Diversity Drives Discovery

2020 ANNUAL REPORT
Investing in Biomedical Research and Career Development

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.

More than 60 years of Investing in Scientists and Biomedical Science
BWF believes that a diverse scientific workforce is essential to the process and advancement of research innovation, academic discovery, and public service.
As I began in my new role as President and CEO in January 2020, I recognized the enormous potential that BWF had for even greater scientific impact. However, as it was for everyone on this planet, 2020 was a truly unprecedented year.

The challenges that the COVID-19 pandemic provided reinforced the unique capacity BWF has as an organization to address the issues of most urgent scientific and societal need, be nimble in repurposing activities to continue our work, and support our network of awardees, advisors, and staff.

To paraphrase Denis Diderot: “Genius is present in every age, but the people carrying it within them remained benumbed unless extraordinary events occur to heat up and melt the mass so that it flows forth.” As extraordinary events heated up 2020, genius truly emerged.

In addition to previous award programs, our efforts in terrain mapping prioritized climate change and human health, science communication and data visualization, and further enhancement of the interactions of science and the arts. The past year has further demonstrated the critical importance of each of these themes in moving forward.

The pandemic reflects a dramatic and early instance of the consequences of global climate disruption. Expanded vector, host, and pathogen geographies bring into contact combinations of infectious agents that previously did not occur. Working with the National Academies of Medicine, we have partnered to address climate change at its root causes – reducing carbon footprint due to fossil fuels, identifying avenues in the healthcare sector to reduce environmental impact, fostering climate change communication, and BWF modeling use of green and sustainable resources such as an investment in solar photovoltaics.

To address COVID-19 research directly, we awarded collaborative grants within the existing awardee network to generate innovative approaches to understanding the mechanisms of this disease and thinking about future pandemic prevention.

We recognized the hardships for early career investigators, and provided peer workshops, mentorship, and flexible use of grant awards to keep programs as productive as possible.

All BWF activities shifted to virtual platforms, and these have worked well with support from our meeting professional, Lori Hedrick, working with Barbara Evans, and our IT staff, Sam Caraballo, and Wendell Jones. These events have demonstrated that we can work effectively without extensive travel – and this further serves our goal of reducing our carbon footprint and detrimental environmental consequences.

Diversity, equity, and inclusion is a priority within programs such as the Postdoctoral Enrichment Program, Graduate Diversity Enrichment Program, and other investments such as bringing the RACE 2.0 exhibit to North Carolina and support for the establishment of the Dudley Flood Center for Educational Equity and Opportunity.

As Maya Angelou conveyed: Prejudice is a burden that confuses the past, threatens the future and renders the present inaccessible.

President’s Message
During 2020 we witnessed the profound display of ongoing racism and social injustice as evidence by the death of George Floyd, among others. As an organization, we emerge ignited and determined to work towards a safe and equitable society.

As Maya Angelou conveyed: Prejudice is a burden that confuses the past, threatens the future and renders the present inaccessible.

We now view every activity we are involved in through a DEI lens – the composition of our Board and advisory committees, and the prioritization of requests for funding that include engaging diverse scholars, such as our new partnership with The Conversation to identify scholars of color to communicate their research with a broad audience.

These efforts to strengthen science and society have further motivated us to focus on big, bold goals around climate, racial justice, diversity, and inclusiveness of all types – beyond race, geography, gender, sexual orientation – serving to enrich the discussion, foster solutions, and engage the broad scientific community and the public.

I look forward to the creative programs that will emerge because of the experiences of 2020.

Thank you.

Louis J. Muglia, MD, PhD
President and CEO
Burroughs Wellcome Fund
2020 Highlights

@SCOTTEHENSLEY
“This study wouldn’t have been possible without @BWFUND. The #bwfpath funds allowed us to venture off into a completely new direction. I remember nervously presenting some of these ideas in front of the #bwfpath advisory committee and it is nice to see this story come together!”
JAN 23, 2020

@MORRISTEACH1
“It’s T.O.Y Time! Come on this fun science journey with @totalstemteach! Ms. Ellis is a @BWFUND CASMT awardee from @GastonSchools. In this episode you will learn about digestive system, complete with fun dance and DIY science experiment!”
APR 9, 2020

@MIQUELLACHAVEZ
“Congrats to former CAS! Awardee Paul Blainey and everyone at @broadinstitute for this groundbreaking research!”
MAY 5, 2020

@BWFUND
“Greene County Middle teachers earn STEM Innovation Grant Award - NEUSE NEWS. Matthew Lococo, 7th Grade STEM ELA teacher at GCMS, and Thomas Loftin, GCMS STEM Lab teacher, receive PRISM Grants from the Burroughs Wellcome Fund.”
APR 3, 2020

@BWFUND
“ACC to Deliver ‘Virtual’ Medical Bridge Camp to Young Males”
JUL 14, 2020
Debra J. Holmes
Senior Program Associate
Debra Holmes, Senior Program Associate, retired from the Burroughs Wellcome Fund in 2020 after 20 years of service to the Fund. While at the Fund, Debra managed the Biomedical Research and Reproductive Science portfolio. Debra’s contributions to the Fund’s success are immeasurable and we are grateful for her dedication and many years of service.

@BWFUND
“From @JAMAPediatrics - Association of State-Level Opioid-Reduction Policies With Pediatric Opioid Poisoning”
JUL 18, 2020

@BWFUND
“Jen Alexander-Brett, MD, PhD (2015 CAMS) has spent time on the COVID-19 frontline as a pulm/cc physician. This story has a happy ending. “Pregnant mother of two shares her story of nearly dying from COVID-19.”
AUG 9, 2020

@BWFUND
“Social quarantine has severely impacted the training of new scientists, but the use of virtual platforms can supplement mentorship, making career development seamless.”
DEC 4, 2020

@AMAYS_BWFUND
“#bwfCASMT and #bwfDep in action! #bwfdiversity programming being leveraged across @BWFUND’s award programming.”
NOV 17, 2020

@BWFUND
“Social quarantine has severely impacted the training of new scientists, but the use of virtual platforms can supplement mentorship, making career development seamless.”
DEC 4, 2020

NOV 17, 2020

Debra J. Holmes
Senior Program Associate
Debra Holmes, Senior Program Associate, retired from the Burroughs Wellcome Fund in 2020 after 20 years of service to the Fund. While at the Fund, Debra managed the Biomedical Research and Reproductive Science portfolio. Debra’s contributions to the Fund’s success are immeasurable and we are grateful for her dedication and many years of service.
FISCAL YEAR 2020

