

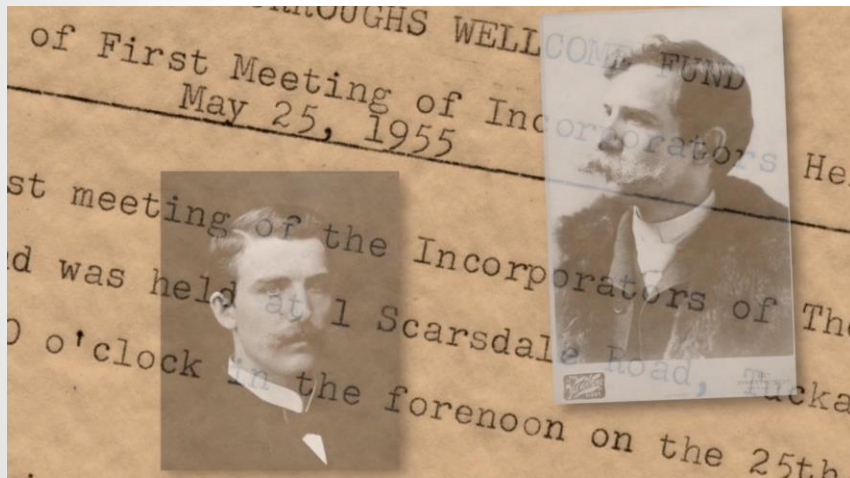
The Burroughs Wellcome Fund and Perinatal Research: Mission, Priorities and Opportunities

Louis J. Muglia, MD PhD
President and CEO



BURROUGHS
WELLCOME
FUND 

History of the Burroughs Wellcome Fund



- Burroughs Wellcome Co. founded in 1880s by Silas Burroughs and Henry Wellcome.
- Global growth of pharmaceutical company in 20th Century.

History of the Burroughs Wellcome Fund

- Burroughs Wellcome Fund established in 1955 as philanthropic arm of company.
- Burroughs Wellcome Fund established as independent nonprofit organization with \$400M gift from the Wellcome Trust in 1993.



My Long-standing Relationship with BWF

- 1995 Career Awardee in the Biomedical Sciences
- A founding member that helped develop the BWF/March of Dimes Preterm Birth Research Consortiums dating back to 2007
- Career Awards for Medical Scientists (CAMS) advisory committee member (2007-2016)
- Chair of the Preterm Birth advisory committee (2011-2019)
- President and CEO (2020-)

Building on a Legacy of our Past Presidents



Enriqueta Bond, PhD
1994-2008



John Burris, PhD
2008-2019

BWF Board of Directors



The Primary Missions of the Burroughs Wellcome Fund

- To help scientists early in their careers develop as independent investigators
- To advance fields in the basic biomedical sciences that are undervalued or in need of particular encouragement

How will we measure our success in achieving these missions?

- Number of scientists, especially physician-scientists, we have supported to become successful independent investigators.
- Enhancing the diversity of the biomedical research community.
- Determining the number of transformative researchers and scientific questions we have invested in particularly in underfunded areas.
- Quantifying the number of discoveries that have led to changes in human health.

Framing the Task Environment of BWF*

- Social Concern: Lack of a diverse biomedical research community and a shortfall in investment specific research areas of importance.
 - Mental health
 - Reproductive sciences
 - Neglected infectious diseases
 - Integration of physical and biological sciences
 - Physician-scientists
- Interventions Activities: Research funding with attention to early stage investigators, diversity enrichment platforms, investment in NC K-12 education

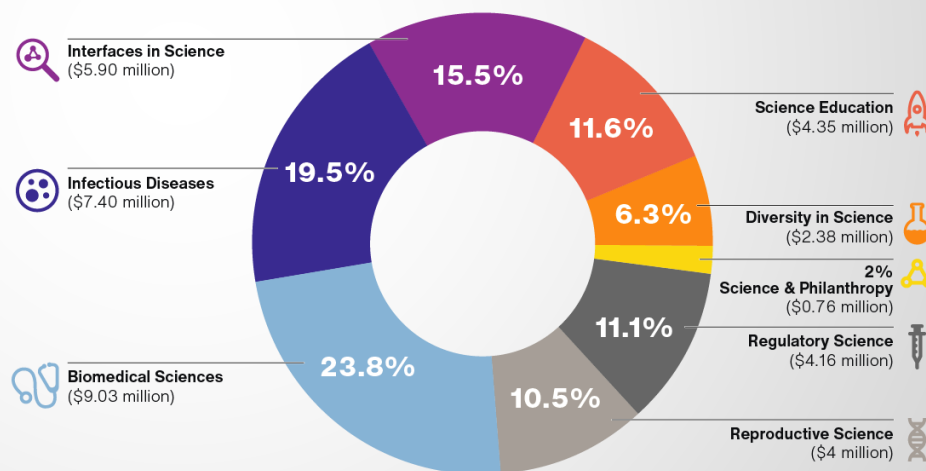
**Based upon Strategic Management in Nonprofit Organizations, WA Brown, 2015.*

The BWF Mission Statement

- The Burroughs Wellcome Fund serves and strengthens society by nurturing a diverse group of leaders in biomedical sciences to improve human health through education and powering discovery in frontiers of greatest need.



