Pathway to Stop Diabetes 2015 Initiator awardee Stephanie Stanford, PhD
The goal of the American Diabetes Association’s Pathway to Stop Diabetes® program is simple yet revolutionary:
Find a new generation of brilliant scientists at the peak of their creativity, then provide them with the freedom, autonomy, and resources to set them on the road to breakthrough discoveries.

It has been nearly a century since Drs. Frederick Banting and Charles Best made the transformational discovery of insulin. Since then, countless research breakthroughs have helped people with diabetes lead longer, healthier lives. Now, with unprecedented tools at their disposal, the next generation of diabetes researchers has the potential to make game-changing discoveries that will end the burden of diabetes.

But there is a problem. Diabetes research is critically underfunded, potentially driving talented scientists away from diabetes and jeopardizing progress.

The ADA’s Pathway to Stop Diabetes program is a bold, forward-thinking initiative dedicated to bringing 100 scientists to diabetes research. Through substantial, sustained funding; access to scientific and career mentoring from current leaders in diabetes research and business; avenues for fostering meaningful collaborations; and communication outlets to convey their research, Pathway to Stop Diabetes scientists are poised to become the next generation of diabetes research leaders.

The prestigious, nomination-only Pathway to Stop Diabetes program has three distinct award categories:

**Pathway Initiator** – For scientists currently in training through their transition to independent research careers in diabetes

**Pathway Accelerator** – For scientists in the early stage of their independent research careers who show tremendous potential for answering critical diabetes-related questions

**Pathway Visionary** – For scientists established in fields other than diabetes who want to bring a new perspective to solving diabetes-related problems

An important facet of the program is that it invests in the person, not the project. While each individual scientist brings their own background, expertise and vision, all are steadfastly dedicated to the same goal: To Stop Diabetes.

This year, we welcomed four new corporate sponsors to Pathway to Stop Diabetes: Abbott, Dexcom, Inc., Janssen and Pfizer Inc. They joined long-term sponsors Novo Nordisk, Eli Lilly and Company, AstraZeneca and Merck. We are confident that, with continued support from our corporate sponsors and the incredible generosity of our philanthropic supporters, we will indeed achieve our goal of bringing 100 brilliant scientists to diabetes research.

For the latest information on the Pathway program and exciting updates from Pathway scientists, visit [diabetes.org/pathway](http://diabetes.org/pathway).
<table>
<thead>
<tr>
<th>Type 2 Diabetes</th>
<th>Obesity, Prediabetes and Diabetes Risk</th>
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| STEPHEN C.J. PARKER, PHD  
University of Michigan  
Initiator ‘14 | JOSHUA P. THALER, MD, PHD  
University of Washington  
Accelerator ‘14 |
| WOLFGANG PETI, PHD  
University of Arizona College of Medicine  
Visionary ‘14 | ZACHARY A. KNIGHT, PHD  
University of California, San Francisco  
Accelerator ‘16 |
| CELINE E. RIERA, PHD  
Cedars-Sinai Medical Center  
Initiator ‘15 | PRAVEEN SETHUPATHY, PHD  
Cornell University  
Accelerator ‘16 |
| MICHAEL L. STITZEL, PHD  
The Jackson Laboratory  
Accelerator ‘18 | PHILLIP JAMES WHITE, PHD  
Duke University  
Initiator ‘16 |
| SAMIE R. JAFFREY, MD, PHD  
Weill Cornell Medicine  
Visionary ‘18 | PAUL COHEN, MD, PHD  
The Rockefeller University  
Accelerator ‘17 |
| JONATHAN V. SWEEDLER, PHD  
University of Illinois at Urbana-Champaign  
Visionary ‘18 | SARAH A. STANLEY, MD, PHD  
Icahn School of Medicine at Mount Sinai  
Accelerator ‘17 |
| SARAH A. TISHKOFF, PHD  
University of Pennsylvania  
Visionary ‘19 | ALEXANDER R. NECTOW, PHD  
Princeton University  
Accelerator ‘18 |
| JOHN NELSON CAMPBELL, PHD  
University of Virginia School of Medicine  
Initiator ‘18 |

