University of Pittsburgh**
Career Mentoring and Planning Program

**University of Pittsburgh**
Promoting PEERs: tiered mentoring to foster career development across marginalized student populations

**University of Tennessee Health Science Center**
Interdisciplinary Team Projects to Enhance Career Readiness

**Yale University School of Medicine**
The Intersections Science Fellows Symposium: A multi-institutional collaborative model to diversify the professoriate
Diversity in Science

Graduate Diversity Enrichment Program

Ashley Michelle Aguillard  
University of North Carolina-Chapel Hill

David Aponte Diaz  
University of North Carolina-Chapel Hill

Danielle Marie Brathwaite  
University of North Carolina-Chapel Hill

Danielle Leigh Chappell  
University of North Carolina-Chapel Hill

Jeliyah Shaquan Clark  
University of North Carolina-Chapel Hill

Marta Cristina Cruz Cisneros  
University of North Carolina-Chapel Hill

Austin Ogechukwu Maduka  
Duke University

Carmen A Marable  
University of North Carolina-Chapel Hill

Jamshaid Shahir  
University of North Carolina-Chapel Hill

Ellysa Vogt  
University of North Carolina-Chapel Hill

Shunafrica White  
North Carolina A&T State University

Ismail Abd Al Azim Ahmed, PhD  
New York University

Oxytocin Neuromodulation of Maternal Behavior  
Mentor: Robert Froemke, PhD

Sada M Boyd, PhD  
University of California-Los Angeles

Examining the evolution and interaction of antibiotic and copper resistance in bacteria  
Mentor: Pamela Yeh, PhD

Simone Andrea Douglas-Green, PhD  
Massachusetts Institute of Technology

Characterization and Biological Manipulation of The Protein Corona to Improve Delivery of Cartilage-Penetrating Nanocarriers  
Mentor: Paula Hammond, PhD

Daniel Luis Gonzales, PhD  
Purdue University

A Soft, Nanoscale Neural Interface for Mapping Subcellular Activity  
Mentor: Krishna Jayant, PhD

Keisha Nicole Hardeman, PhD  
University of Texas Southwestern Medical Center-Dallas

The Role of Hepatic Zonation and Metabolic Dysfunction in NAFLD  
Mentor: Shawn Burgess, PhD

Corine M. Jackman, PhD  
Carnegie Mellon University

Demonstrating cell-cell communication in droplets to identify antimicrobials for streptococcal infection  
Mentor: Shelley Anna, PhD

Alberto Jose Lopez, PhD  
Vanderbilt University

Characterizing epigenetic regulation of cocaine-induced neuronal activity and behavioral dysfunction  
Mentor: Erin Calipari, PhD

Nikea Pittman, PhD  
University of North Carolina-Chapel Hill

Defining the complete RclC pathway for Detoxifying Oxidative Stress  
Mentor: Saskia Neher, PhD

Maureen McGuirk Sampson, PhD  
Emory University

Astrocyte Neuroprotection and Inflammation in Developmental Lead (Pb) Exposure  
Mentor: Steven Sloan, MD, PhD

Ninecia Scott, PhD  
University of Alabama-Birmingham

Host-bacterial determinants of cardiac damage and invasive pneumococcal disease  
Mentor: Carlos Orihuela, PhD

Kaela S. Singleton, PhD  
Emory University

Molecular Mechanisms of Pediatric Neurodegeneration  
Mentor: Victor Faundez, MD, PhD

Dylan James Suvlu, PhD  
Massachusetts Institute of Technology

Plasmon Enhanced Quantum Sequencing of DNA  
Mentor: Adam Willard, PhD

Tigist Tamir, PhD  
Massachusetts Institute of Technology

Elucidating the role of tyrosine phosphorylation of metabolic enzymes in hepatocellular carcinoma  
Mentor: Forest White, PhD

Christine Vazquez, PhD  
University of Pennsylvania

Dissecting the mechanisms of EV-D68 neuronal pathogenesis and dissemination  
Mentor: Kellie Jurado, PhD

Junior West, PhD  
Johns Hopkins University School of Medicine

Using mammary organoids to study the apical junctional complex during morphogenesis and breast cancer  
Mentor: Andrew Ewald, PhD
Infectious Diseases

Investigators in the Pathogenesis of Infectious Disease

Matthew D. Daugherty, PhD
University of California-San Diego
Finding the pressure points: Evolution-guided discovery of novel host-virus conflicts