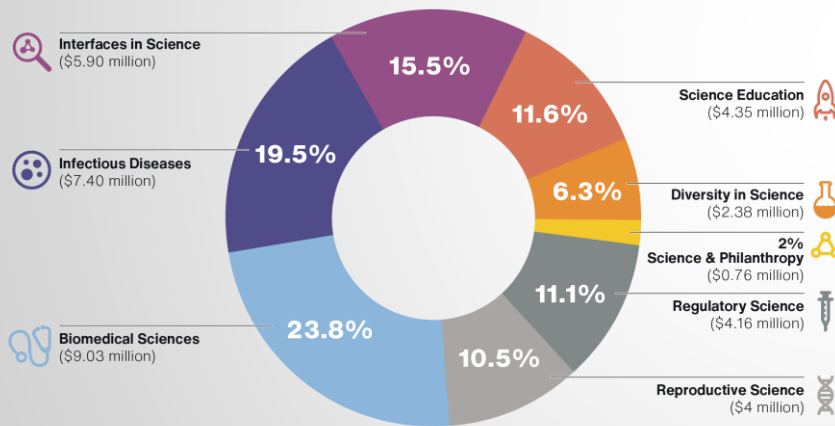
**BWF awarded more than \$36 million
in grants during fiscal year 2021**



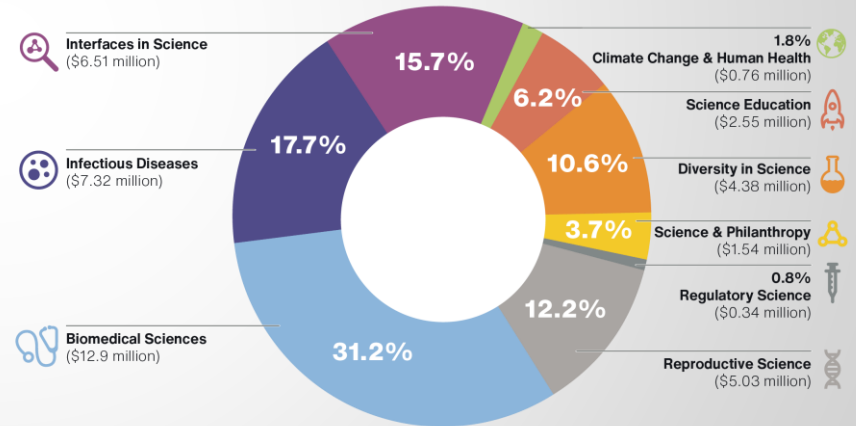
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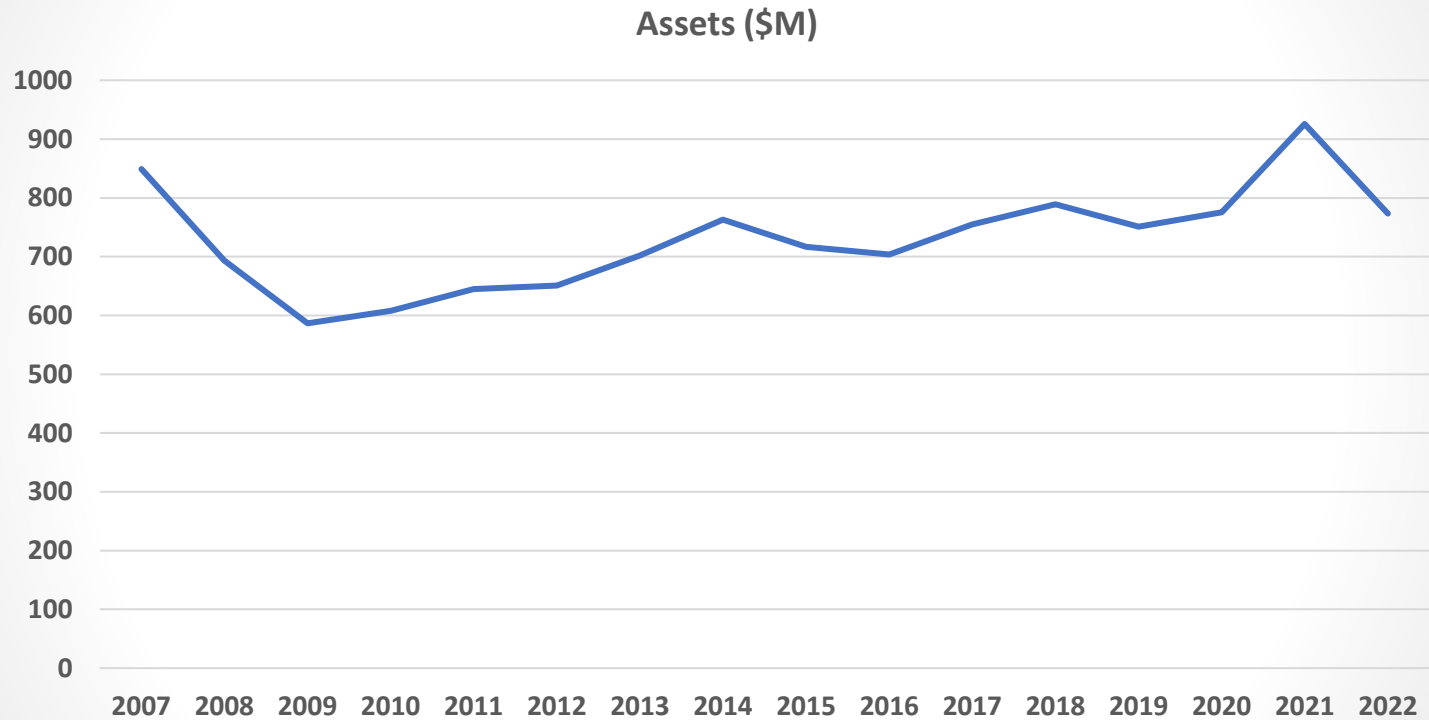
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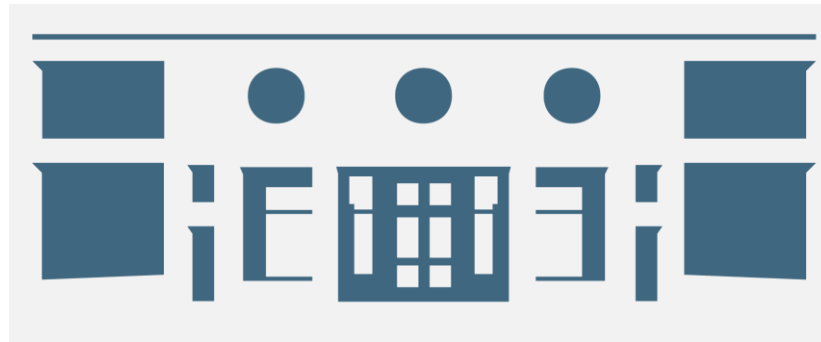
**BWF awarded more than \$41 million
in grants during fiscal year 2022**