“It is an honor to be among a great class of Pathway scientists, allied in improving the lives of people with diabetes.” -Matthew J. Webber, PhD
Complications of Diabetes

KATHLEEN A. PAGE, MD
University of Southern California
Accelerator ‘14

MARIE-FRANCE HIVERT, MD
Harvard Medical School
Accelerator ‘15

EBONY B. CARTER, MD
Washington University
School of Medicine
Accelerator ‘19

MICHAEL D. DENNIS, PHD
Pennsylvania State
University, Hershey
Initiator ‘14

MAYLAND CHANG, PHD
University of Notre Dame
Visionary ‘15

DANIEL J. CERADINI, MD, FACS
New York University
Accelerator ‘16

SUI WANG, PHD
Stanford University
Initiator ‘16

JONATHAN N. FLAK, PHD
University of Michigan
Initiator ‘17

DAVID A. SPIEGEL, PHD
Yale University
Visionary ‘17

Gestational Diabetes

THOMAS DELONG, PHD
University of Colorado, Denver
Accelerator ‘15

ZHEN GU, PHD
University of California, Los Angeles
Accelerator ‘15

STEPHANIE STANFORD, PHD
University of California, San Diego
Initiator ‘19

Complications of Diabetes

ANDREW SCHARENBERG, MD*
Casebia Therapeutics
Visionary ‘16

ALEKSANDER D. KOSTIC, PHD
Joslin Diabetes Center
Initiator ‘17

SUMITA PENNATHUR, PHD
University of California, Santa Barbara
Visionary ‘17

MAUREEN MONAGHAN, PHD
Children’s Research Institute, Washington, DC
Accelerator ‘18

MATTHEW J. WEBBER, PHD
University of Notre Dame
Accelerator ‘19

*Relinquished as of 2017. Dr. Scharenberg is now
Chief Scientific Officer at Casebia Therapeutics.
PATHWAY’S FIRST GRADUATING CLASS

In 2013, the American Diabetes Association launched the Pathway to Stop Diabetes program with a bold vision of bringing 100 brilliant scientists to diabetes research. Five stellar scientists were selected for the inaugural class, starting their grants in January 2014. They have since pursued transformational research.

This year, Pathway Accelerator awardees Dr. Kathleen A. Page and Dr. Joshua P. Thaler, and Pathway Visionary awardee Dr. Wolfgang Peti became the first scientists to complete the Pathway to Stop Diabetes program. As they have demonstrated already, they will continue to play an integral role in advancing revolutionary diabetes research.

KATHLEEN A. PAGE, MD, University of Southern California, Los Angeles, CA
Stopping the Transgenerational Risk of Diabetes

Children of mothers who had diabetes during pregnancy are at high risk for developing obesity and type 2 diabetes. My Pathway to Stop Diabetes project has aimed to understand how “in utero” exposure to gestational diabetes results in alterations in brain pathways involved in the regulation of energy and glucose homeostasis.

With the support of this award, I have been able to invest in the use of cutting-edge imaging technologies and I initiated the largest single-center trial designed to characterize brain development and its relationship to metabolic function in pre-pubertal children at high risk for developing diabetes. This project has already led to a number of downstream studies including work aimed at identifying the impact of prenatal exposure to maternal obesity and gestational diabetes on brain development, and longitudinal studies to identify biological factors that may contribute and interact with each other to increase risk for type 2 diabetes.

“My Pathway to Stop Diabetes award allowed me to break new ground in diabetes research to advance our understanding of early life determinants of obesity and diabetes.”
JOSHUA P. THALER, MD, PHD, University of Washington, Seattle, WA

Treating Obesity and Diabetes in the Brain

The obesity epidemic is closely linked to the recent surge in type 2 diabetes, but no therapies currently exist that promote sustainable weight-loss. My Pathway to Stop Diabetes project has aimed to develop a better understanding of how the human body regulates body weight, which may enable us to act before the onset of diabetes, when complications have not yet occurred. We have provided the first substantial evidence that specific types of brain cells are critical players in susceptibility to weight gain and glucose intolerance.