Competitive Grant Awardees

Career Award at the Scientific Interface
Ahmed S. Abdelfattah, PhD
Brown University
Zibo Chen, PhD
California Institute of Technology
Yogesh Goyal, PhD
University of Pennsylvania
Elizabeth R. Jerison, PhD
Stanford University
Stephanie E. Lindsey, PhD
Stanford University
Brittany S. Morgan, PhD
TBD
Cristina Rodriguez, PhD
University of California-Berkeley
Julea Vlassakis, PhD
University of California-Berkeley

Career Awards for Medical Scientists
Alexander George Bick, MD, PhD
Harvard Medical School
Julia Catherine Carnevale, MD
University of California-San Francisco
Emily Anne Ferenczi, MB, ChB, PhD
Harvard Medical School
Ryan Alexander Flynn, MD, PhD
Stanford University
Anna Nam, MD
Weill Medical College of Cornell University
Josephine Ni, MD
University of Pennsylvania
Xilma Rosa Ortiz-Gonzalez, MD, PhD
University of Pennsylvania
William Renthal, MD, PhD
Harvard Medical School
Andrew Ben Stergachis, MD, PhD
Harvard Medical School

Career Guidance for Trainees
Coaching for Career Development via the ASPET Mentoring Network
North Carolina State University
The STEM Advocacy Institute
University of Colorado Denver, Anschutz Medical Campus
University of Georgia Research Foundation, Inc.
University of North Carolina-Charlotte
University of Pittsburgh

Investigators in the Pathogenesis of Infectious Disease
Megan T. Baldridge, MD, PhD
Washington University School of Medicine
Brian P. Conlon, PhD
University of North Carolina-Chapel Hill
Gretchen Diehl, PhD
Memorial Sloan Kettering Cancer Center
Asma I. Hatoum, PhD
University of Illinois, Urbana-Champaign
Iliyan D. Iliev, PhD
Weill Medical College of Cornell University
Philip J. Kranzusch, PhD
Harvard Medical School
Anna Marie Selmecki, PhD
University of Minnesota Medical School
Golnaz Vahedi, PhD
University of Pennsylvania
Ivan Zanoni, PhD
Harvard Medical School
Postdoctoral Enrichment Program

Tyler Alexander, PhD
St. Jude Children’s Research Hospital

Shayna T. J. Bradford, PhD
Washington University

Adrian Sergio Enriquez, PhD
Tulane University

Ebony Flowers, PhD
University of Southern California

Monica Gutierrez, PhD
Northwestern University

Joshua Hooks, PhD
Johns Hopkins University

Nisan Michael Hubbard, PhD
University of North Carolina-Chapel Hill

Clifford A Kapono, PhD
University of Hawai‘i-Hilo

Jessica Renee Queen, MD, PhD
Johns Hopkins University School of Medicine

Valeria Marie Reyes Ruiz, PhD
Vanderbilt University

Andrew Santiago-Frangos, PhD
Montana State University

Chelsey Cierra Spriggs, PhD
University of Michigan-Ann Arbor

Jessica Rene Thomas, PhD
Vanderbilt University

Brittany Nicole Williams, DPhil, PhD
University of North Carolina Chapel-Hill
Biomedical Sciences
BWF is committed to fostering the development of the next generation of biomedical scientists.

**Career Award for Medical 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
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.
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 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.

To address access to enrichment opportunities and supporting resources, BWF is committed to funding the next generation of scientists and researchers and seeks to support PhD students in efforts to increase diversity in science. The primary goal of the Graduate Diversity Enrichment Program (GDEP) is to enhance the graduate student experience and provide early exposure to various professional environments and networks for which future research and/or professoriate opportunities might manifest.

Enrichment support for underrepresented postdocs has proven to be effective in their career progression.

**Graduate Diversity Enrichment Program**

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 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.

To address access to enrichment opportunities and supporting resources, BWF is committed to funding the next generation of scientists and researchers and seeks to support PhD students in efforts to increase diversity in science. The primary goal of the Graduate Diversity Enrichment Program (GDEP) is to enhance the graduate student experience and provide early exposure to various professional environments and networks for which future research and/or professoriate opportunities might manifest.

**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.
Postdoctoral Enrichment Program

The Burroughs Wellcome Fund 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 Enrichment 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 the Postdoctoral Enrichment Program (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 (BWF)

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

The Postdoctoral Enrichment Program (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.
Infectious Diseases
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
Career Awards at the Scientific Interface

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.
Regulatory Science
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.
Reproductive Science
Growing evidence suggests relationships between the duration of pregnancy, fetal growth, and adverse pregnancy outcomes.

Next Gen Pregnancy Initiative

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 Education
The award offers schools and school districts the opportunity to fully develop and empower teachers as leaders in the field.

Career Award for Science and Mathematics Teachers

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.
Promoting Innovation in 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.
Student Science Enrichment Program

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.
Science and Philanthropy

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 should be submitted to BWF by email. Mailed requests should be no more than five pages.

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.
Report on Finance

The Burroughs Wellcome Fund’s investments totaled $775.4 million at August 31, 2020, 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 $165.6 million. The sector’s target allocation was 25 percent, and actual holdings stood at 21.4 percent.
- **U.S. small capitalization equity assets** had a market value of $111.2 million. The sector’s target allocation was 18 percent, and actual holdings stood at 14.3 percent.
- **International equity assets** had a market value of $205.6 million. The sector’s target allocation was 32 percent, and actual holdings stood at 26.5 percent.
- **Fixed income assets** had a market value of $130.4 million. The sector’s target allocation was 22 percent, and actual holdings stood at 16.8 percent.
- **Cash equivalent assets** had a market value of $11.5 million. The sector’s target allocation was 3 percent, and actual holdings stood at 1.5 percent.
- **Alternative assets** had a market value of $151.1 million. The sector did not have a target allocation, and actual holdings stood at 19.5 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 $24.2 million, or 3.2 percent, from the end of the previous fiscal year. This increase in assets was due mainly to good returns for world equities during the fiscal year. BWF’s total investment return before investment management fees for the fiscal year was +9.5 percent. The U.S. large capitalization equity sector returned +15.6 percent, the U.S. small capitalization equity sector had a +4.6 percent gain, the international equity sector returned +16.3 percent for the fiscal year, and fixed income produced a +4.7 percent result.