Lawrence A. David, PhD
Duke University
Dietary strategies for enhancing bacterial pathogen resistance in the gut

Elizabeth S. Egan, MD, PhD
Stanford University School of Medicine
Dissecting host-parasite interactions between Plasmodium falciparum and the bone marrow

Gianna E. Hammer, PhD
Duke University
Decoding T cell mediated mechanisms underpinning sterilizing immunity without adverse pathology at mucosal barriers

Timothy W. Hand, PhD
University of Pittsburgh
Mechanisms of tissue resident memory T cell protection against enteric infection

Nicholas S. Heaton, PhD
Duke University School of Medicine
Hormone mediated regulation of antiviral immune responses

Helen M. Lazear, PhD
University of North Carolina-Chapel Hill
Host Range Determinants of Emerging Flaviviruses

Sebastian Lourido, PhD
Massachusetts Institute of Technology
Mapping pathogen coevolution through host diversity

Laura-Isobel McCall, PhD
University of Oklahoma
Role of spatial metabolic heterogeneity in disease tropism

Jakob von Moltke, PhD
University of Washington School of Medicine
Establishment, maintenance, and antigen specificity of T cell memory in helminth infection

John Whitney, PhD
McMaster University
Role of adenosine-containing alarmones in commensal and pathogenic bacteria

Interfaces in Science

Career Awards at the Scientific Interface

Kevin Dalton, PhD
Harvard University
Machine Learning Models for Next Generation X-Ray Diffraction Experiments

Rebecca Donegan, PhD
Georgia Institute of Technology
Heme as a nutrient source at the host-pathogen interface

Anne Draelos, PhD
Duke University
Adaptive Algorithms for Online Neural Modeling

Rogelio Hernandez-Lopez, PhD
University of California-San Francisco
A multiscale quantitative approach for engineering cellular therapies and disease modeling

Antentor Hinton, PhD
University of Iowa Carver College of Medicine
Reimaging, Restoring, and Repurposing Mitochondria and MERC networks

Christina Hueschen, PhD
Stanford University
Physical Biology of Parasites

Vira Kravets, PhD
University of Colorado-Denver
Beta cell networks and neural interactions in healthy and diabetic conditions

Ruth Marisol Herrera Perez, PhD
Columbia University
Engineering models to control cell communication in self-organizing systems

Rebecca Sherbo, PhD
Harvard University
Sustainable food out of thin air

Charlotte Strandkvist, PhD
Harvard Medical School
Studying cell fate decisions and dynamics with time-resolved single cell genomics

Longzhi Tan, PhD
Stanford University
Probing the 3D Chromatin and Spatial Transcriptomic Basis of Neurodevelopment, Social Behaviors, and Autism with Single-cell Precision
Regulatory Science

Innovation in Regulatory Science Award

Amrita Basu, PhD
University of California-San Francisco
*Developing a Toxicity Framework using Patient-Reported Outcomes in Breast Cancer Clinical Trials*

John F P Bridges, PhD
Ohio State University College of Medicine and Public Health
*Advancing methods for measuring patient preferences in regulatory science*

Abraham Joy, PhD
University of Akron
*A screening tool for predicting immune response to polymers designed for soft implantable devices*

Laine Thomas, PhD
Duke University
*Innovative Biostatistical Methods for Analysis and Assessment of Clinical Trials Augmented by Real World Data*

Carole Yauk, PhD
University of Ottawa
*Revolutionizing mutagenicity testing and assessment through the use of a novel error-corrected sequencing technology*

Meredith Zozus, PhD
University of Texas Health Science Center-San Antonio
*Unlocking and Evaluating Real-World Data for Use in Regulatory Decision Making*

Reproductive Science

Next Gen Pregnancy Initiative

Vikki M Abrahams, PhD
Yale University
*Mechanisms regulating fetal membrane and neutrophil responses to infection*

William Lee Kraus, PhD
University of Texas Southwestern Medical Center-Dallas
*A Multi-Omics Approach to Understanding Human Placenta Gene Expression*

Katy Patras, PhD
Baylor College of Medicine
*Characterizing the role of the vaginal microbiota in group B Streptococcus colonization and dissemination*

Joan T. Price, MD
University of North Carolina-Chapel Hill
*Periconception evaluation of the vaginal microbiome and immune response to predict adverse birth outcomes in women with and without HIV*