This field was virtually nonexistent prior to my award and has been received with skepticism by the establishment. Without this award, our pioneering work in this area would not have been possible. Thus, I want to acknowledge the visionary roles of the ADA and the Pathway funding sponsors in creating a program to advance innovative scientists and their bold ideas in pursuit of a cure for diabetes.

“My Pathway to Stop Diabetes award provided me the opportunity to start my own lab focused on a new, challenging area of metabolic research.”

WOLFGANG PETI, PHD, University of Arizona, Tucson, AZ

Innovating New Approaches to Make Safer, More Effective Diabetes Treatments

When insulin signaling is disrupted, diabetes is the result. My Pathway to Stop Diabetes project has focused on using powerful molecular tools to gain fresh, essential insights into how insulin signaling becomes disrupted in diabetes, with the goal of developing a new drug and finding a cure for diabetes. This effort has already led to the identification of a drug specific for the enzyme PTP1B, which regulates insulin receptor activity. These established successes ensure our long-term commitment and, most importantly, successes for the future and hope for diabetes patients worldwide.

Without these resources, it simply would not have been possible to generate the exciting advances we have contributed to the field of diabetes. This award allowed my laboratory to push boundaries, think big and be creative, ultimately enabling us to achieve and exceed our goals set out at the beginning of the award.

“My Pathway to Stop Diabetes award allowed me not only to pursue a new area of research but also enabled me to employ novel, state-of-the-art technologies in this pursuit.”
$51.5M raised from corporate sponsors and individual philanthropists

110+ peer-reviewed publications authored by Pathway awardees

9 invention disclosures and patent applications

32 scientists selected from more than 600 applicants

37 average age of Pathway Initiator and Accelerator awardees compared to 44 for first time NIH R01 awardees
THE PATHWAY PORTFOLIO

Pathway scientists are selected based on their potential to become diabetes research leaders and to make significant discoveries in the field of diabetes. While each individual scientist brings their own unique vision for stopping diabetes, collectively, they address many of the key issues in prevention, management and treatment of diabetes and its complications.
DIABETES IS PERSONAL FOR PATHWAY SCIENTIST

“My passion to understand and study diabetes is built upon my personal and research experiences. I grew up in a small city close to Inner Mongolia in northern China. Over the past few decades, diabetes has become one of the most common diseases in my hometown due to the rapid economic development and lifestyle changes. More and more people are suffering from diabetes and its complications, including my close friends and family members.”

Pathway to Stop Diabetes 2018 Initiator awardee Sui Wang, PhD
Zachary A. Knight, PhD, is investigating how the brain regulates body weight. His lab was the first to visualize hunger-controlling neurons in a living organism, which he determined become activated just seconds after the sight or smell of food. Now, Dr. Knight is determining how these neurons are regulated over the long-term, with particular interest in changes preceding obesity and type 2 diabetes.

This year, Dr. Knight was named an HHMI Investigator, one of the most prestigious honors in all of biomedical research. He joins 300 other investigators across different disciplines, all selected based on their potential to make transformational discoveries in science. To date, 29 HHMI investigators have won a Nobel Prize.
KEY ACCOMPLISHMENTS OF PATHWAY SCIENTISTS IN 2018

Pathway to Stop Diabetes awardees represent a diverse coalition of people dedicated to furthering progress toward ending diabetes. A key way in which they accomplish this is by communicating their results to the broader scientific community, ensuring that others will build upon their findings. This year alone, they published 36 peer-reviewed articles and reviews, and presented more than 150 times at scientific conferences and symposia.

Pathway to Stop Diabetes
2016 Initiator awardee Philip James White, PhD
TYPE 1 DIABETES
Pathway scientist Sumita Pennathur, PhD, has made significant progress toward developing an inexpensive, pain-free and disposable patch that can continuously monitor blood glucose. She has recently published a report documenting a novel way to enhance the scalability and manufacturability of microneedles for use in biomedical applications, including her glucose monitoring patch.