BWF Fiscal Year End Assets



Burroughs Wellcome Fund Grant Programs



2019-2022

BWF Focus Areas 2022

Interfaces in Science/Regulatory Sciences

Tammy Collins (tcollins@bwfund.org)

Infectious Diseases/Career Guidance/Climate Change

Victoria McGovern (vmcgovern@bwfund.org)

Science Education/Diversity in Science

Alfred Mays (amays@bwfund.org)

Biomedical Sciences/Reproductive Sciences

Paige Cooper (pcooper@bwfund.org)

Communications

Russ Campbell (rcampbell@bwfund.org)

<https://www.bwfund.org/programs-offered>

BWF Proposal Funding Mechanisms

- **Competitive Award Programs**

- Annual: PDEP, CASI, CAMS, PATH, Next Gen Pregnancy, CGT
- Biennial: GDEP, IRSA
- Exploratory: PSIA
- RFPs with timelines available on website
- Some are two phase with initial screening LOI

- **Ad Hoc Proposals**

- Continuous submission and consideration
- Align with programmatic priority areas
- Do not circumvent proposals better suited to competitive award mechanism
- Often training, diversity, multi-institution oriented
- Usually 3 years or less in duration
- Requests for \$75,000 or less can be approved without full Board review.

Some Things That Are Probably Self-Evident

- Ask a question you are passionate about answering and truly curious about.