Mijo Simunovic, PhD
Columbia University
*Dissecting the signaling and biomechanics of embryo implantation and failure using quantitative organoids of early human embryogenesis*

Tamara Tilburgs, PhD
University of Cincinnati
*The role of HLA-G+/C+ extra villous trophoblasts in placental inflammation*

Yong Wang, PhD
Washington University
*Noninvasive Imaging of human myometrial microstructures and electrical contraction patterns during pregnancy*
**Ad Hoc**

**Biomedical Sciences**

**Career Development of Postdoctoral Scientists**
- **American Society for Cell Biology**
  Support for the ASCB CellBio Virtual Annual Meeting, December 2-16, 2020
- **Cincinnati Education and Research for Veterans Foundation, Inc.**
  Support for Gene Dose Mapping in Diseases that Disproportionately Affect Women and Minorities
- **Indiana University**
  Support for The Medical Physician Engineers, Scientists, and Clinicians Preparatory program (MPESC-Prep)
- **International Society for Antiviral Research**
  Support for the 2021 Gertrude Elion Memorial Lecture Award / 34th International Conference on Antiviral Research, March 22-25, 2021
- **Johns Hopkins University School of Medicine**
  Support for Careers in Science and Medicine Initiative Funding
- **Squirrel Monkey Haven**
  Support for the STEM-focused Virtual Educational Outreach by Squirrel Monkey Haven

**Medical Sciences**

**American Foundation for Suicide Prevention**
Support for AFSP's mission to save lives and bring hope to those affected by suicide in lieu of honorarium for CAMS advisory committee member Sarah H. Lisanby, MD (Examining the Neurobiology of Suicidal Behavior in Adolescents)

**Association for Clinical and Translational Science**
Support for the 2021 Translational Science Meeting, March 30 - April 2, 2021

**University of Toronto**
Support for the CITAC Annual General Meeting - "Navigating Uncertainty, Embracing Change, and Empowering the Next Generation of Clinician Scientists", November 12-13, 2020, Toronto, Ontario, Canada

**Vanderbilt University**
Support for the Vanderbilt-Meharry Medical School James Carter Scholars Program: a pilot program to enhance the transition from medical student to physician-scientists and leaders, 2021-2026

**Climate Change**

**The Sylvia Bozeman and Rhonda Hughes EDGE Foundation**
Opportunity for Students from Under-Represented Populations to Build Professional Skills and Networks in Quantitative Life and Earth Sciences at the Interface of Climate Change and Health

**University of North Carolina-Chapel Hill**
Climate and Environmental Change and Preterm Birth

**University of North Carolina-Chapel Hill**
Using the power of place-based, solutions-focused case studies, and hands-on STEM instruction to engage diverse youth in learning about extreme heat in Durham, NC

**University of Tennessee-Knoxville**
A Tasting Menu of Quantitative Modeling for Researchers in the Life and Earth Sciences Tackling the Interface of Climate Change and Health

**Diversity in Science**

**Case Western Reserve University**
International Center for Health Genomics

**Chatham County Schools**
SUPERINTENDENTS OF COLOR FORUM

**Duke University**
Duke Preparing Research scholars In bioMEDical Sciences (PRIME) Program

**Duke University**
LGBTQIA+ Student Engagement

**Duke University**
Graduate Diversity Enrichment Program STEM Outreach

**Duke University**
U.S. Public Perspectives on Race and Genetics

**Massachusetts Institute of Technology**
The Blackwell-Johnson-Banneker Statistics Education Project

**National Association of Academies of Science**
Roundtable on Black Men and Black Women in Science, Engineering, and Medicine

**National Humanities Center**
S.E.E.D. Fellows

**National Paideia Center**
Dialogues on Racial Justice (TIP)

**North Carolina A&T State University**
TriCEM Tiered Mentorship Training Program at NCCU

**NCCU Foundation, Inc.**
BWF - Cheatham White Scholars at NCCU

**NCCU Foundation, Inc.**
TriCEM Tiered Mentorship Training Program

**North Carolina A&T State University**
TriCEM Tiered Mentorship Training Program
North Carolina A&T State University
Funding Support for the LGBT@ Resource Center at NC A&T

North Carolina Mathematics and Science Education Network
Tar Heel Three Minute Thesis (3MT®) Event

North Carolina Museum of Natural Sciences
RACE 2.0 - Phase 3

Public School Forum of North Carolina
The Dudley Flood Center for Educational Equity & Opportunity
Expanding Equitable Access to Educational Opportunities