TYPE 2 DIABETES
Pathway scientist Philip James White, PhD, recently discovered how specific molecules interact to control the level of fat in the liver. Manipulation of this pathway can improve type 2 diabetes in rodents, setting the stage for the development of a medication for use in humans.


COMPLICATIONS OF DIABETES
Pathway scientist Mayland Chang, PhD, published results demonstrating a novel target for the treatment of diabetic foot ulcers, a leading cause of amputations in people with diabetes. She is currently developing a potential new therapy to improve the healing of foot ulcers in people with diabetes.


GESTATIONAL DIABETES
Pathway scientist Marie-France Hivert, MD, has determined the extent to which a woman's genetics alters her risk for developing gestational diabetes. Dr. Hivert found that the genetic risk for type 2 diabetes similarly applies to risk for gestational diabetes.

SELECT 2018 PUBLICATIONS


“The Pathway award has allowed me to conduct the high-risk, high-reward science my group is working on that would not have been funded via traditional routes such as the NIH. This funding paves a path forward for us to be able to identify mechanisms by which the gut microbiome prevents autoimmune diabetes.”

Pathway to Stop Diabetes 2017 Initiator awardee Aleksander Kostic, PhD
SUPPORTING PATHWAY TO STOP DIABETES

“At AstraZeneca, we push the boundaries of science to deliver life-changing medicines that transform the treatment of people living with diabetes, and we are passionate about supporting organizations and programs like the ADA Pathway to Stop Diabetes that share a similar mission and purpose. It is only through research that we will continue to advance that knowledge and understanding that has the potential to lead to new discoveries for people living with diabetes.”

—Naeem Khan, MD, Vice President, US Medical Affairs, Cardiovascular and Metabolic Disease, AstraZeneca
“The Lebherz Family Foundation is proud to support the ADA in its quest to cure diabetes. The young scientists bring new thinking and enthusiasm to the effort and great progress is being made.”

—Phil Lebherz, Lebherz Family Foundation Inc.

“At Merck we are committed to progressing diabetes research. While advancements are making a remarkable difference for patients, we recognize there is much more work to be done. That is why we are proud to support the Pathway Program and its important vision of finding the next generation of brilliant scientists to transform the future of diabetes research.”

-Sam Engel, MD, associate vice president, Merck clinical research, diabetes and endocrinology
Medical complications that develop during pregnancy, such as gestational diabetes, can affect the long-term health of mothers and their children. While most women with gestational diabetes return to normal immediately after delivering their babies, they remain at significantly higher risk of developing type 2 diabetes in the years immediately following pregnancy. Dr. Carter has designed an innovative and practical intervention, called Targeted Lifestyle Change Group Prenatal Care (TLC), that can be integrated in routine prenatal care. She will compare this approach to traditional prenatal care in a community of women who are predominantly low-income, African American, have high levels of obesity, and are at high-risk for developing gestational diabetes, to determine whether it improves health outcomes for both women and their children. If successful, this effort has the potential to mitigate the transgenerational risk for type 2 diabetes in high-risk populations.

Low blood glucose levels are a serious threat to people with diabetes—especially during sleep, when they are less aware of the condition and less able to safely counteract it by ingesting glucose. This danger leads to sleepless nights for patients and their caregivers. Using his background in materials science, Dr. Webber has outlined an innovative approach to proactively prevent the threat of low-blood glucose. His idea centers around the development of materials that can both sense glucose levels and respond to low glucose by automatically releasing the hormone glucagon. This approach will be automated and integrated into patient-friendly delivery devices, offering promise to provide a safe and care-free way to prevent potentially lethal glucose lows while mitigating a serious physical and psychological burden for people with diabetes.