As of August 31, 2019, 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 three funds of private equity strategies and three private debt strategies. Dyal Capital managed a private equity fund. Neuberger Berman managed an insurance linked 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, 2020 AND 2019 (all dollar amounts presented in thousands)**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$2,924</td>
<td>$5,479</td>
</tr>
<tr>
<td>Investments</td>
<td>778,877</td>
<td>746,832</td>
</tr>
<tr>
<td>Accrued interest and dividends receivable</td>
<td>1,206</td>
<td>1,383</td>
</tr>
<tr>
<td>Other assets</td>
<td>116</td>
<td>142</td>
</tr>
<tr>
<td>Property and equipment, net</td>
<td>7,178</td>
<td>7,163</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>$790,301</td>
<td>$760,999</td>
</tr>
<tr>
<td><strong>LIABILITIES AND NET ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactions payable, net</td>
<td>$4,168</td>
<td>$2,639</td>
</tr>
<tr>
<td>Accounts payable and other liabilities</td>
<td>927</td>
<td>1,227</td>
</tr>
<tr>
<td>Excise tax payable</td>
<td>262</td>
<td>551</td>
</tr>
<tr>
<td>Deferred federal excise taxes</td>
<td>2,120</td>
<td>2,259</td>
</tr>
<tr>
<td>Unpaid awards</td>
<td>103,118</td>
<td>114,802</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>110,595</td>
<td>121,478</td>
</tr>
<tr>
<td>Unrestricted net assets</td>
<td>679,706</td>
<td>639,521</td>
</tr>
<tr>
<td><strong>Total liabilities and net assets</strong></td>
<td>$790,301</td>
<td>$760,999</td>
</tr>
</tbody>
</table>
### Statements of Activities

**AUGUST 31, 2020 AND 2019** *(all dollar amounts presented in thousands)*

#### REVENUES

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest and dividends, less investment expenses of $3,277 and $3,079 in 2020 and 2019, respectively</td>
<td>$6,286</td>
<td>$8,417</td>
</tr>
<tr>
<td>Net realized gain on sale of investments</td>
<td>18,560</td>
<td>15,725</td>
</tr>
<tr>
<td><strong>Total revenues and realized gains</strong></td>
<td><strong>$24,846</strong></td>
<td><strong>$24,142</strong></td>
</tr>
</tbody>
</table>

#### EXPENSES

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program services</td>
<td>$21,115</td>
<td>$45,111</td>
</tr>
<tr>
<td>Management and general</td>
<td>6,596</td>
<td>6,061</td>
</tr>
<tr>
<td><strong>Total expenses before net unrealized appreciation (depreciation) and deferred federal excise tax</strong></td>
<td>27,711</td>
<td>51,172</td>
</tr>
<tr>
<td>Net unrealized appreciation (depreciation) of investments, net of provision for deferred federal excise tax benefit of $139 and $421 in 2020 and 2019, respectively</td>
<td>43,050</td>
<td>(21,607)</td>
</tr>
<tr>
<td>Change in net assets</td>
<td>40,185</td>
<td>(48,637)</td>
</tr>
<tr>
<td>Net assets at beginning of year</td>
<td>639,521</td>
<td>688,158</td>
</tr>
<tr>
<td><strong>Net assets at end of year</strong></td>
<td><strong>$679,706</strong></td>
<td><strong>$639,521</strong></td>
</tr>
</tbody>
</table>
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
## Program Summary

**AUGUST 31, 2020**

<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>BIOMEDICAL SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Awards in the Medical Sciences</td>
<td>$6,311,277</td>
<td>$7,603,750</td>
<td></td>
</tr>
<tr>
<td>Physician-Scientist Institutional Award</td>
<td>–</td>
<td>3,750,000</td>
<td></td>
</tr>
<tr>
<td>Research Travel Grant</td>
<td>149,002</td>
<td>140,402</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>723,500</td>
<td>797,500</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$7,183,779</td>
<td>$12,291,652</td>
<td>37%</td>
</tr>
<tr>
<td><strong>DIVERSITY IN SCIENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Diversity Enrichment Program</td>
<td>$–</td>
<td>$27,500</td>
<td></td>
</tr>
<tr>
<td>Postdoctoral Enrichment Program</td>
<td>871,447</td>
<td>791,447</td>
<td></td>
</tr>
<tr>
<td>for Underrepresented Minorities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>170,000</td>
<td>170,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,041,447</td>
<td>$988,947</td>
<td>3%</td>
</tr>
<tr>
<td><strong>INFECTIOUS DISEASES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Guidance</td>
<td>$267,294</td>
<td>$310,805</td>
<td></td>
</tr>
<tr>
<td>Investigators in Pathogenesis of Infectious Disease</td>
<td>4,700,000</td>
<td>5,282,306</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>699,632</td>
<td>981,632</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$5,666,925</td>
<td>$6,574,742</td>
<td>20%</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>$4,297,857</td>
<td>$3,672,095</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>508,500</td>
<td>76,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$4,806,357</td>
<td>$3,748,095</td>
<td>11%</td>
</tr>
<tr>
<td><strong>POPULATION SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum Development in Quantitative Thinking</td>
<td>$–</td>
<td>$225,000</td>
<td></td>
</tr>
<tr>
<td>Institutional Program Unifying Population and Laboratory-Based Sciences</td>
<td>–</td>
<td>812,378</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$–</td>
<td>$1,037,378</td>
<td>3%</td>
</tr>
</tbody>
</table>
## Program Summary
### AUGUST 31, 2020

<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>$ 200,000</td>
<td>$ 2,146,558</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>146,500</td>
<td>146,500</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 346,500</td>
<td>$ 2,293,058</td>
<td>7%</td>
</tr>
<tr>
<td><strong>REPRODUCTIVE SCIENCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preterm Birth Initiative</td>
<td>$ 172,448</td>
<td>$ 1,800,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 172,448</td>
<td>$ 1,800,000</td>
<td>5%</td>
</tr>
<tr>
<td><strong>SCIENCE AND PHILANTHROPY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>$ 1,024,795</td>
<td>$ 618,600</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 1,024,795</td>
<td>$ 618,600</td>
<td>2%</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>$ 96,692</td>
<td>$ 455,000</td>
<td></td>
</tr>
<tr>
<td>PRISM Award</td>
<td>206,424</td>
<td>202,605</td>
<td></td>
</tr>
<tr>
<td>Student STEM Enrichment Program</td>
<td>120,354</td>
<td>1,977,253</td>
<td></td>
</tr>
<tr>
<td>Ad Hoc</td>
<td>963,394</td>
<td>1,061,394</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 1,386,864</td>
<td>$ 3,696,252</td>
<td>11%</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>$ 21,629,114</td>
<td>$33,048,724</td>
<td>100%</td>
</tr>
</tbody>
</table>
Biomedical Sciences

