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Diabetes statistics cited in this report are provided by each researcher, not the ADA.

# Funding the Next Generation of Leaders in Diabetes Research

### A Message from ADA Leadership

The American Diabetes Association<sup>®</sup> (ADA) exists to improve care and help people with all forms of diabetes thrive, and ultimately, find a cure. Research at the ADA is the engine that drives clinical advances by catapulting them into practice. In 2023, we have had many significant victories. This report highlights some of the most prominent achievements.

One of the things we are most excited about is our strategic focus and how we are helping researchers cultivate concepts and establish collaborative networks to maximize their research and, ultimately, move their innovations into the hands of individuals with diabetes. This goal strikes the heart of the very nature and intention of ADA research—supporting scientists and moving discoveries into practice.

The Pathway to Stop Diabetes<sup>®</sup> (Pathway) program is an example of this kind of collaborative spirit and dedication. Pathway supports extraordinary minds at the peak of their creativity and provides them with the autonomy, flexibility, and resources to enable breakthrough discoveries in diabetes. Our formula is to invest in brilliant individuals with the most promising research approaches and strategically pair these individuals with world-class mentors to further enhance their work.

Moving forward, we continue to look for innovative projects that have high impact. The opportunities span all stages of diabetes research and include a wide array of research professionals.

In addition, this report highlights the ADA's 2023 Scientific Sessions, where researchers from all over the world shared exciting progress and study results with the global diabetes community. We are incredibly proud of our legacy of highlighting science and eagerly look forward to the 2024 Scientific Sessions!

We thank each of you for being part of our efforts and playing such a critical role in advancing our vision of life free of diabetes and all its burdens.

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**Charles Henderson** Chief Executive Officer

Robert A. Gabbay, MD, PhD Chief Science & Medical Officer



**Charles Henderson** Chief Executive Officer



Robert A. Gabbay, MD, PhD **Chief Science** & Medical Officer

## **Empowering Families for Healthier Outcomes**

Deep in the mountains of Kentucky, large extended families often live together on shared pieces of land called hollows. These intergenerational households are truly intertwined—they share living space, meals, caregiving duties, and more.

They also share a disproportionately high risk for type 2 diabetes. The prevalence of type 2 diabetes in Kentucky's most rural counties reaches 23%, more than twice the state average. The impact of diabetes is compounded by high rates of obesity, hypertension, high cholesterol, and other chronic health conditions.

These figures may be daunting, and so is the cultural mindset that type 2 diabetes and its complications are an inevitable part of life. But Brittany Smalls, PhD, MHSA, MSHPsych believes strong family units could be the key to changing the trajectory of type 2 diabetes and obesity across the lifespan in the Appalachian region of Kentucky.

## By tapping into tightknit family units, we can start to shift how people think about their health and how they think about each other.

Dr. Smalls has devoted several years of her career to helping rural-dwelling older adults in Appalachian Kentucky better manage their diabetes. It didn't take long to notice that her subjects' adult children and grandchildren could also benefit from her research.

With her ADA award, Dr. Smalls will be able expand her focus from older adults with type 2 diabetes to entire families with or at risk for the disease.

She is piloting a health intervention that leverages social support within family units to promote nutrition and physical activity, which are key to mitigating obesity and type 2 diabetes. Each participating family will receive a tailored six-month lifestyle plan. Only one adult needs a type 2 diabetes diagnosis for a household to be eligible, and a dietitian will engage them in medical nutrition therapy based on available foods. Participating families will receive ADA-backed recommendations for physical activity based on family members' physical ability.

A key strategy that Dr. Smalls plans to use is social networking analysis which helps identify community resources, such as access to healthy food and ways to participate in physical activity, or the lack of those resources close to participants' homes. By exposing participants to available local resources, she hopes they will tap into new ways to take care of their health and invite others to join them.

As word spreads, this work could start to chip away at the cultural beliefs about type 2 diabetes and improve the quality of life for rural Kentuckians. It could also hold implications for the nation's estimated 5.9 million intergenerational households.

Diabetes statistics cited in this report are provided by each researcher, not the ADA.



**Brittany Smalls** PhD, MHSA

#### Dr. Smalls, associate professor and Dr. Claire Louise Caudill Professor in Family Medicine in the Department of Family and Community Medicine at the University of Kentucky



### **Research Overview**

Since 1952, the ADA has had a strong commitment to progressing the fight against diabetes by awarding more than \$955 million dollars to researchers at leading institutions across the United States. Our organization has a long reputation of engagement and support of landmark studies that have yielded results that make diabetes a condition we know we can treat and often prevent.