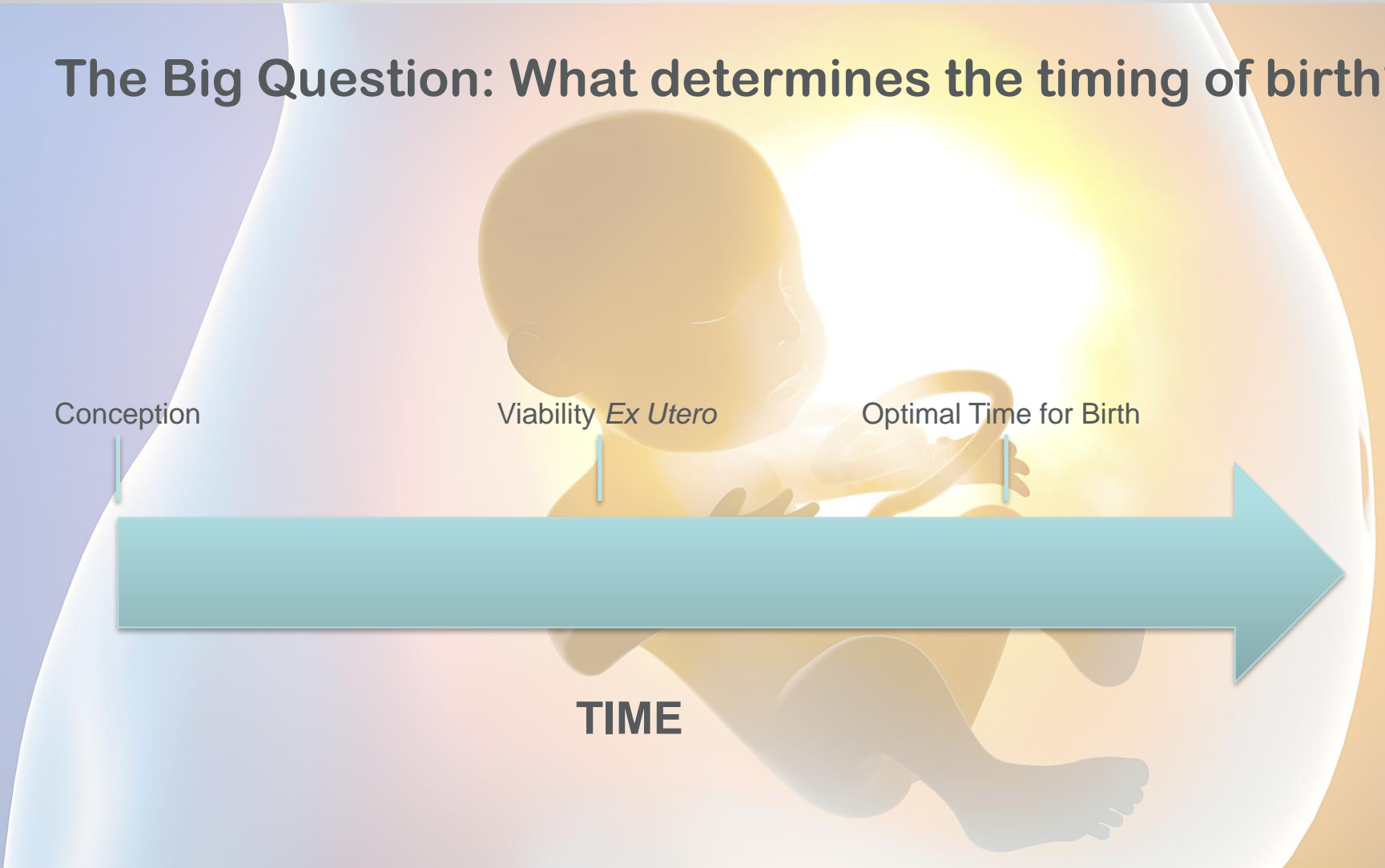
The Big Question: What determines the timing of birth?