Career Awards for Medical Scientists

**Alexander George Bick, MD, PhD**
Harvard Medical School
Targeting clonal hematopoiesis using human genetics

**Julia Catherine Carnevale, MD**
University of California-San Francisco
Targeting SOCS1 and RASA2 to engineer more potent adoptive T cell therapies for cancer treatment

**Emily Anne Ferenczi, MB, ChB, PhD**
Harvard Medical School
Direct projections from globus pallidus externa (GPe) to cortex: a novel role in basal ganglia-cortical circuit function

**Ryan Alexander Flynn, MD, PhD**
Stanford University
Defining the regulation of RNA by glycosylation

**Anna Nam, MD**
Weill Medical College of Cornell University
Defining the impact of somatic mutations on human hematopoiesis via single-cell multi-omics

**Josephine Ni, MD**
University of Pennsylvania
Determinants of bacterial biofilm formation at the intestinal mucosal interface and their roles in pathogen exclusion

**Xilma Rosa Ortiz-Gonzalez, MD, PhD**
University of Pennsylvania
Looking at Neurodegenerative Disorders Through a Pediatric Lens

**William Renthal, MD, PhD**
Harvard Medical School
Leveraging single-cell genomics for the development of novel pain treatments

**Andrew Ben Stergachis, MD, PhD**
Harvard Medical School
Single-molecule chromatin architectures of disease-associated non-coding genetic variants

Career Guidance

Career Guidance for Trainees

**Advancing PhD Careers Through Industry Immersion**
Coaching for Career Development via the ASPET Mentoring Network

**Accelerate to Industry (A2i) Consortium**
North Carolina State University

**Bench 2 Outreach**
The STEM Advocacy Institute

**A Framework for PhD Career Transitions**
University of Colorado Denver, Anschutz Medical Campus

**Exploring Pathways to Industry Careers (EPIC) Demonstration Project**
University of Georgia Research Foundation, Inc.

**STEM Communication Fellows Program**
University of North Carolina-Charlotte

**Lowering Barriers to Career Exploration by Biomedical PhD Students**
University of Pittsburgh
Diversity in Science

Postdoctoral Enrichment Program

Tyler Alexander, PhD
St. Jude Children's Research Hospital
Brain volume loss after intrathecal methotrexate and oral dexamethasone in a juvenile mouse model of childhood ALL chemotherapy
Mentor: Kevin Krull, PhD

Shayna T. J. Bradford, PhD
Washington University
Targeting failed proximal tubule repair to spur kidney regeneration
Mentor: Benjamin Humphreys, MD, PhD

Adrian Sergio Enriquez, PhD
Tulane University
Mapping of Lassa Virus Polyclonal Antibody Response in Humans and Rodents using Rapid Electron Microscopy
Mentor: Erica O. Saphire, PhD

Ebony Flowers, PhD
University of Southern California
PPAR-regulated Fatty Acid Oxidation and ROS detoxification in Breast Cancer CTCs during Lung Metastasis
Mentor: Min Yu, MD, PhD

Monica Gutierrez, PhD
Northwestern University
Defining an epigenomic signature of myeloid skewing in hematopoietic stem cells as a risk factor for disease in aging
Mentor: Deborah Winter, PhD

Joshua Hooks, PhD
Johns Hopkins University
Determining the presence and functions of monocyte subpopulations in biomaterial influenced wound environments using single cell RNA-seq
Mentor: Jennifer Elisseef, PhD

Nisan Michael Hubbard, PhD
University of North Carolina-Chapel Hill
Lymphatic Development Response During Implantation
Mentor: Kathleen Caron, PhD

Clifford A Kapono, PhD
University of Hawaii - Hilo
Multi-omic Characterization of Coral Mucus During Sediment Disturbances
Mentor: John Burns, PhD

Jessica Renee Queen, MD, PhD
Johns Hopkins University School of Medicine
Fusobacterium Nucleatum Pathogenicity and Carcinogenesis in Colorectal Cancer
Mentor: Cynthia Sears, MD

Valeria Marie Reyes Ruiz, PhD
Vanderbilt University
Defining the battle for manganese between Staphylococcus aureus and the host
Mentor: Eric Skaar, PhD

Andrew Santiago-Frangos, PhD
Montana State University
Regulatory mechanisms of CRISPR evolution and expression
Mentor: Blake Wiedenheft, PhD

Chelsey Cierra Spriggs, PhD
University of Michigan-Ann Arbor
The role of cellular motors in polyomavirus nuclear entry
Mentor: Billy Tsai, PhD

Jessica Rene Thomas, PhD
Vanderbilt University
Somatosensory function in mice with CaMKII mutations linked to autism
Mentor: Roger Colbran, PhD

Brittany Nicole Williams, DPhil, PhD
University of North Carolina Chapel-Hill
Base Editing Approaches to Treat Retinitis Pigmentosa
Mentor: Benjamin Philpot, PhD
**Interfaces in Science**

**Career Awards at the Scientific Interface**

- **Ahmed S. Abdelfattah, PhD**
  Brown University
  Probing and manipulating the neural circuitry of opiate addiction using novel optogenetic tools

- **Zibo Chen, PhD**
  California Institute of Technology
  Molecular programming using de novo designed proteins

- **Yogesh Goyal, PhD**
  University of Pennsylvania
  Biochemical trajectories guiding rare cell plasticity and therapy resistance in single cancer cells

- **Elizabeth R. Jerison, PhD**
  Stanford University
  Migration and population dynamics in the zebrafish adaptive immune system

- **Stephanie E. Lindsey, PhD**
  Stanford University
  Quantitation of early great vessel growth and remodeling

- **Brittany S. Morgan, PhD**
  TBD
  Cracking the molecular recognition code: capturing dynamic substructures with small molecules

- **Cristina Rodriguez, PhD**
  University of California - Berkeley
  Decoding spinal cord neural circuits through advanced optical imaging methods

- **Asma I. Hatoum, PhD**
  University of Illinois, Urbana-Champaign

- **Iliyan D. Iliiev, PhD**
  Weill Medical College of Cornell University

- **Philip J. Kranzusch, PhD**
  Harvard Medical School

- **Anna Marie Selmecki, PhD**
  University of Minnesota Medical School

- **Golnaz Vahedi, PhD**
  University of Pennsylvania

- **Ivan Zanoni, PhD**
  Harvard Medical School

**Infectious Diseases**

**Investigators in the Pathogenesis of Infectious Disease**

- **Megan T. Baldridge, MD, PhD**
  Washington University School of Medicine

- **Brian P. Conlon, PhD**
  University of North Carolina-Chapel Hill

- **Gretchen Diehl, PhD Gretchen Diehl, PhD**
  Memorial Sloan Kettering Cancer Center