STEM Next Opportunity Fund
NC Social Impact Racial Equity Community of Practice

University of North Carolina-Chapel Hill
Providing opportunities to showcase student research

University of North Carolina-Chapel Hill
Promoting Environmental Justice and Health Equity in Perinatal Health Research

University of North Carolina-Chapel Hill
Chancellor’s Science Scholars Summer Excellerator

University of North Carolina-Chapel Hill
Graduate Diversity Enrichment Program STEM Outreach

Infectious Diseases

American Society for Microbiology
Support for the 9th American Society for Microbiology (ASM) Conference on Biofilms that will be held in Charlotte, NC on November 14–18, 2021

American Society for Microbiology
Support for 2021 American Society for Microbiology (ASM) Professional Development Initiatives

American Society of Tropical Medicine and Hygiene
Support for the American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Scientific Program at the November 2020 Annual Meeting of the American Society of Tropical Medicine and Hygiene (ASTMH)

American Society of Tropical Medicine and Hygiene
Support for the American Society of Tropical Medicine and Hygiene (ASTMH) 69th Annual Meeting to be held virtually on November 15-19, 2020

American Society of Tropical Medicine and Hygiene
Support for ACMCIP (American Committee of Molecular, Cellular and Immunoparasitology) Scientific Sessions at ASTMH (American Society of Tropical Medicine and Hygiene) 2021 Annual Meeting to be held November 17-21, 2021 in National Harbor, MD

Binning Singletons Inc
Support for “Binning Singletons”

Black Girls Do STEM
Support for the Black Girls Do STEM in lieu of 2021 honoraria to Dr. Thi Nguyen for BWF CGT Advisory Committee service

Center for Open Science
Support for the Center for Open Science in Charlottesville, VA in lieu of 2021 honoraria to Dr. Maryrose Franko for BWF CGT Advisory Committee service

Environmental Mutagenesis and Genomics Society
Support for the 13th International Conference on Environmental Mutagens, “Maintaining Genomic Health in a Changing World” to be held August 27- September 1, 2022 in Ottawa, Ontario, Canada

Federation of American Societies for Experimental Biology
Support for Federation of American Societies for Experimental Biology (FASEB) conference on Microbial Pathogenesis: Mechanisms of Infectious Disease to be held virtually July 13-15, 2021

Genetics Society of America
Support for enhancing accessibility to the 2020 Molecular Parasitology Meeting to be held virtually September 20–24, 2020

Genetics Society of America
Registration fee support for low and middle income country participants to Genetics Society of America (GSA) Conferences to be held virtually in 2021

Georgia Tech Research Corporation
Support for International Biennial Pseudomonas 2021 Conference to be held September 27-October 2, 2021 in Atlanta, GA

Gordon Research Conferences
Support for the Gordon Research Conference, “Collective Behavior 2021” to be held June 6-11 2021 in Newport, RI
Gordon Research Conferences
Support for the 21st Gordon Research Conference on Phagocytes: Phagocyte-Centric Perspective on Health and Disease: From Actin to Zebrafish to be held June 6-11, 2021 at Waterville Valley, NH

Gordon Research Conferences
Support for 2021 Gordon Research Conference on Viruses and Cells to be held May 23-28, 2021 at Rey Don Jaime Grand Hotel site in Spain

Gordon Research Conferences
Support for 2022 Gordon Research Conference (GRC) on Biology of Acute Respiratory Infection on February 26th-March 4th, 2022, at Ventura, CA

Graduate Career Consortium
Support for the GCC Annual Conference Meeting the Moment: Re-evaluating and Reinventing Career and Professional Development: A Virtual Conference for Leaders in Graduate, Postdoctoral Career & Professional Development to be held June 23-25, 2021

Harvard T.H. Chan School of Public Health
Support for connecting parasitologists in a post-pandemic world

Health Care Without Harm
Support for “Health Professionals For Climate Action”

Massachusetts Institute of Technology
Support for “Sustainability and Climate Change Across Learning Environments in STEM: Lifting national environmental literacy through SCALES”

Michigan State University
Support for the 27th annual Midwest Microbial Pathogenesis Conference to be held September 17th – 19th, 2021 at Michigan State University

National Academy of Sciences
Support for the National Academy of Medicine Grand Challenge on Human Health and Climate Change

National Academy of Sciences
Support for the National Academy of Science (NAS) Initiative to Promote Human Rights Responses within the Global Community

National Academy of Sciences
Support to Forum on Microbial Threats

National Academy of Sciences/Institute of Medicine
Support for NAM-BWF Climate Change and Human Health Workshop Series: Connecting Researchers Across Disciplines

St. Louis Community College Foundation
Climate Change Agents’ Guide to Story Mapping

The Inspire Project Inc.
Support for Operation Outbreak (OO), an innovative, multidisciplinary app-based platform that enables experiential learning around infectious disease outbreak for use in STEM education.