While we have learned much, there is much left to discover about diabetes. The ADA remains committed to providing critical funding to support innovative scientific discovery that translates to better treatment, healthier lives, and eventual cures.

Today, our research strategy is more targeted and laser focused than ever before. This approach is helping us make meaningful, actionable changes in specific areas that are highly relevant to those affected by diabetes. As research advancements provide fresh insights into the ever-changing diabetes landscape, we are prepared to respond with targeted research to address the needs within our communities and to improve the lives of those living with diabetes.

While we have a targeted approach to funding, we are also continuing to invest in our many career and training awards. Investing in early career researchers is crucial for addressing the rising prevalence of diabetes and reducing the number of individuals afflicted by the condition. By supporting these researchers at the outset of their careers, we empower them to delve into innovative studies, explore novel treatment approaches, and uncover preventive measures. The complex nature of diabetes demands fresh perspectives and innovative insights, which early career researchers are uniquely poised to provide. Their enthusiasm can pave the way for breakthroughs that not only enhance our understanding of diabetes, but also yield transformative strategies for its prevention and management. Investing in these emerging talents is an investment in a healthier future for generations to come.

Currently, the ADA Research Programs team manages a portfolio of —







## **Targeted Research**

These recently funded studies in our priority research areas aim to solve critical problems facing people with and at risk for diabetes.

#### Targeting: Women's Health

American Indian and Alaska Native women develop gestational diabetes (GDM) at twice the rates of non-Hispanic white women. This puts both themselves and their babies at higher risk for developing type 2 diabetes later in life. Therefore, Dr. Brega feels that education about how to prevent GDM is a great opportunity to stem the intergenerational cycle of diabetes in Native families.

Focus groups will center the voices of Native girls and women, which helps Dr. Brega's team understand their social media habits and preferences. From there, her project will develop a toolkit and strategy for effectively sharing evidencebased recommendations, such as reaching a healthy weight before getting pregnant, which will be shared with her target audience via social media. The content will be adapted from the Stopping Gestational Diabetes in Daughters and Mothers educational program, which is culturally tailored for the Native audience.

"I'm so excited about the opportunities social media now poses for us in reaching these very diverse communities all around the country," she shares.

By improving their knowledge and behavioral confidence, Dr. Brega hopes to help prevent new cases of GDM and type 2 diabetes while reducing the health disparities that have often plagued Native communities.



Angela Brega, PhD University of Colorado Anschutz Medical Campus

James A. Landay, PhD Stanford University

### Targeting: Lifestyle Changes

Mobile health technologies like smartwatches and smartphone apps can help people be more physically active. However, their numbers-driven designs may be confusing and demotivating, especially for people with low literacy levels.

Dr. Landay believes there is a more effective way to present health-related information: narrative storytelling. His project will test whether culturally tailored storytelling can increase physical activity among middle-aged and older Hispanic/Latino adults who are at high risk for type 2 diabetes.

The Perfecto app prototype evolved from the more general WholsZuki app, which combines visual and textual storytelling on a user's smartphone lock screen to illustrate their progress toward weekly fitness goals. The average person checks their phone more than 200 times a day—and all those little pieces of qualitative feedback add up to real results.

Perfecto's narrative features Latino characters and cultural activities to appeal to their target audience. With this work, Dr. Landay hopes to influence how fitness apps are designed and help many more people reach their physical activity goals.

The computer scientist leads an interdisciplinary team of colleagues from Stanford's Health Sciences and English departments, one of whom is Latina. The ADA award "was such a good fit for what we were doing," Dr. Landay says. "We were lucky and honored to be selected for funding so we can take our work to the next level and potentially have an even bigger impact."

### Targeting: **Youth-Onset Type 2 Diabetes**

More than 70% of people with youth-onset type 2 diabetes develop high blood pressure during adolescence and young adulthood, magnifying their risk for heart disease and kidney failure. Medication and lifestyle changes are the go-to recommendations for hypertension, but all those habits can be time consuming and hard to stick to.

High-resistance inspiratory muscle strength training (IMST) has been shown to lower systolic blood pressure and improve heart and kidney function in adultswith an astounding adherence rate of 95%. This new lifestyle intervention involves breathing through a device to exercise the respiratory muscles, in just five minutes a day. Could it also work in youth?