- **Elizabeth R. Jerison, PhD**
  Stanford University
  Migration and population dynamics in the zebrafish adaptive immune system

- **Stephanie E. Lindsey, PhD**
  Stanford University
  Quantitation of early great vessel growth and remodeling

- **Brittany S. Morgan, PhD**
  TBD
  Cracking the molecular recognition code: capturing dynamic substructures with small molecules

- **Cristina Rodriguez, PhD**
  University of California - Berkeley
  Decoding spinal cord neural circuits through advanced optical imaging methods

- **Asma I. Hatoum, PhD**
  University of Illinois, Urbana-Champaign

- **Iliyan D. Iliiev, PhD**
  Weill Medical College of Cornell University

- **Philip J. Kranzusch, PhD**
  Harvard Medical School

- **Anna Marie Selmecki, PhD**
  University of Minnesota Medical School

- **Golnaz Vahedi, PhD**
  University of Pennsylvania

- **Ivan Zanoni, PhD**
  Harvard Medical School
Ad Hoc

*Biomedical Sciences*

**Career Development of Postdoctoral Scientists**

*American Society for Cell Biology*
Support for the ASCB Annual Meeting, December 7-11, 2019, Washington, DC

*Gordon Research Conferences*
Support for a Gordon Research Seminar on Fibroblast Growth Factors in Development and Disease: Biology, Technology and Translation in FGF Research

*International Society for Antiviral Research*
Support for the 2020 Gertrude Elion Memorial Lecture Award / 33rd International Conference on Antiviral Research, March 30 – April 3, 2020, Seattle, Washington

*Johns Hopkins University School of Medicine*
Support for Summer Academic Research Experience (SARE) in the Careers in Science and Medicine Initiative

*Keystone Symposia*
Support for Keystone Symposia Diversity Initiatives 2020

*Marine Biological Laboratory (MBL)*
Support for the 2020 Embryology course: Concepts and Techniques in Modern Developmental Biology

*President and Fellows of Harvard College*

*Society for Neuroscience*
Support for Trainee Professional Development Awards, October 19-23, 2019 Chicago, IL

*Society for Research on Biological Rhythms*

*University of North Carolina-Chapel Hill Lineberger Comprehensive Cancer Center*
Support for UNC Lineberger Comprehensive Cancer Center 44th Annual Symposium: The Yin-Yang of Immunity in Cancer, March 18-19, 2020

*Medical Sciences*

**American Foundation for Suicide Prevention**
Support for AFSP’s 2020 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

**American Physician Scientists Association (APSA)**
Support for 2019-2020 APSA Initiatives: 16th AAP/ASCI/APSA Joint Meeting/Mentorship and Diversity Program Expansions/Resident, Fellow, and Junior Faculty Resource Development

**Association for Clinical and Translational Science**
Support for the Translational Science meeting, Washington, DC, April 14-17, 2020

**Gordon Research Conferences**

**The LAM Foundation**
Support for the 2020 International LAM Research Conference and LAMposium, September 22 – October 8, 2020

**University of Toronto**
Support for the 2019 Clinician Investigator Trainee Association of Canada (CITAC-ACCFC)/Canadian Society for Clinical Investigation (CSCI) Annual General Meeting, November 8-10, 2019, Banff, British Columbia, Canada

**Weill Medical College of Cornell University**
Support for the Pediatric Scientist Development Program (PSDP): Building the next generation of pediatrician scientists, 2021-2022

*Diversity in Science*

**Kaiser Permanente Bernard J. Tyson School of Medicine**
Promoting Engagement in science for underrepresented Ethnic and Racial minorities (P.E.E.R)

**North Carolina Central University**
Leadership Institute for Future Teachers (LIFT)

**North Carolina Museum of Natural Sciences**
RACE 2.0 Exhibit Purchase and Transfer – Phase 2

**Profound Gentlemen**
Increase Support For Male Educators of Color in NC

**Region O Council for the Advancement of Minorities in Engineering (ROCAME)**
ROCAME Scholarship

**The Innovation Project**
Support for the Pathway to Practice North Carolina-The Innovation Project Collaboration/Burroughs Wellcome Fund (BWF) Pathway Scholars Program: Effectively Serving Diverse Science and Mathematics Residency Teachers in High Needs NC School Districts
**Infectious Diseases**

**American Society for Microbiology**
Support for American Society for Microbiology (ASM) Professional Development Programs

**American Society for Virology**
Support for the 39th Annual Meeting of the American Society to be hosted by the Colorado State University from June 13-17, 2020 in Fort Collins, CO

**American Society of Tropical Medicine and Hygiene**
Support for the 68th Annual Meeting of the American Society of Tropical Medicine and Hygiene (ASTMH) to be held November 20-24, 2019 in National Harbor, Maryland

**Boston Children’s Hospital/Harvard Medical School**
Support for BWF PATH awardee, David Weiss, to give a seminar at Boston Children's Hospital/Harvard Medical School on November 20, 2019

**Brown University**
Support for the 2020 Candida and Candidiasis Conference to be held in Montreal, Quebec, Canada

**Canadian Association of Postdoctoral Scholars**
Support for the 4th national postdoctoral survey to be conducted in 2019

**Canadian Association of Postdoctoral Scholars**
Support for the 2019 Canadian Association of Postdoctoral Scholars Annual General Meeting

**Center for Open Science**
Support for the Center for Open Science in Charlottesville, VA in lieu of 2020 honorarium to Dr. Maryrose Franko for BWF CGT Advisory Committee service.

**Fred Hutchinson Cancer Research Center**
Support for Julie Overbaugh (Former PATH AC Chair) to host Leigh Knodler (PATH awardee), Washington State University, for a seminar on March 16, 2020 to present her work to the Fred Hutch and UW microbiology community.