Tufts University
Support for enhancing delegate diversity at Clostpath12, the International Conference on the Molecular Biology & Pathogenesis of the Clostridia to be held September 13-16, 2021 in Banff, Canada

University of California-Santa Cruz
Support for “Improving accessibility and usability: We have a virus browser - now what?”

University of California-Santa Cruz
Support for the Bacterial Locomotion and Signal Transduction (BLAST) meeting that will be held virtually January 17-22, 2021

Vanderbilt University Medical Center
Support for the Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4) Artist in Residence (AiR) Program (VI4-AiR)

Yale University
Support for a conference on Climate Change and Health in Small Island Developing States: Focus on the Caribbean to be held virtually October 6-8, 2021

Interfaces in Science

American Indian Science And Engineering Society
Support for the 2021 AISES National Conference, October 15-17, 2021

American Institute of Chemical Engineers

American Physical Society
Support for the APS Inclusion, Diversity, and Equity Alliance

Biomedical Engineering Society
Support for the 2021 BMES Annual Meeting Young Investigator Awards, October 6-9, 2021

Biophysical Society
Support for the Biophysical Society Programs at the virtual 2021 Annual Meeting in February 2021 and throughout the first half of the year

Computational and Systems Neuroscience (Cosyne)
Support for 2021 COSYNE (Computational and Systems Neuroscience) Annual Meeting (virtual)
**Georgia Tech Research Corporation**

**Graduate Center Foundation, Inc.**
Support for the Initiative for the Theoretical Sciences

**Health Research Alliance, Inc. (HRA)**
Support for an intern for the Research Workforce and Early Career Development Working Group

**National Society of Black Engineers**
Support for the Summer Engineering Experience for Kids (SEEK) 2022 Program

**New Venture Fund**
Support for the Open and Equitable Model Funding Program, a collaborative effort among several funds

**Society for Biomaterials**
Supplemental support for the Cato T. Laurencin, M.D., Ph.D., Travel Fellowship through 2022

**Society of Hispanic Professional Engineers**
Support for the BWF Graduate Student Travel Fund

**Society of Women Engineers**
Support for Academic Leadership for Women in Engineering (ALWE), January 8-9, 2021

**University of Michigan-Ann Arbor**
Support for the Robotics PhD Student Coaching Program

**University of Utah**
Support for Rising Stars Postdoc Symposium in 2022 to support faculty diversity in biochemistry

**Vanderbilt University Medical Center**
Support for the Vanderbilt-Meharry PARTNERS COVID-19 Fund to Retain Clinical Scientists

### Regulatory Science

**American Association for Cancer Research (AACR)**
Support for the AACR Special Conference on Artificial Intelligence, Diagnosis, and Imaging, January 11-14, 2021

**American Society for Clinical Pharmacology & Therapeutics**
Support for the ASCPT 2021 Annual Meeting

**American Society of Gene & Cell Therapy**
Support for the Outstanding New Investigator Symposium, ASGCT’s 24th Annual Meeting; May 11-14, 2021

**Everylife Foundation for Rare Diseases**
Support for the 2020 Annual Rare Disease Scientific Workshop, December 15, 2020

**Foundation for Food and Agriculture Research**
Support for the Kirchner Food Fellowship (HBCU Cohort)

**Health Research Alliance, Inc. (HRA)**
General support for 2021-2022 activities

**International Society for Cellular Therapy**
Support for the ISCT 2021 Virtual Annual Meeting

**International Society for Stem Cell Research**
Support for the ISSCR Stem Cells and Conservation Digital Series

### Reproductive Science

**Perinatal Research Society**
Support for the Burroughs Wellcome Fund URM Recruitment Program for the Perinatal Research Society (PRS) Workshop and annual meeting.