Using state-of-the-art, non-invasive methods, Dr. Tommerdahl is gathering clinical, pathological, and molecular data to assess IMST's cardiac and kidney effects on young people with type 2 diabetes, ages 13 to 25, and learn more about the treatment's mechanism of action.

If her project is successful, it could have a dramatic positive impact on long-term health outcomes for youth with type 2 diabetes. IMST may hold potential for other high-risk populations as well.

"The ADA truly believes that researchers have the ability to change the face of diabetes management. Their support of our work is invaluable," she says.



**Rachel Wasserman** 

Daniels, PhD Nemours Children's Hospital

found "empowering and validating." She hopes these strategies will help youth feel more in control of stressful situations, so they can make more thoughtful decisions about their diabetes care and improve their overall wellbeing.

"When [the ADA] shows investment in focusing on emotional wellbeing and mental health [for people with diabetes]...it makes me excited and optimistic that there are going to be changes." says Dr. Wasserman Daniels.



Kalie L. Tommerdahl, MD University of Colorado Anschutz Medical Campus

### Targeting: Mental Health

Adolescents experience a lot of social and emotional stresses, and diabetes management is often at odds with the pressure they feel to fit in. For example, a teen with type 1 diabetes might skip a mealtime bolus to avoid injecting insulin in front of friends for fear of not fitting in. Bottom line: They have the skills and tools to manage diabetes, but not the necessary emotional regulation that may come along with living with this chronic disease.

Dr. Wasserman Daniel's research aims to pilot a new way of supporting young adolescents (ages 11 to 14) with the everyday emotional burdens of life with type 1 diabetes. The pediatric psychologist co-created an online group intervention with youth living with type 1 diabetes, a process participants

### **Showcasing Science**



These ADA-funded researchers are having a big impact on the future of diabetes prevention and care.



Anna Kahkoska, MD, PhD University of North Carolina at Chapel Hill

#### **Type 1 Diabetes Interventions**

Up to 40% of adults with type 1 diabetes experience diabetes distress, but many cases go undetected and untreated—which can lead to poorer self-care behaviors, blood glucose levels, and quality of life.

Dr. Kahkoska's study seeks to implement an evidence-based virtual intervention for adults over the age of thirty living with type 1 diabetes in the clinical settings where they receive their routine diabetes care. Participants with diabetes distress are identified through a new screening process within the University of North Carolina at Chapel Hill's electronic health records system. Along the way, she will gather data about which interventions work well and for whom so algorithms can match people to optimal diabetes distress treatments in the future.

"Thanks to the commitment and work of people who precede me, there is a robust evidence base that I get to focus on translating, so it impacts people with diabetes at scale," she says.

#### **Access for Hispanic Communities**

Hispanic populations have a 50% greater chance of living with diabetes and complications from diabetes. Dr. Aleman is analyzing patient data from the U.S. Veterans Health Administration (VA) for potential disparities in how Hispanic veterans are evaluated and treated for obesity and type 2 diabetes. He'll also measure differences in long-term patient outcomes tied to demographic factors and therapies prescribed in routine care. "The power of the numbers available to us [through the VA] is that we can make observations that wouldn't be possible in clinical trials," he says. Dr. Aleman hopes his work will help the Hispanic community gain equitable access to modern diabetes and weight loss medications, specifically GLP-1 receptor agonists, and help his endocrinology colleagues become more in tune with how different racial and ethnic groups respond to treatment.

This grant was funded through the ADA's partnership with the Centers for Diabetes Translation Research (CDTR), at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) at the National Institutes of Health (NIH).



#### Improving Outcomes for the Deaf Community

The Deaf community has a disproportionately high rate of diabetes, but they struggle to get adequate care in a health care system designed for hearing people. To address this language access disparity, Dr. Litchman has piloted a diabetes self-management education and support (DSMES) telehealth program designed by and for people who are deaf.

Michelle L. Litchman, PhD, FNP-BC, FAANP **FADCES, FAAN** University of Utah

The weekly Deaf Diabetes Can Together (DEDICATE) intervention uses deaffriendly components such as videos, storytelling, and visual demonstrations in American Sign Language. With her ADA funding, Dr. Litchman has been able to produce more educational videos and train more people who are deaf as community health workers, who help lead the small-group sessions. She hopes to show that DEDICATE improves participants' A1C, self-efficacy, and diabetes distress.