**Gordon Research Conferences**
Support for Gordon Research Seminar and Conference on Cellular and Molecular Fungal Biology to be held June 20-26, 2020 in Holderness, NH

**Gordon Research Conferences**
Support for the Biology of Host-Parasite Interactions Gordon Research Conference and Gordon Research Seminar to be held June 14-19, 2020 at Salve Regina University in Newport, RI

**Gordon Research Conferences**
Support for Gordon Research Conference on Bacterial Cell Surfaces to be held June 28 – July 3rd, 2020 in West Dover, Vermont

**Gordon Research Conferences**
Support for 2020 Biology of Acute Respiratory Infections Gordon Research Conference to be held at the Hotel Galvez, Galveston Texas February 16-21, 2020

**Gordon Research Conferences**
Support for a Gordon Research Conference on Streptococcal Biology to be held at the Jordan Hotel in Sunday River, Maine, USA, from August 16-21, 2020

**Gordon Research Conferences**
Support for 2020 Gordon Research Conference on Microbial Toxins and Pathogenicity to be held July 12-17, 2020 at Waterville Valley Resort, New Hampshire, USA

**Harvard Medical School**

**Iowa State University**
Support for young investigators to attend Anthelmintics IV: ‘From Discovery to Resistance’ Feb 3-7, 2020 in Santa Monica, CA

**Johns Hopkins Bloomberg School of Public Health – Baltimore, MD**
Support for Covid-19: Dynamics of localized and systemic immune responses to SARS-CoV-2 and implications for estimating population-level wide susceptibility

**La Jolla Institute of Allergy and Immunology**
Support for a seminar visit by Dr. Karla Satchell, PATH awardee, at the La Jolla Institute for Immunology in January 2020 hosted by PATH awardee, Dr. Erica Saphire

**Loyola University Chicago**
Support for keynote speaker for the 2020 International Conference on Gram Positive Pathogens to be held October 11-14th, 2020 in Omaha, NE

**Midwinter Conference of Immunologists**
Support for the 59th Annual Midwinter Conference of Immunologists to be held January 25-28, 2020 at the Asilomar Conference Grounds in Pacific Grove, CA

**National Academy of Sciences**
Support for a Meeting of Experts on Emerging Issues in Climate Change and Human Health

**National Academy of Sciences**
Support for Emerging Issues in Climate Change and Human Health Opportunity Grants

**National Academy of Sciences**
Support for “Human Health in a Changing Climate: A Strategic Initiative of the National Academy of Medicine”

**National Academy of Sciences**
Support for The Science of Effective Mentorship in STEMM program
New York University School of Medicine
Support for Department of Microbiology seminar speaker, Dr. Michael Shiloh, MD, PhD

Northwestern University Feinberg School of Medicine
Support for the Lakeside Conference on Bacterial Toxins and Effectors to be held October 4-7, 2020 in Lake Geneva, Wisconsin

Regents of the University of Minnesota
Support for 11th international conference on Cryptococcus and Cryptococcosis

Saint Louis Science Center Foundation
Support for seminar speaker, PATH awardee, Sebastian Winter to visit Tufts University School of Medicine

University of California-Berkeley
Support for seminar speaker, PATH advisory committee member, Dr. Eric Skaar, to visit UC Berkeley

University of California-San Francisco
Support for the Bay Area Microbial Pathogenesis Symposium (BAMPS) to be held on March 31, 2020 at UCSF

University of Colorado
Support for seminar by Dr. Leigh Knodler in August 2020 at University of Colorado School of Medicine

University of Oxford
Support of the Genomic Epidemiology of Malaria (GEM) Conference to be held June 7-10, 2021 in Hinxton, UK

University of Pennsylvania
Support for "Identifying antivirals active against SARS-CoV-2 and other human coronaviruses"

University of Pennsylvania
Support for Yasmine Belkaid from NIH (Ellison Foundation New Scholar in Infectious Disease award) to attend the Joint Annual Meeting on Mucosal Immunology at University of Pennsylvania

University of Pennsylvania School of Veterinary Medicine
Support for the 24th annual Woods Hole Immunoparasitology (WHIP) Meeting to be held on April 19-22, 2020 in Cape Cod, MA

University of Tennessee-Knoxville
Support for a workshop on Quantitative Education in Life Science Graduate Programs

University of Texas Southwestern Medical Center-Dallas
Support for seminar speaker, PATH awardee, Sebastian Winter to visit Tufts University School of Medicine

University of Texas Southwestern Medical Center-Dallas
Support for seminar grant for PATH awardee (2017), Jason Crawford, PhD at the Microbiology seminar series at UT Southwestern Medical Center in Dallas TX on November 19th 2019.

University of Texas Southwestern Medical Center-Dallas
Support of seminar visit by Dr. Terence Dermody at University of Texas Southwestern Medical Center-Dallas on March 10, 2020

Vanderbilt University Medical Center
Support for the 2020 Biennial Congress of the Anaerobe Society of the Americas (ASA), ANAEROBE to be held July 23-26, 2020 in Seattle, WA

Washington State University
Support for PATH awardee, Jorn Coers, D.Phil., PhD. to present a seminar at Washington State University

Washington State University
Support for Department of Microbiology seminar speaker, Dr. Michael Shiloh, MD, PhD
Interfaces in Science

Biophysical Society
Support for the 64th Annual Meeting to support the “Future of Biophysics Symposium,” the postdoctoral breakfast, and postdoc travel awards, February 15 – 19, 2020, San Diego, California

California Institute of Technology
Support for a travel grant to attend and present at the annual meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science

Computational and Systems Neuroscience (Cosyne)
Support for the 2020 Computational and Systems Neuroscience (COSYNE) Meeting, February 27-March 1, 2020, Denver, Colorado

Emory University
Support for a travel grant to attend and present at the annual meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science

Gordon Research Conferences
Support for the 2020 Gordon Research Conference “Single Molecule Approaches to Biology,” July 5-10, 2020, Castelldefels, Spain (delayed until 2022)

Gordon Research Conferences
Support for the 2020 GRC Bioinspired Materials meeting, Les Diablerets, Switzerland, June 7-12, 2020 (delayed until 2022)

Gordon Research Conferences
Support for the Gordon Research Seminar on Proteolytic Enzymes and Their Inhibitors

Gordon Research Conferences
Support for the Gordon Research Seminar, Biointerfaces 2020, June 2020

Marine Biological Laboratory (MBL)
Support for the Marine Biological Laboratory Physiology Course

National Organization for the Professional Development of Black Chemists and Chemical Engineers
Support for the NOBCChE 2020 Virtual Conference, September 24-25, 2020

Society for Biomaterials
Support for the Cato T. Laurencin, MD, PhD, Travel Fellowship to attend the annual meeting of the Society for Biomaterials and/or the World Biomaterials Congress

University of California-Berkeley
Support for a travel grant to attend and present at the annual meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science

University of California-San Diego Foundation
Support for the winter Q-Bio conference, February 18-21, 2020

University of Colorado-Boulder
Support for a travel grant to attend and present at the annual meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science

University of Michigan-Ann Arbor
Support for a subgroup, the Biological Timing: Molecular Clocks and Timers, from Systems to Synthetic Biology, of the annual American Society of Cell Biology Meeting, December 2019