**Scripps Research Institute - Florida**
Support for the Placental Glycoscape Summer Undergraduate Intern

**University of California-San Francisco**
Support for Transdisciplinary Research Training to Reduce Disparities in Preterm Birth and Improve Maternal and Neonatal Outcomes: Training in microbiome medicine for minority postdoctoral fellows

**University of Missouri-Columbia School of Medicine**
Support for RSDP Scholar Research Related Expenses 2020-2021

**University of Missouri-Columbia School of Medicine**
Support for RSDP Scholar Research Supplement Expenses 2020-2021

**Vanderbilt University**
Support for the Community Resource to Reveal Mechanisms for Mammalian Birth Timing
Women and Infants Hospital of Rhode Island
Support for Computational Approaches to the Genetics of Complex Diseases: Proteinarium - A network analysis of complex disease

Yale University
Support for three-species model system for menstruation biology

**Science and Philanthropy**

**Communications/Science Writing**

Community Initiatives
Support for Partnership on ComSciCon 2021 Flagship Workshop

EducationNC
Support for general operating expenses for EducationNC’s Focus on STEM

Media Impact Funders
General support for the Media Impact Funders

North Carolina Community Foundation/North Carolina Network of Grantmakers
Support for NCNG Communications Virtual Classroom

Science Talk
Support for the “Resilience in science communication: Science Talk ’21 conference”

The Conversation U.S.
Support for Diversity Driving Discovery

Yale University School of Public Health
Support for Contact: A dialogue about COVID-19 and climate change through live performance

**General Philanthropy**

American Association for the Advancement of Science
Support for the 2021 Mass Media Fellowship

Aspen Institute
Support for the Aspen Global Congress on Scientific Thinking & Action

Children’s Hospital of Pittsburgh Foundation
Support for the Dr. Dena Hofkosh Endowed Fund for Faculty Development, directed by BWF Board Member Terence S. Dermody, M.D.

Food and Environment Reporting Network (FERN)
Support for coverage of Biomedical Research and Science Communication Training

Hopewell Fund
Support for the Science in Society Funder Collaborative

National Humanities Center
Support for the Artificial Intelligence and the Humanities Colloquium

National Postdoctoral Association
Support for the creation of the 2021 National Postdoctoral Association (NPA) Institutional Policy Report

North Carolina Community Foundation/North Carolina Network of Grantmakers
Support for the NCNG Connected Conference. March 2021

North Carolina Sea Grant
Support for North Carolina Science, Technology, Engineering and Mathematics Policy Fellowship

Open Notebook
Support for the TON/BWF Early-career fellowship program

Queen’s University
Support for the Conference on Statistics, Science, and Public Policy

Research!America
Supplemental support for the the Burroughs Wellcome Fund Internship Program

Science Friday Initiative
Support for the project titled “Local Voices, Local Impact: Public Health Stories from the Front Lines of Climate Change”

University of California-Los Angeles
Support for the project “this body is so impermanent…” which provides an artistic framework of the impact of COVID-19 on global humanity and medicine through special programming

**Science Education**

**Science Education**

Afterschool Alliance
STEM Ecosystem VISTA Member Support

Apex Friendship High School
Professional Development; 2021 CASMT Finalist

Cedar Ridge High School
Professional Development: 2021 CASMT Awardee

Chapel Hill - Carrboro City Schools
Education Policy Fellowship Program

Charitable Ventures
Science Education

Cumberland County Board of Education
Support for the Singapore Math Pilot project in Cumberland County schools, including Alderman Road Elementary School, Gray’s Creek Elementary School and Gallberry Farm Elementary School

Durham Colored Library, Inc.
Techies4Tomorrow

Durham Public Schools Foundation
Accelerating Digital Equity Campaign

Grantmakers for Education
Grantmakers for Education Membership Dues
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ADVISORY COMMITTEES

The Burroughs Wellcome Fund uses advisory committees for each competitive award program to review grant applications and make recommendations to BWF’s Board of Directors, which makes the final decisions. We select members of these committees for their scientific and educational expertise in the program areas. In addition, BWF uses a financial advisory committee to help in developing and reviewing the BWF’s investment policies. This committee is appointed by and reports to the Board of Directors.