Dr. Litchman's work draws from personal experience, too. Several family members, including her mother, are deaf or hard of hearing. "Without doing a deep dive into these systemic barriers, we're never going to be able to support the Deaf community," she says. "I see myself as being that bridge."

Learn more about Dr. Litchman's research in the short film Language of Care, which premiered at the Sundance Film Festival in 2023.



Jose Aleman, MD, PhD New York University School of Medicine



## **2023 New Grant Recipients**

#### Improving the Lives of Women with Diabetes Across the Lifespan

These projects seek to better understand clinically important sex and gender differences to optimally inform prevention, diagnosis, and treatment strategies for women across the lifespan and the development of sexspecific clinical guidelines where warranted.





Angela Brega, PhD University of Colorado Denver

Maria Golson, PhD Johns Hopkins University



Rachel Miller, PhD University of Pittsburgh



### Supporting the Psychological and Emotional Needs of People with Diabetes

These projects seek to better understand how to improve all aspects of the integration of mental health care into clinical settings serving people with diabetes, especially for families with a lower socioeconomic status where health disparities are most evident.







Jill Weissberg-Benchell, PhD, CDCES Ann and Robert H. Lurie Children's Hospital of Chicago



Jessie Wong, PhD Stanford University



Daniela Herrera Moro Chao, PhD University of Minnesota

University of North Carolina at Chapel Hill



Yilin Yoshida, PhD **Tulane University** 



Shelagh Mulvaney, PhD Vanderbilt University



**Rachel Wasserman Daniels, PhD** Nemours Children's Hospital

## **2023 New Grant Recipients**

### Tackling the Epidemic of Youth-Onset Type 2 Diabetes

These projects address key knowledge gaps in youth-onset type 2 diabetes to better understand, prevent, treat, and ultimately induce remission for the rapidly increasing numbers of affected individuals.



Layla Abushamat, MD MD Baylor College of Medicine



Bethany Cartwright, MD, PhD University of Texas Southwestern Medical Center at Dallas

Laura Pyle, PhD

University of Colorado

Anschutz Medical Campus



Lauren Gulley, PhD Colorado State University



Kalie Tommerdahl, MD University of Colorado Anschutz Medical Campus



The ADA proudly partners with the Centers for Diabetes Translation Research (CDTR), a program funded by the NIDDK at the NIH. The CDTR's aim is to improve the translation of research findings related to diabetes prevention, treatment, and health equity by supporting research across the translational spectrum. The ADA has supported the following pilot and feasibility projects to advance research in health disparities and health equity through highly specialized technical expertise, as well as support research resources to established and early-stage investigators. For more information about the CDTR program, please visit diabetes-translation.org.



Charlotte W. Chen, DO Albert Einstein College of Medicine



Lauren Au, PhD, RDN

Kaiser Foundation Research Institute

Jacob Kariuki, PhD Emory University





Soren Harnois-Leblanc, PhD Harvard Pilgrim Health Care



Lauren Wisk, PhD University of California, Los Angeles



Leah Robinson, PhD University of Michigan



Sarah Farabi, PhD Washington University



Terri J. Sabol, PhD Northwestern University

### **Funding the Next Generation of Leaders in Diabetes Research**

#### Investing in Postdoctoral Fellowship Awards is crucial for addressing the rising prevalence of diabetes and reducing the number of individuals afflicted by the condition. By supporting these researchers at the outset of their careers, we empower them to delve into innovative studies, explore novel treatment approaches, and uncover preventive measures. The complex nature of diabetes demands fresh perspectives and insights, which early career researchers are uniquely poised to provide. Their enthusiasm can pave the way for breakthroughs that not only enhance our understanding of diabetes, but also yield transformative strategies for its prevention and management. Investing in these emerging talents is an investment in a healthier future for generations to come.

While the ADA has a longstanding tradition of offering postdoctoral fellowship awards, we observed that a different approach was needed to encourage more potential applicants to apply for these awards. In spring 2023, the ADA tried something new—issuing a dedicated request for applications (RFAs) exclusively tailored for postdoctoral researchers. This initiative, distinct from our targeted RFAs, welcomed applications spanning a wider spectrum of diabetes research aiming to invigorate and diversify the pool of talent dedicated to advancing our understanding of diabetes.

To review this pool of postdoctoral fellowship award applications, we solicited a group of new and seasoned reviewers, many of them past ADA grantees themselves. All applicants were provided with expert feedback on their submissions, regardless of whether they were chosen for an award, to encourage them to continue their pursuits.