Conception

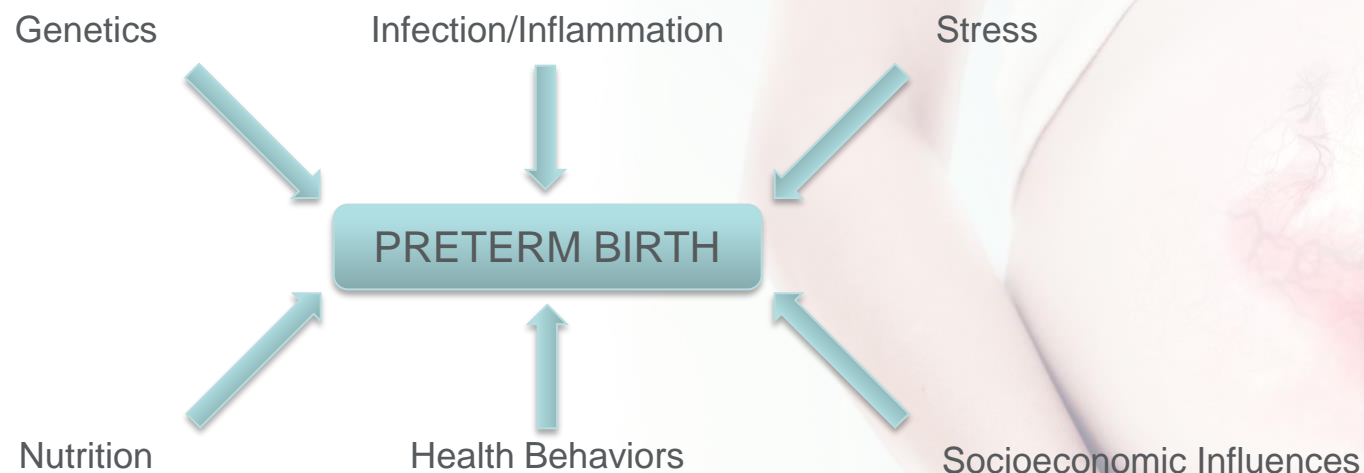
Viability *Ex Utero*

Optimal Time for Birth

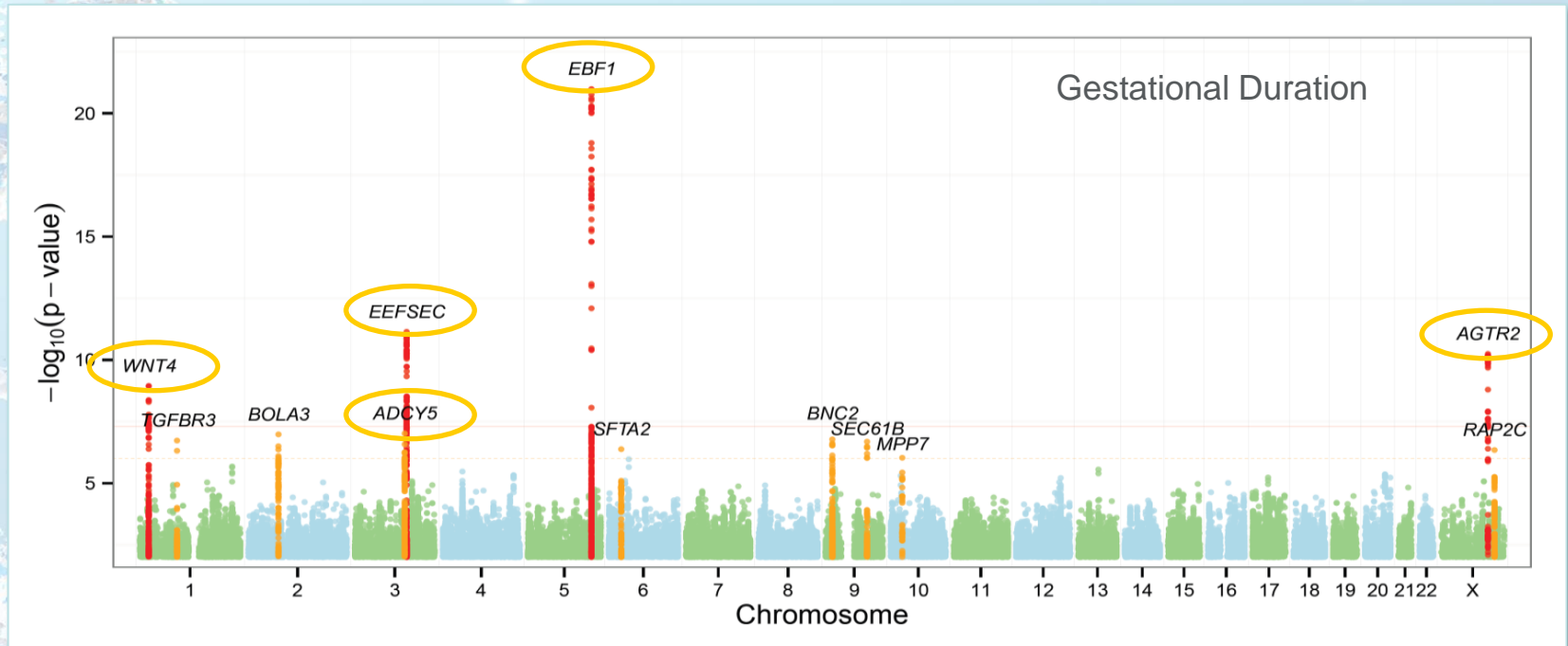
TIME



Many Factors Lead to Preterm Birth



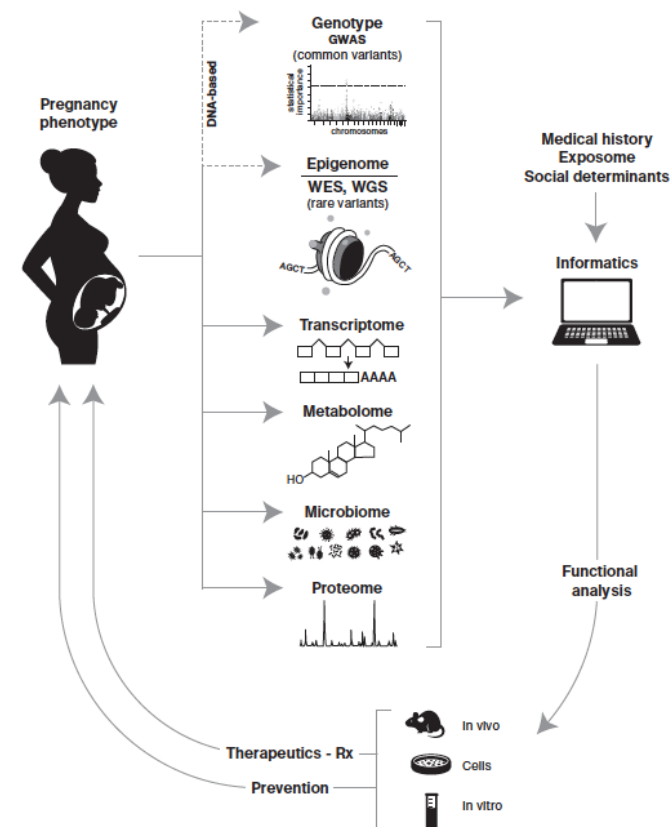
The first identification of robust associations



Genotypes of 44,000 women in collaboration with 23andMe, Inc.