Biomedical Sciences

Career Awards for Medical Scientists

Derek Abbott, MD, PhD (Co-Chair)
Arline H. and Curtis F. Gavin Professor of Medicine
Department of Pathology
Case Western Reserve University

Geoffrey Aguirre, MD, PhD
Associate Professor of Neurology
University of Pennsylvania Perelman School of Medicine
Department of Neurology
Hospital of the University of Pennsylvania

Chester W. Brown, MD, PhD
St. Jude Chair of Excellence in Genetics
Professor of Division Chief of Genetics
Department of Pediatrics
University of Tennessee Health Science Center

Paul Buckmaster, DVM, PhD
Professor
Dept. of Comparative Medicine
Stanford University

Kathleen H. Burns, MD, PhD
Chair, Department of Pathology
Dana-Farber Cancer Institute
Professor of Pathology
Harvard Medical School

Kathleen Caron, PhD (Co-Chair)
Professor of Cell Biology & Physiology and Genetics
Chair, Dept. of Cell Biology & Physiology
University of North Carolina-Chapel Hill

Jeanine D’Armiento, MD, PhD
Professor of Medicine in Anesthesiology
Director of the Center for Molecular Pulmonary Disease in Anesthesiology and Physiology and Cellular Biophysics
Director, Center for LAM and Rare Lung Disease
Chair, University Senate
Columbia University

Seth Field, MD, PhD
Harrington Discovery Institute
Case Western Reserve University

Leslie J. Berg, PhD
Professor and Chair
Immunology and Microbiology Department
University of Colorado School of Medicine

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Stanford University

Kathleen H. Burns, MD, PhD
Chair, Department of Pathology
Dana-Farber Cancer Institute
Professor of Pathology
Harvard Medical School

Sarah H. Lisanby, MD
Director, Division of Translational Research
Director, Noninvasive Neuromodulation Unit, Experimental Therapeutics and Pathophysiology Branch
National Institute of Mental Health

Heather C. Mefford, MD, PhD
Center for Pediatric Neurological Disease Research
Department of Cellular and Molecular Biology
St. Jude Children’s Research Hospital

W. Kimryn Rathmell, MD, PhD
Cornelius Abernathy Craig Professor of Medicine and Biochemistry
Director, Division of Hematology and Oncology
Vanderbilt University Medical Center

Upinder Singh, MD
Division Chief, Infectious Diseases and Geographic Medicine
Associate Professor, Depts. of Internal Medicine, Microbiology and Immunology
Stanford University School of Medicine

Barry Sleckman, MD, PhD
Professor of Pathology and Laboratory Medicine
Weill Cornell Medical College, Cornell University
Diversity in Science

Postdoctoral Diversity Enrichment Program

Joey V. Barnett, PhD
Professor
Vanderbilt University

Kami Kim, MD (Chair)
Professor
University of South Florida

George M. Langford, PhD
Professor of Biology
Dean Emeritus of the College of Arts and Sciences
Syracuse University

Gina R. Poe, PhD
Professor
University of California-Los Angeles

Michael Summers, PhD
HHMI Investigator Professor of Chemistry and Biochemistry
University of Maryland, Baltimore County

Blanton S. Tolbert, PhD
Professor
Case Western Reserve University

Infectious Diseases

Investigators in the Pathogenesis of Infectious Disease

Craig E. Cameron, PhD
Professor and Chair of Microbiology and Immunology
University of North Carolina-Chapel Hill

Blossom Damania, PhD (Co-Chair)
Professor of Microbiology & Immunology and Vice Dean for Research
University of North Carolina-Chapel Hill

Maurizio Del Poeta, MD
Professor, Department of Molecular Genetics & Microbiology
Stony Brook School of Medicine

Michael S. Diamond, MD, PhD
Professor, Department of Medicine, Molecular Microbiology, Pathology & Immunology
Washington University School of Medicine

Katherine A. Fitzgerald, PhD
Professor, Department of Medicine
University of Massachusetts Medical School

Denise Kirschner, PhD
Professor, Department of Microbiology and Immunology
University of Michigan School of Medicine

Carolina Lopez, PhD
Professor and BJC Investigator in Molecular Microbiology
Washington University School of Medicine

Eric G. Pamer, MD
Director, Duchossois Family Institute
University of Chicago

Barbara Papadopoulou, BPharm, PhD, FCAHS
Professor of Microbiology and Director, Division of Infectious Diseases and Immunity
CHU de Quebec Research Center
Laval University School of Medicine

Eric Skaar, PhD, MPH (Co-Chair)
Director, Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4)
Ernest W. Goodpasture Professor
Vice Chair for Basic Research Chief, Division of Molecular Pathogenesis
Vanderbilt University Medical Center