We're thrilled with the results, which have added 25 postdoctoral fellows to the ADA's research portfolio.

It's all part of the ADA's commitment to nurturing a pipeline of leaders in diabetes research and supporting them at every stage along the way. "This postdoctoral fellowship funding could launch a great career, great growth, and great research in the future," shares Marlon Pragnell, PhD, the ADA's vice president of research & science.



professor at an R1 university, thanks in large part to the experience and support provided by the ADA.

Frank T. Materia, PhD, MHS, University of Kansas Medical Center, Postdoctoral Fellow (2022)







lltan Aklan, PhD University of Iowa

Juan Antonio Requena-Ibáñez, MD Mount Sinai Hospital





Feng Gao, PhD Nelmari Del Carmen Ruiz Otero PhD Baylor College of Medicine Johns Hopkins University





Sunhee Jung, PhD Rotem Kaley-Altman PhD University of California, University Of Chicago





Jeu Park, PhD

Daniel S.Nuyujukian, PhD Phoenix VA Joslin Diabetes Center Inc Health Care System





Dan Shan, PhD Siddharth Sunilkumar, PhD Pennsylvania State Temple University University School of Medicine



Irvine





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## **2023 Postdoctoral Fellowship Awardees**



Megan L. Baker, MD Yale University



Julie Bejoy, PhD Vanderbilt University Medical Center



Xinxin Chen PhD University of Virginia

Hannah Guak PhD University of Michigan



Alicia Huerta-Chagoya, PhD Broad Institute, Inc



Masa Josipovic, MD, PhD Harvard College



Ikjun Lee, PhD University of California, Berkelev



Yongxiang Li, PhD Baylor College of Medicine



Cassie Mitchell PhD University of Oklahoma Health Sciences Center



Sungho Park, PhD University of Colorado, Denver



Magdalena Perez-Cardelo, PhD Yale University



Leeana D. Peters, PhD University of Florida



Fenfen Wang, PhD University of Texas Health Science Center at Houston



Yi Wang, PhD Yeshiva University



Yue Wu, PhD Stanford University

### Nutrition & Lifestyle Workshop: Bringing Researchers Together



At the ADA, we believe in not only fueling groundbreaking research, but also in catalyzing scientific advancement through collaboration and knowledge sharing. Last November, we gathered a cohort of esteemed ADA-funded investigators for the Innovative Nutrition and Lifestyle Strategies for Diabetes Prevention and Care in Underserved Communities Workshop that was held at the ADA's headquarters in Arlington, Virginia. The workshop provided participants with an opportunity to exchange insights, openly discuss challenges, and spark innovative solutions-furthering the ADA's commitment to fostering a vibrant research community.

The workshop featured nine nutrition and behavioral health researchers who seek to develop personcentered, yet scalable, dietary and lifestyle interventions with the greatest potential for adoption and maintenance of diabetes preventing or diabetes-mitigating lifestyles by individuals at greatest risk.

Their projects explore approaches for improving healthy living outcomes among a wide range of high-risk, underserved populations, from diabetes nutrition education for American Indian/Alaska Native people, to exercise programs for Black people, to obesity prevention among Hispanic/Latino infants and toddlers. Much of their research involves engaging with each community to learn firsthand what might work to encourage healthy behavior changes before an intervention is even tested.

How we eat, socialize, and spend our time can be very cultural and location specific. "Diabetes is almost everywhere, but the best way to tackle it is not a uniform approach. A strategy that works for one community may not translate to or resonate with another," Marlon Pragnell points out.



This workshop also provided these grantees the opportunity to meet and network with program officers from the NIDDK/NIH who are always on the lookout for great scientists to fund. Knowledge of these institutions' research priorities improves investigators' chances of securing future funding for larger trialsand bringing their ideas to life.

Receiving a grant from the ADA is, in many ways, just the beginning. Our research program provides wraparound support to our grantees well beyond the funding itself. That means creating a sense of community among ADA-funded researchers with shared professional interests, as well as opening doors for the next phase of their work.

"We want not just to fund the awards, but to facilitate and increase the likelihood they will succeed," says Robert Gabbay, MD, PhD, the ADA's chief scientific & medical officer.

I feel so supported as I continue to expand our What Can I Eat? for American Indians and Alaska Natives with T2D work. I look forward to future engagement with the other ADA grantees and everyone at the ADA.