Regulatory Science

American Association for Cancer Research (AACR)
Support for the Translational Cancer Research for Basic Scientists Workshop, November 17-22, 2019, Boston, Massachusetts

American Institute of Chemical Engineers
Support for events of the Regenerative Engineering Society hosted in 2019-2020

American Society for Cellular and Computational Toxicology
Support for the 19th International Workshop on (Quantitative) Structure-Activity Relationships in Environmental and Health Sciences, QSAR2020: From QSAR to New Approach Methodologies, June 8-11, 2020, Durham, North Carolina

American Society for Pharmacology and Experimental Therapeutics
Support for the ASPET Annual Meeting at Experimental Biology, initially scheduled for April 4-7, 2020, but will now be restructed into a virtual meeting or series of webinars

American Society of Gene & Cell Therapy
Support for the Outstanding New Investigator Symposium at the ASGCT 23rd Annual Meeting

Georgia Tech Research Corporation
Support for QBioS Hands-On Modeling Workshop: Epidemics and Outbreaks, 2021

Harvard Medical School
Support for the workshop: Pediatric drug development and product labeling

International Society for Cellular Therapy
International Society for Stem Cell Research
Support for the ISSCR 2020 Virtual Annual Meeting, June 23-27, 2020

MidSouth Computational Biology and Bioinformatics Society (MCBIOS)
Support for the fourth annual MAQC Society conference to be held in Cary, North Carolina, in April 2020

National Academy of Sciences
Support for the Forum on Drug Discovery, Development, and Translation

Society of Toxicology
Support for the 59th Annual Society of Toxicology Meeting and ToxExpo, initially scheduled for March 15-19, 2020, Anaheim, California and now moved to virtual format

Reproductive Science
Baylor College of Medicine
Support for the 2019 NICHD Contraceptive Development Meeting, Houston, Texas, November 3-6, 2019

Duke University
CANCELLED – Support for the Evolutionary Medicine Summer Institute (EMSI) workshop at NC State University, May 17-22, 2020

Gordon Research Conferences

Gordon Research Conferences
Support for the 2020 Gordon Research Conference on Mammalian Reproduction, August 9-14, 2020, South Hadley, Massachusetts

Marine Biological Laboratory (MBL)
Support for the Frontiers in Reproduction (FIR) 23rd Annual Symposium, rescheduled to June 2021, Woods Hole, MA

Marine Biological Laboratory (MBL)
Support for the Mike McClure Endowed Scholarship Fund 2020

Society for Reproductive Investigation
Support for the Society for Reproductive Investigation’s 67th Annual Meeting, Translating Reproductive Science to the Bedside

Society for the Study of Reproduction
Support for the Forum on Drug Discovery, Development, and Translation

Society for the Study of Reproduction
Support for the 53rd Annual Meeting – Reproductive Biology: Solutions for Adult Disease, July 9-12, 2020

University of Missouri-Columbia School of Medicine
Support for the 2019-2020 RSDP Seed Grant Phase II Scholars

University of Missouri-Columbia School of Medicine
Support for RSDP scholar research related expenses 2019-2020

University of Missouri-Columbia School of Medicine
Support for the RSDP Scholars Dinner and Executive Committee Meeting, March 2020, Vancouver, BC, Canada

University of Texas Health Science Center-Houston
Support for the Reproductive Scientists for Women’s Health Preconception to the Cradle 2019 meeting

University of Texas Health Science Center-Houston
Support for Reproductive Scientists for Women’s Health meeting entitled: from Preconception to the Cradle, November 11-12, 2019

Science and Philanthropy
Communications/Science Writing
Council for the Advancement of Science Writing
Support for the Initiative for Science Journalism

EducationNC
Support for EducationNC’s Focus on STEM

Food and Environment Reporting Network (FERN)
Support for the Gastropod Coverage of Biomedical Research

Imagine Science Films
Support for the project “Imagine Science x Burroughs Wellcome Fund”

North Carolina Community Foundation/ North Carolina Network of Grantmakers
Support for the Communications Training Initiative

North Carolina Community Foundation/ North Carolina Network of Grantmakers
Support for NCNG communications programming for 2019-20

North Carolina State University
Support for the North Carolina Science and Technology Policy Fellowship

Open Notebook
Support for the TON/BWF Early-Career Fellowship Program

Science Cheerleaders, Inc.
Support for the Science Cheerleaders at the USA SciFest

Science Talk
Support for Science Talk 2020, March 26-27, 2020, Portland, OR

ScienceCounts
Support for the study on Revisiting Public Attitudes in Science

Sigma Xi, The Scientific Research Society
Support for Sigma Xi: Science Communication, Education, and Public Engagement Track

University of Rhode Island Foundation
Support for the Advancing Inclusive Science Communication initiative
**General Philanthropy**

**Alport Syndrome Foundation Inc**
Support for research to facilitate the treatment of Alport Syndrome

**American Association for the Advancement of Science**
Support for the 2020 AAAS Mass Media Science & Engineering Fellowship

**Center for Excellence in Health Care Journalism**
Support for the training of journalists in medical science and health care

**Children’s Hospital of Pittsburgh Foundation**
Support for the Aviva Katz Program in Pediatric Ethics – research, education, and training related to ethics, directed by BWF Board Member Terence S. Dermody, MD

**Community Foundation of New Jersey**
Support for the Rita Allen Foundation Civic Science Fellows Program

**Community Initiatives**
Support for the ComSciCon Flagship Workshop

**Foundation Center**
Support for 2019-20

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

**Iowa City Community School District Foundation**
Support for hands-on learning experiences and teacher professional development, directed by BWF Board Member, Michael Welsh, MD

**Iowa City Community School District Foundation**
Support for the South East Jurnior High School’s CASL program, science lab supplies, and teacher professional development, directed by BWF Board Member, Michael Welsh, MD

**New Venture Fund**
Support for the Science Philanthropy Alliance

**North Carolina Community Foundation/ North Carolina Network of Grantmakers**
General support for 2020-2021

**North Carolina School of Science and Mathematics Foundation**
Support for the North Carolina STEM Hall of Fame Gala

**Open Notebook**
Support for Science Storytellers

**PEAK Grantmaking**
Support for 2020-2021

**University of California-Los Angeles Foundation**
Support for the Partners for Pediatric Progress through the Global Health Program at the David Geffen School of Medicine, directed by BWF Board Member Kelsey Martin, MD, PhD

**Science Education**

**Science Education**

**Afterschool Alliance**
STEM West – AmeriCorps VISTA Support

**Catawba County Schools**
STEM West Networking & Marketing

**Charitable Ventures**
Membership Dues for STEM Funders Network

**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

**Edgecombe County Schools**
The Casandra Cherry Maker Space

**Grantmakers for Education**
Grantmakers for Education Membership Dues

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

**McDowell County Schools**
Support for the Singapore Math Project: Building a Strong Math Foundation Through Constructing, Drawing, and Solving, a proposal by Eastfield Global Magnet School, McDowell County Schools

**Moore County Schools**
Support for Educational Policy Fellowship Program
National Association of Academies of Science
Support for the 2020 American Junior Academy of Science

National Indian Education Association
Developing Distance Learning tools for Native Students

North Carolina Association for Biomedical Research
Bridging the Gap 2020 STEM Education Conference

North Carolina Business Committee for Education
Support for the DRIVE Summit – Developing a Representative and Inclusive Vision for Education by moving towards a new landscape in recruiting, developing, supporting and retaining educators of color.