A Vision for the Future

- Routine capture of pregnancy outcomes for both the mother and offspring in EMR – high and low resource settings
- Integration of our genomes in becoming part of our medical record
- Precision medicine approach to pregnancy – this is more than just genomics and genetics:
 - Social determinants
 - Health behaviors
 - Nutrition
 - Environmental exposures
- Preventative strategy for adverse pregnancy outcomes for every mother



The Reproductive Science Story at BWF Since 1994

- **American Association of Obstetricians and Gynecologists Foundation (1997-2003)**
- **Reproductive Scientist Development Program (1998 – date)**
- **Frontiers in Reproduction, MBL Summer Course (1998 – date)**
- **Preterm Birth Research Consortium and the Preterm Birth Initiative (2007 – date)**

American Association of Obstetricians and Gynecologists Foundation (1997-2003)

- ❖ The award was intended to fund three consecutive years of research training. The initial award was for one year and is renewable annually for two additional consecutive years of research training, based on satisfactory progress of the scholar in meeting programmatic requirements and on the availability of funds. Only one year of the three funded years may be part of a subspecialty fellowship-training program. Indirect costs were not provided.
- ❖ It was expected that the scholarship training would be conducted at the same institution for the entire period of funding. Transfer of institutions or change of mentors during the period of funding must receive the prior approval of AAOGF and, in the case of a jointly sponsored award, the Foundation for SMFM or GOG Foundation. Unexpended funds must be returned to the sponsoring organization unless approval was granted for an extension of the training period.
- ❖ Total number supported: General support for 19 awards
- ❖ Total budget: \$1,578,000.00

Reproductive Scientist Development Program (1998 – date)

- ❖ RSDP is a national career development program launched in 1988 with the goal of developing a cadre of reproductive physician-scientists based in academic departments who could employ cutting-edge cell and molecular technologies to address important problems in the field of obstetrics and gynecology (OB/GYN). RSDP's mentored research experiences assist junior faculty in their transition to productive, independent physician-scientists who are highly competitive for research funding. As of spring 2016, nearly 100 scholars have participated in RSDP.
- ❖ Total supported: Annual general support for seven years
- ❖ Outcomes: 100 scholars supported; 45-50% remain active in research; 4 have received major BWF awards
- ❖ Total budget: \$1,463,000.00

Frontiers in Reproduction, MBL Summer Course (1998 – date)

- ❖ FIR is an intensive 6-week laboratory and lecture course for scientists-in-training who seek to improve their knowledge and experimental skills in order to pursue a career in the Reproductive Sciences.
- ❖ Total supported: Annual general support
- ❖ Outcomes: Survey done every five years and results published (Ascoli et al, Biology of Reproduction 95: 1-6, 2016). Next survey will occur in 2021.
- ❖ Total budget: \$3,993,001.00

Preterm Birth Research Consortium and the Preterm Birth Initiative (2007 – 2019)

❖ Preterm Birth Consortium

- \$600,00 grant to Wash U
- Supported biannual meetings in conjunction with March of Dimes 2008-2016
- Outcome: Whitepaper published in NEJM 2010

❖ Preterm Birth Initiative

- 6 award cycles; 31 grants made; 25 active; 2 left program (NIEHS, Gates); 12 awards currently have 28 active NIH grants

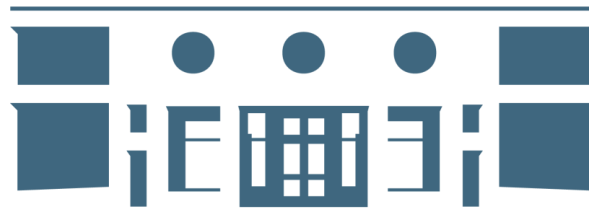
❖ Total paid to date: \$18,212,447.99

Pregnancy “Think Tank”

NOVEMBER 19-20, 2019

and

Next Gen Pregnancy RFP



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Pregnancy and Traveling the Scientific Road to a Healthy Start:

A Burroughs Wellcome Fund Pregnancy Think-Tank

Condensation: This Pregnancy Think-Tank summary outlines new opportunities and technologies to accelerate discoveries across adverse pregnancy outcomes and proposes key research questions that address life-long health.



Upcoming Deadlines
Career Tools
About BWF
News
Contact

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EXPLORE FUNDING OPPORTUNITIES »
SUPPORTING STUDENTS, TEACHERS, SCIENTISTS, & INSTITUTIONS

NEXT GEN PREGNANCY INITIATIVE

APPLICATION DEADLINE:

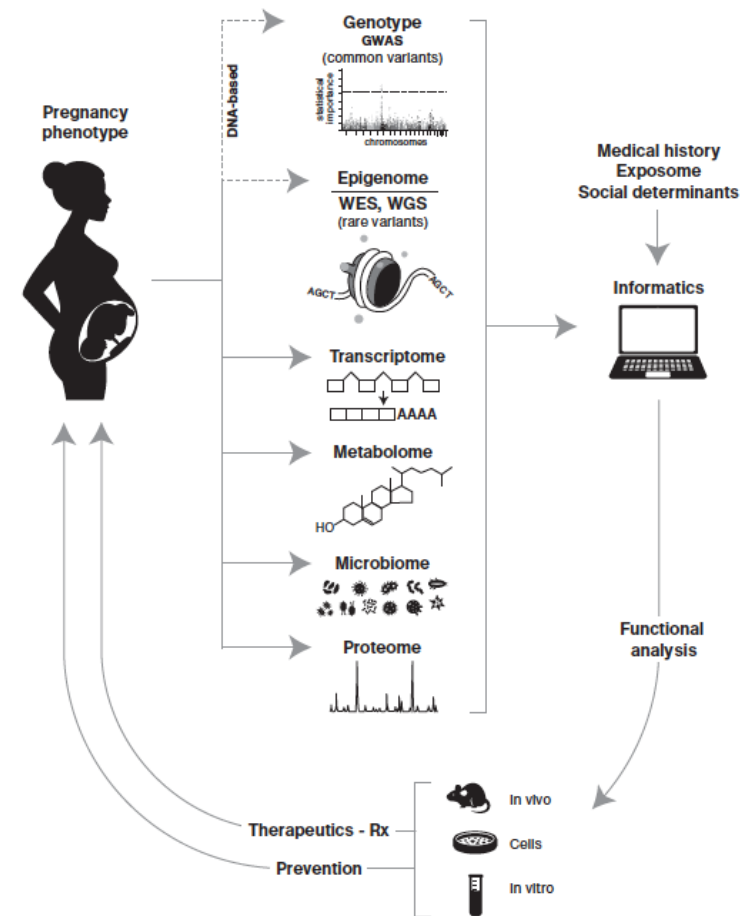
Dec 01, 2021
by
3:00pm
ET

STATUS:

NOW
ACCEPTING
APPLICATIONS

APPLY FOR THIS GRANT:
• **Forms and Resources »**
• **FAQ's »**
BEGIN A PROPOSAL
ACCESS YOUR SAVED PROPOSAL

ELIGIBILITY & APPLICATION PROCESS:
For a full explanation of the eligibility requirements, view the Request for Proposals.
REQUEST FOR PROPOSALS



Next Generation Pregnancy Initiative

- Four year, \$500,000 awards
- Aimed at faculty at any level + senior postdocs
- Brings diverse interdisciplinary approaches to pregnancy research to address the scientific issues related to adverse pregnancy outcomes broadly for the mother and offspring.

Career Awards at the Scientific Interface



- Five-year, \$500,000 postdoc/faculty bridging award
- Supports the early career development of researchers bringing skills from the physical, computational and mathematical science and engineering to focus on biological questions

Innovations in Regulatory Science (IRSA)



- Five-year, \$500,000 faculty award
- Supports researchers bringing innovative and implementable solutions to regulatory questions.
- We invite collaborations and talents spanning mathematics, computer science, applied physics, medicine, engineering, toxicology, epidemiology, and systems pharmacology, and any other field spanning biomedical, biophysical, and biostatistical disciplines.

Career Awards for Medical Scientists

- Five-year awards for physician scientists
 - \$700,000 postdoc/faculty bridging award
 - This award addresses the on-going problem of increasing the number of physician scientists and will help facilitate the transition to a career in research

Two Stage Process: Pre-proposal and Full Proposal

Finalists interview at Burroughs Wellcome Fund

Up to 14 awards given annually

Investigators in the Pathogenesis of Infectious Disease



- Five-year, \$500,000 award
- Assistant professor level career development
- Study infectious disease pathogenesis, to shed light on the overarching issues of how human hosts handle infectious challenge.
- RFP Opens April 30, 2021



Diversity in Science Postdoctoral Enrichment Program (PDEP)

*The **primary goal** of PDEP is to substantially enhance the postdoctoral training and experience of the URM junior scientists by providing enrichment support at critical junctions in their careers.*