Populations of African descent, including African-Americans, have high rates of type 2 diabetes, but we don’t yet understand exactly why. Dr. Sarah Tishkoff will use her expertise in the genetics of Africans to unravel the mysteries underlying this health disparity. She has identified three separate ethnically diverse African populations living indigenous lifestyles with widely different rates of diabetes. Through analyzing the differences in their DNA, immune systems and metabolism, Dr. Tishkoff seeks to understand why some indigenous populations are protected from diabetes, while others are at high risk. Understanding the risk factors for diabetes in populations of African ancestry is critical for developing better, more precise diagnostics and therapeutics and eliminating disparities in diabetes.
“I’m humbled and honored to accept the Pathway to Stop Diabetes award. I look forward to using the Pathway award to apply diabetes prevention interventions during pregnancy that have the potential to improve health outcomes for moms and their children for years to come.”

— Ebony B. Carter, MD
THE MENTOR ADVISORY GROUP

Each year, the Mentor Advisory Group, a collection of world-class diabetes research leaders, convenes to determine which applicants best embody the overarching Pathway to Stop Diabetes principles: Brilliant, Bold, Transformative. Their dedication to the program does not end there. Each successful applicant is assigned a Mentor Advisory Group mentor to help guide them to research and career success.

SILVIA CORVERA, MD
Chair, Mentor Advisory Group
University of Massachusetts Medical School, Worcester, Mass.

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Columbia University, New York

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Baylor College of Medicine, Houston

MARK S. ANDERSON, MD, PHD
University of California, San Francisco

DAVID A. ANTONETTI, PHD
University of Michigan, Ann Arbor, Mich.

MARK A. ATKINSON, PHD
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Cedars-Sinai Medical Center, Los Angeles, Calif.

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Beth Israel Deaconess Medical Center, Boston

ROHIT N. KULKARNI, MD, PHD
Harvard Medical School, Boston

LORI LAFFEL, MD
Joslin Diabetes Center, Boston

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University of Michigan, Ann Arbor, Mich.

DAVID M. NATHAN, MD
Harvard Medical School, Boston

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Icahn School of Medicine at Mount Sinai, New York

KAREN TALMADGE, PHD
Nabu Strategic Advisors, Los Altos Hills, Calif.
To our past, present and future corporate & philanthropic supporters: Your support for Pathway to Stop Diabetes is appreciated.

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1-800-676-4065, Ext. 2066

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2018 CONTRIBUTIONS TO PATHWAY TO STOP DIABETES

VISIONARY ($2.5 Million+)
DISCOVERY ($1.0 Million+)
INITIATOR ($500,000+)

CORPORATE CONTRIBUTORS ($100,000+)

“Novo Nordisk, as a Founding Sponsor has been proud to support this program which not only delivers the highest quality research in diabetes but also nurtures our most promising scientists of the future. The research carried out as part of the Pathway to Stop Diabetes is not just great ground breaking science but likely to reduce the burden of disease for people with diabetes.”
-Stephen Gough MD, FRCP (UK)
Senior Vice President and Global Chief Medical Officer, Novo Nordisk A/S

TO LEARN MORE ABOUT PATHWAY AND POTENTIAL SPONSORSHIP
CORPORATIONS SHOULD CONTACT:
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tctedotal@diabetes.org
1-800-676-4065, Ext. 2066

INDIVIDUALS AND FAMILY FOUNDATIONS SHOULD CONTACT:
ELAINE CURRAN
ecurran@diabetes.org
1-800-676-4065, Ext. 3413
Stop Diabetes ensures that new diabetes research leaders will continue the fight to end this disease.

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- Rick and Linda Ridley
- Robert Singley
- Bess Weatherman

* Cumulative contributions through December 31, 2018  **Deceased
“As long as people continue to live with diabetes, research that leads to better outcomes is needed. Lilly supports the Pathway Program because we are committed to finding new ways to improve the lives of people who are affected by this condition. With federal funding under increased pressure, diabetes research is at risk without important initiatives such as the Pathway Program. We applaud the American Diabetes Association for its commitment to funding this important work.”

-Sherry Martin, MD, Vice President, Medical Affairs, Eli Lilly and Company

* IN 2019, ELI LILLY AND COMPANY IS OFFERING TO MATCH ANY CONTRIBUTIONS FROM NEW SPONSORS UP TO $500K *