Sarah Stotz, PhD, MS, RD, CDE, University of Colorado

### Thank You, Reviewers!

We would like to take a moment to express our deepest gratitude for the effort and expertise of the researchers that generously volunteered their time to serve on various review panels in 2023.

Each application is reviewed by at least three external scientific experts in the diabetes field and are carefully selected by the Research Program team based on their area of expertise.

Their commitment to excellence and willingness to provide constructive feedback was instrumental in shaping the outcome of the 250+ applications submitted this year. All applicants, including those that were not selected for funding, have benefited from the constructive feedback shared in their reviews.

It is important to note that their insights not only helped us identify projects that push the boundaries of diabetes research, but also contributed to the career development and growth of these applicants.

Nancy A Allen, PhD University of Utah

Rita Basu, MD University of Virginia

Susan Cheng, MD Brigham and Women's Hospital

Jacob E. Friedman, PhD University of Colorado Health Sciences Center

Rachel Goode, PhD University of North Carolina at Chapel Hill

Meizi He, MD, PhD University of Texas at San Antonio

Corinne G Jolivalt, PhD University of California, San Diego

Megan Moriarty Kelsey, MD University of Colorado Health Sciences Center

Siew Lim, PhD Monash University

Dr. Dragana Lovre, MD Tulane University

Timothy J Lyons, MD Medical University of South Carolina

Gail D Melkus, EdD New York University

Dr. Noel T. Mueller, PhD Johns Hopkins

Dr. Helen Murphy, MD University of East Anglia

Judith G. Regensteiner, PhD University of Colorado Health Sciences Center

Hui Shao, PhD University of Florida School of Medicine

Dr. Alan Sinaiko, MD University of Minnesota Dr. Sathish Thirunavukkarasu, PhD Emery

Dr. Licy Yanes Cardozo, MD University of Mississippi Medical Center Dr. Jane Yardley, PhD University of Alberta

Danny C. Duke, PhD Oregon Health & Science University

Rachel Goode, PhD University of North Carolina at Chapel Hill

Anna Kahkoska, MD, PhD University of North Carolina at Chapel Hill

Dr. Jessica Kichler, PhD University of Windsor

Diana Naranjo, PhD Stanford University School of Medicine

Randi Streisand, PhD Children's Research Institute

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Owen Chan, PhD University of Utah

**Bhagirath Chaurasia, PhD** University of Iowa

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Michael D. Dennis, PhD Pennsylvania State University School of Medicine

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Lily Q. Dong, PhD The University of Texas Health Science Center at San Antonio

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University of Alabama at Birmingham

Rebekah J Walker, PhD Medical College of Wisconsin Qiong Wang, PhD Beckman Research Institute of City of Hope

Wang Wang, MD, PhD University of Washington

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### **Pathway to Stop Diabetes**

## Pathway to Stop Diabetes: 2023 Award Recipients

The ADA's Pathway program was founded with a singular vision: to introduce a new generation of brilliant scientists to diabetes research. The ADA supports Pathway scientists for five to seven years, giving them the freedom to explore new ideas without the constraints of traditional project-based funding.

Pathway awardees are selected by the ADA's Mentor Advisory Group—an assemblage of eminent scientists from diabetes research and other fields who personify the core elements needed for exceptional science: rigorous thought processes, keen intellect, and the capacity for innovation, creativity, and productivity. In addition to the selection process, the mentors will provide ongoing scientific and career advice to Pathway researchers throughout the duration of the awards, creating a challenging and collaborative environment in which transformative science can thrive.

To date, the program has been incredibly successful with over





Over the past decade, this initiative has successfully propelled 39 scientists into independent faculty positions, resulting in numerous inventions, patents, startups, and published manuscripts, showcasing its transformative impact on diabetes care.

I cannot be thankful enough for what the ADA's Pathway program has provided me. With it, I have been able to meet some of the most influential people in the field and other ambitious fellow junior investigators that I hope to work with throughout my career. In addition, it helped me secure my first independent faculty position where I have been able to move my research program into new, exciting directions. The award and program truly helped set me up for success.

Jonathan Flak, PhD, **Indiana University School of Medicine** 





Initiator Award

Emerging evidence indicates that disruption of the circadian clock—that internal rhythm that governs essential bodily functions from sleep to body temperature to digestion—is a major contributor to metabolic disease. Dr. Hepler's study will delve into the complex relationship between the circadian clock and the inflammation of adipose tissue (fat cells) present in people with obesity, and its ensuing impact on metabolism. Her investigation could pave the way for new therapies to manage obesity and type 2 diabetes.