Vanessa Sperandio, PhD
Professor of Microbiology and Biochemistry
University of Texas Southwestern Medical Center
Interfaces in Science

Career Awards at the Scientific Interface

David Acheson, MD
President and CEO
The Acheson Group, LLC

Sandy Allerheiligen, PhD
Senior Vice President of Health Economics & Education
Certara

Martha Brumfield, PhD
Senior Advisor, Past President and CEO, Critical Path Institute
Associate Professor, College of Pharmacy
University of Arizona

Robert Califf, MD
Head of Clinical Strategy and Policy
Verily Life Sciences and Google Health

Andrea Leonard-Segal, MD
Associate Clinical Professor of Medicine
George Washington University School of Medicine

Wendy R. Sanhai, PhD, MBA
Federal Strategy and Operations
Deloitte Consulting, LLP
Associate Professor (adj) School of Medicine
Duke University
Senior Executive Education Fellow
University of Maryland Robert H. Smith, School of Business

Christy L. Shaffer, PhD
General Partner, Hatteras Venture Partners
Managing Director, Hatteras Discovery

Alastair J.J. Wood, MD (Chair)
Professor of Medicine and Pharmacology
Weill Medical College of Cornell University
Partner, Symphony Capital, LLC

Regulatory Science

Innovation in Regulatory Science

Anne Churchland, PhD
Professor, Department of Neurobiology
University of California-Los Angeles

Todd Coleman, PhD
Professor of Bioengineering
University of California-San Diego

Jennifer Elisseeff, PhD
Professor and Director, Translational Tissue Engineering Center
Wilmer Eye Institute
Depts of Biomedical Engineering, Orthopedic Surgery, Chemical and Biological Engineering, and Materials Science and Engineering
Johns Hopkins University

Loren Frank, PhD
Investigator, Howard Hughes Medical Institute
Professor, Sandler Neurosciences Center
University of California-San Francisco

Robert E. Kass, PhD
Maurice Falk Professor of Statistics and Computational Neuroscience
Department of Statistics, Machine Learning, and the Center for Neural Basis of Cognition
Carnegie Mellon University

Melissa Lambeth Kemp, PhD
Professor
Wallace H. Coulter Department of Biomedical Engineering
Georgia Institute of Technology and Emory University

Andrea Liu, PhD
Hepburn Professor of Physics
Department of Physics and Astronomy
University of Pennsylvania

Alison Marsden, PhD
Associate Professor
Departments of Bioengineering and Pediatrics
Institute for Computational and Mathematical Engineering
Stanford University

Matthew R. Redinbo, PhD
Kenan Distinguished Professor
Departments of Chemistry, Biochemistry, Microbiology and Genomics
University of North Carolina-Chapel Hill

Shyni Varghese, PhD
Professor of Biomedical Engineering, Mechanical Engineering & Materials Science and Orthopaedic Surgery
Duke University
Reproductive Science

Next Gen Pregnancy Initiative

Irina Burd, MD, PhD
Director, Integrated Research Center for Fetal Medicine
Director, Maternal Fetal Medicine Fellowship Program
Professor of Gyn/OB and Neurology
Department of Gynecology and Obstetrics
Johns Hopkins University

Susan Fisher, PhD
Professor
Depts. of Obstetrics, Gynecology and Reproductive Sciences
University of California-San Francisco

Amy P. Murtha, MD
Chair, Dept. of Obstetrics, Gynecology and Reproductive Sciences
University of California-San Francisco

Carole Ober, PhD
Blum-Riese Professor, Chair,
Department of Human Genetics
Department of Obstetrics and Gynecology Committee on Genetics and Systems Biology
University of Chicago

Mana Parast, MD, PhD
Professor Department of Pathology
University of California-San Diego

Hyagriv N. Simhan, MD, MS
Professor, Obstetrics, Gynecology, and Reproductive Sciences
Executive Vice Chair, Obstetrical Services
Director, Patient Care Delivery Innovation and Technology, UPMC
University of Pittsburgh School of Medicine

Jerome F. Strauss, III, MD, PhD (Chair)
Professor of Obstetrics and Gynecology, Human and Molecular Genetics, Biochemistry and Molecular Biology, and Physiology and Biophysics
Virginia Commonwealth University

Science Education

Career Awards for Science and Mathematics Teachers

David Marsland
Science Content Specialist
Discovery Education

Angela Quick, EdD
RTI International

Honorable Bobbie Richardson, EdS
North Carolina General Assembly
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