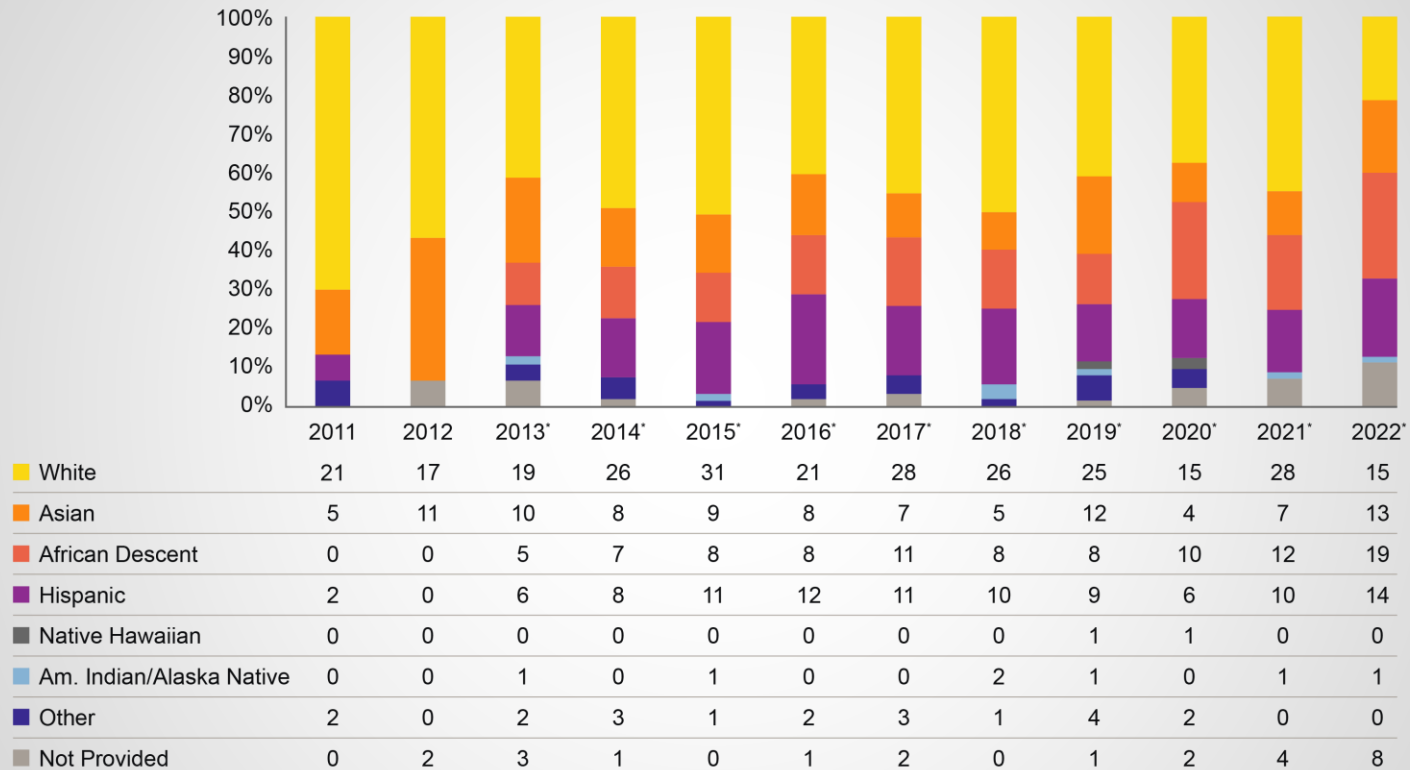
- 3 Year, \$60K grant award
- Support for URM postdoctoral fellow conducting biomedical or medical research
- Degree awarding institution/affiliate in US or Canada
- URM Mentor collaboration and training
- Supports courses, workshops, collaboration, networking and mentoring

Our Commitment to Diversity

- Individual demographics
 - Race/ethnicity
 - Age
 - Gender
 - Sexual orientation
 - Socioeconomic status
- Voice for Social Justice



Ethnicity of Individual BWF Awardees with PDEP Awardees (2011-2022)



49% URM

Thinking about the Future at BWF

- Ongoing assessment of current programs for direction and impact
- Identify new areas for prioritization
 - Overarching goal of integration of science & the arts to foster creativity and innovation
 - Science communication partnerships (Civic Science Fellows, Nat Geo, The Conversation)
 - Data visualization as research tool and communication venue
 - Theoretical and quantitative modeling of complex problems
 - Climate change and human health
 - BWF Scholar in resident program
 - Special consideration around COVID-19





Advancing basic science—The foundation of our future

Mission:

To increase philanthropic support for basic scientific research.

This is accomplished by:

1. Understanding the opportunities and complexities philanthropists face in funding basic science
2. Providing advice and learning opportunities for individual philanthropists and foundation staffs on how to support basic research most effectively.

About the Alliance

The mission of Science Philanthropy Alliance is to increase philanthropic support for basic scientific research. We accomplish this by understanding the opportunities and complexities philanthropists face in funding basic science, and providing advice and learning opportunities for individual philanthropists and foundation staffs on how to support basic research most effectively. We believe philanthropy plays a critical role in advancing basic scientific knowledge—knowledge that is essential to the improvement of human health and welfare.

Learn more about our history and our work by visiting **Who We Are** and **What We Do**.

Basic research leads to new knowledge. It provides scientific capital. It creates the fund from which the practical applications of knowledge must be drawn.

VANNEVAR BUSH

The Science Philanthropy Alliance was incredibly helpful in our early education in science and helping us think about how we engage in this space. We are very grateful for our ongoing partnership with the Alliance.

PRISCILLA CHAN, CHAN ZUCKERBERG INITIATIVE

Members



Benefactors



Science Philanthropy Alliance Members

Philanthropy	Year Founded	Approximate Total Assets 2017	Approximate Annual Grantmaking 2017
Members (9)			
Rita Allen Foundation	1953	\$174 million	\$5.5 million
Heising-Simons Foundation	2007	\$505 million	\$62.6 million
The Kavli Foundation	2000	\$652 million	\$26 million
Albert and Mary Lasker Foundation	1942	\$81 million	\$2.76 million ⁵
Gordon and Betty Moore Foundation	2000	\$6.8 billion	\$288 million
Research Corporation for Science Advancement	1912	\$174 million	\$4 million
Simons Foundation	1994	\$3.3 billion	\$272 million
Alfred P. Sloan Foundation	1934	\$1.9 billion	\$85 million
Burroughs Wellcome Fund	1955	\$860 million	\$45 million
Benefactors (4)			
Howard Hughes Medical Institute	1953	\$19 billion	\$779 million
The David and Lucile Packard Foundation Medical Institute	1964	\$7.8 billion	\$335 million
John Templeton Foundation	1987	\$3.4 billion	\$129 million
Wellcome Trust	1936	\$28 billion	\$1.5 billion

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