Chelsea Hepler, PhD Northwestern University

"This award will serve as a catalyst for my commitment to making meaningful contributions to the field, and I am truly grateful for the opportunity to make a lasting impact on diabetes research." - Dr. Hepler

#### **Accelerator Award**

Type 2 diabetes is a complex disease, likely caused by a combination of genetic, environmental, and lifestyle factors. Genome-Wide Association Studies have identified over 700 genetic variants that could put a person at risk, but understanding exactly how genetic signals lead to the onset of type 2 diabetes remains a challenge.

Dr. Sobriera's work will leverage advanced methodologies such as data science, disease modeling, and genetic screening to help bridge that gap. By translating genetic findings into meaningful biological knowledge, her Pathway research could shed light on new ways to predict and prevent type 2 diabetes-a major step in curbing this epidemic that affects about 10% of Americans.

"The funding from the ADA will have a transformative impact, enabling me to delve into unraveling the complexities of diabetes by studying DNA variations that will contribute to the risk of developing diabetes." - Dr. Sobreira



Lu Wang, PhD

**Tufts University** 

**Initiator Award** 

A healthy diet is a cornerstone of diabetes management. However, today's food environments make it hard to choose nutritious foods. This is particularly true for people with low incomes who, in addition to financial constraints, often grapple with limited transportation access, low levels of nutrition literacy, and other barriers to healthy eating.

Could the ever-growing popularity of online grocery shopping, combined with the rapid expansion of the Supplemental Nutrition Assistance Program (SNAP) online purchasing program, present a solution? Dr. Wang will investigate whether healthy shopping "nudges" and financial incentives, delivered in an online retail setting, can promote healthier food choices, support diabetes management, and improve health equity among this underserved community.

"By opening up new research avenues, this Pathway award will facilitate my growth as an independent investigator equipped with multidisciplinary skills, enabling the production of high-quality evidence to address the public health challenges of diabetes and health disparities." - Dr. Wang

Diabetes statistics cited in this report are provided by each researcher, not the ADA.



**Debora Rodrigues** Sobreira, PhD The Regents of the University of California, Los Angeles

### **Pathway to Stop Diabetes Award Winners**

#### 2014

#### **Michael Dennis, PhD**

The Pennsylvania State University Hyperglycemia-Induced Translational Control of Gene Expression in the Retina

#### Stephen Parker, PhD

University of Michigan Deconstructing Type 2 Diabetes Using Genome-Wide High-Density Multi-Tissue 'Omics' Profiling

#### Kathleen Page, MD

University of Southern California Neural Mechanisms in Maternal-Fetal Programming for Obesity and Diabetes

#### Wolfgang Peti, PhD University of Arizona Pathwavs to a Cure: Novel. Innovative Insights into Insulin Signaling and

Regulation using NMR Spectroscopy

#### Joshua Thaler, MD, PhD

University Washington Modulating Glial-Neuronal Interactions to Treat Obesity and Diabetes

#### 2015

#### Mayland Chang, PhD

University of Notre Dame A Strategy to Accelerate Diabetic Wound Repair

#### **Thomas Delong**, PhD

University of Colorado Denver The Role of Hybrid Insulin Peptides in the Development of Type 1 Diabetes

#### Zhen Ghu, PhD

University of California, Los Angeles Bio-Inspired Synthetic Pathway for Closed-Loop Delivery of Insulin and Glucagon

#### Marie-France Hivert, MD

Harvard Pilorim Health Care Understanding Pathways of Fetal Metabolic Programming to Stop the Transgenerational Risk of Diabetes

#### Celine Riera, PhD

Cedars-Sinai Medical Center Identification of Sensory Neural Circuits Controlling Metabolic Disorders

#### Stephanie Stanford, PhD

University of California, San Diego PTPN22: Model Gene to Unravel the Interaction Between Genetics and Environment in T1D

#### 2016

#### Daniel Ceradini, MD New York University School of Medicine Therapeutically targeting Keap1/Nrf2 dysfunction in diabetes

#### Zachary Knight, PhD

University of California, San Francisco Reinvestigation of the arcuate feeding circuit

#### Andrew Scharenberg, MD

Seattle Children's Hospital Regulatory T-cell stabilization via gene editing as novel therapy for Type I diabetes

#### Praveen Sethupathy, PhD

Cornell University Systems approach to defining genetic regulation of intestinal physiology and gut microbiota in diet-induced obesity