North Carolina Science Olympiad
2020 National Science Olympiad Tournament

North Carolina Society of Hispanic Professionals
Support of Promotion of Participation/Enrollment of Hispanic Students on STEM Programs in North Carolina

North Carolina State University Foundation
Kenan Fellowship for 1 K-12 teacher with a Diversity Focus

Public School Forum of North Carolina
Dudley Flood Center for Educational Equity and Opportunity (FCEEO)

Shodor Education Foundation Inc.
STEM Student Network

University of North Carolina Center for Public Television
Showcasing North Carolina Educators: Teachers of the Year Spots on UNC-TV

University of North Carolina-Chapel Hill
Creating Virtual NC DNA Day Modules

Village of Wisdom
Protecting Students of Color Belonging and Matriculation in STEM courses

Wilkes County Schools
Singapore Math Project
North Wilkesboro Elementary School
Wilkes County School District

Science, Math, and Technology Science Champion
Friday Institute for Educational Innovation
Updating the North Carolina STEM Education Strategic Plan Scope of Work

James B. Hunt Jr. Institute for Educational Leadership and Policy Foundation
Support for Driving Progress Toward College and Career Readiness in North Carolina

Morehead Planetarium and Science Center

North Carolina Alliance for School Leadership Development
North Carolina Science Fair Foundation
2019-2020 NC Science and Engineering Fair

Smithsonian Science Education Center
Smithsonian Science for the Classroom: Improving Student Achievement Across State Borders and State Standards

University of North Carolina-Chapel Hill
14th Annual K-12 STEM Conference, UNC Charlotte
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)
Arlene 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

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

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’Armento, 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

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, Deps. 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

Physician-Scientist Institutional Award

Matthew Redinbo, PhD
Professor and Chair, Department of Chemistry
The University of North Carolina at Chapel Hill

Keith Weninger, PhD
Associate Professor, Department of Physics
North Carolina State University

John York, PhD
Natalie Overall Warren Professor of Biochemistry
Chair, Department of Biochemistry
Vanderbilt University School of Medicine
Diversity in Science

Postdoctoral 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

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

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,
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
Former Director of Exception Children, Vance County Schools (retired)

Student STEM Enrichment Program

John E. Burris, PhD
Past President
Burroughs Wellcome Fund

Yolanda Comedy, PhD
American Association for the Advancement of Science

Connie Locklear
Division of Indian Education
Public Schools of Robeson County

Eric D. Packenham
Principal Investigator, GEAR UP Grant,
US Department of Education
Senior Lecturer, Utah State University

Celestine Pea, PhD
STEM Education Consultant

Steve Saucier
President
Carolina Aviation Museum

William Franklin Scott Sr.
Retired, High School and Middle School Principal

Marco Zarate
Co-founder
North Carolina Society of Hispanic Professionals
Board of Directors and Staff

Board of Directors
Brenda Andrews, PhD
Brian Druker, MD
Terence S. Dermody, MD
Paula T. Hammond, PhD
Robert J. Lefkowitz, MD, PhD
Wendell Lim, PhD
Kelsey Martin, MD, PhD (Chair)
Louis J. Muglia, MD, PhD
Lauretta Reeves, CFA, AWMA
Christine Seidman, MD
Jenny Ting, PhD
Philip R. Tracy

Honorary Member
Philip R. Tracy

Executive Staff
Louis J. Muglia, MD, PhD
President and CEO
Scott Schoedler
Vice President, Finance

Communications
Russ Campbell
Senior Communications Officer
Mandeep Sekhon
Associate Communications and Special Projects Officer

Facilities and Administration
Brent Epps
Facilities Administrative Assistant
Glenda H. Gilbert
Senior Manager, Facilities and Administration
Betsy Stewart
Administrative Assistant

Finance
Ken Browndorf
Senior Asset and Accounting Manager
Jennifer Caraballo
Senior Accountant

Information Technology
Sammy Caraballo
Systems and Web Engineer
Wendell Jones
Technology Coordinator

Meetings
Barbara Evans
Administrative Meeting Assistant
Lori Hedrick
Meeting Professional

Programs
Daniel Baroff
Program Assistant
Alfred Mays
Senior Program Officer
Victoria McGovern, PhD
Senior Program Officer
Samantha Moore
Program Assistant
Kelly Rose, PhD
Program Officer
Melanie Scott
Senior Program Associate and Database Specialist
Rolly L. Simpson Jr.
Senior Program Officer
Tiffanie Taylor
Senior Program Associate
Kendra Tucker
Program Associate and Data Specialist

Program Contact Information

Biomedical Sciences; Reproductive Sciences
Rolly Simpson
Senior Program Officer
rsimpson@bwfund.org
Kendra Tucker
Program Associate
tucker@bwfund.org

Career Guidance; Infectious Diseases; Population and Laboratory Based Sciences
Victoria P. McGovern, PhD
Senior Program Officer
vmcgovern@bwfund.org
Darcy Lewandowski
Program Associate
dlewandowski@bwfund.org

Diversity in Science; Science Education
Alfred Mays
Senior Program Officer
amays@bwfund.org
Tiffanie Taylor
Senior Program Associate
ttaylor@bwfund.org

Interfaces in Science; Regulatory Science; Translational Research
Kelly Rose, PhD
Program Officer
krose@bwfund.org
Melanie B. Scott
Senior Program Associate
mscott@bwfund.org

Communications/Media
Russ Campbell
Senior Communications Officer
news@bwfund.org

Mandeep Sekhon
Associate Communications and Special Projects Officer
msekhon@bwfund.org

Program Information
The most up-to-date information about our programs, including complete application information, can be found on our website at www.bwfund.org.