#### Sui Wang, PhD

Stanford University School of Medicine Dissection of Gene Regulatory Networks underlying Diabetic Retinopathy

#### Phillip White, PhD

Duke University A new homeostatic mechanism for metabolic control

#### 2017

#### Paul Cohen, MD, PhD The Rockefeller University Dissecting the role of beige fat in metabolic homeostasis

Jonathan Flak, PhD Indiana University School of Medicine Targeting the VMN to Understand Hypoglycemia Pathogenesis

#### Aleksandar Kostic PhD

Joslin Diabetes Center Generation of an in vivo system for dissection of the human type 1 diabetesassociated microbiome

#### Sumita Pennathur, PhD University of California, Santa Barbara

Untethering diabetes through innovative engineering

#### David Spiegel, MD, PhD

Yale University School of Medicine Targeting glucosepane crosslinks in diabetes

#### Sarah Stanley, MD, PhD

Icahn School of Medicine at Mount Sinai Central nervous system regulation of glucose metabolism

#### 2018

#### John Campbell, PhD

The Rector and Visitors of the University of Virginia Molecular and functional taxonomy of vagal motor neurons

Samie Jaffrey, MD, PhD Joan & Sanford I.Weill Medical College of Cornell University Rewiring cellular metabolic networks in diabetes

Alexander Nectow, MD, PhD Columbia University Investigation of Brainstem Neurons Regulating Energy Balance

#### Michael Stitzel, PhD

The Jackson Laboratory Deciphering Longitudinal Cell Type-Specific Defects in Diabetes Pathogenesis

#### Randi Streisand, PhD

Children's Research Institute Improving health communication during the transition from pediatric to adult diabetes care

Jonathan Sweedler, PhD University of Illinois at Urbana-Champaign Unraveling diabetes progression a cell at a time

### 2019

#### Ebony Carter, MD

University of North Carolina at Chapel Hill Targeted lifestyle change group prenatal care for obese women at high risk for gestational diabetes: a randomized controlled trial

#### Sarah Tishkoff, PhD

University of Pennsylvania Genetic risk factors for adult-onset diabetes in populations of African Ancestry

#### Matthew Webber, PhD

Hypoglycemic rescue with glucoseresponsive glucagon delivery devices

### 2020

Judith Aqudo, PhD

Dana-Farber Cancer Institute Harnessing immune privilege mechanisms from stem cells to protect beta-cells from immune attack

#### Maxence Nachury, PhD

University of California, San Francisco Regulation of body weight homeostasis and beta cell function by primary cilia

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Barbara Kahn, MD Beth Israel Deaconess Medical Center

Rohit Kulkarni, MD, PhD Joslin Diabetes Center

Lori Laffel. MD. MPH Joslin Diabetes Center

David Nathan, MD Massachusetts General Hospital

2022

Lisa Beutler, MD, PhD

of gut-brain circuits

University of North Carolina at Chapel Hill Fusing rapid-cycle testing and adaptive interventions: A scientific pipeline to translate and individualize evidence-based psychosocial and behavioral interventions in routine type 1 diabetes care

University of Notre Dame

Northwestern University Medical School Dissecting sugar-induced modulation

#### Anna Kahkoska, MD, PhD

#### 2023

#### Chelsea Hepler, PhD

Northwestern University Integration of circadian and inflammatory pathways in metabolic homeostasis

#### Debora Rodrigues Sobreira, PhD

The Regents of the University of California. Los Angeles Linking variants to function: understanding the genetics of type 2 diabetes through multi-omic data

#### Lu Wang, PhD

Tufts University Leveraging the online grocery shopping environment to improve diet and advance health equity

Jane Reusch, MD University of Colorado Denver

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### **2023 Active Research Awardees**

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**Rachel Daniels, PhD** Nemours Children's Hospital, Florida

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## **Scientific Sessions by the Numbers**

In June 2023, the ADA hosted the 83<sup>rd</sup> Scientific Sessions in San Diego, California-the world's premier meeting for diabetes professionals. In 2023, we reached a broader reach than ever with in-person and hybrid options for attendees. The latest scientific findings in diabetes research, prevention, and care were shared through:





in addition to providing networking opportunities for

Register for the 84<sup>th</sup> Scientific Sessions at scientificsessions.diabetes.org.

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-@-216 **EDUCATIONAL SESSIONS** (symposia, debates, panels)



OVER **11,000** ATTENDEES FROM **115** COUNTRIES

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