Continual, sustainable improvement is a key element of Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative.

In each of our four years, we have made a greater impact upon the health of Utahns than in the year before.

This is the result of careful study. At every step of the way, we have researched our programs, learning what was working and what needed refinement.

Never was the importance of this self-research more valuable than in Year 4, as Utah battled the COVID-19 pandemic. Having quickly modified our patient-focused services during Year 3, the initiative proved a powerful ally for the state during its fourth year—thanks in part to the Miller Foundation’s willingness to deploy the Wellness Bus alongside Utah public health officials to provide COVID-19 testing for our underserved citizens.

While we helped the state face this unprecedented public health crisis, we never lost sight of our true mission: addressing diabetes head-on. With safety-related modifications in place, our school-based programs redesigned their curricula for better online delivery, our clinical programs increased the number of patients they saw by offering care through telehealth platforms, and our programs serving people experiencing homelessness improved the infrastructure of resource centers. All of these steps will impact people for years to come.

We are incredibly grateful for those who have partnered with the University of Utah to launch the Driving Out Diabetes Initiative, in particular the Larry H. and Gail Miller Family Foundation. Together, we have improved the health and well-being of thousands of Utahns.

We hope you share our joy at what we have achieved together, and that you share our enthusiasm about the future of this life-changing program. On behalf of the University of Utah, we thank you for your investment in our university, our program, and the many people whose lives are impacted by diabetes.

Driving Out Diabetes Leadership Team

Angie Fagerlin, PhD
Director, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; Professor and Chair, Population Health Sciences

Amy Locke, MD

Robin Marcus, PhD, PT

Jared Rutter, PhD

Scott Summers, PhD

Julie Metos, PhD, MPH, RD

Corrine Welt, MD
Impact at a Glance

**Community Health and Wellness**
- Identify people who have higher chances of developing diabetes and target this population for diabetes prevention strategies
- Educate Utahns of all ages about diabetes and the benefits of healthy lifestyle choices, taking this message to where people learn, pray, and play

**Clinical Care**
- Deliver new models of clinical care to those who already have diabetes

**Research, Discovery, and Innovation**
- Invest in innovative research to discover scientific breakthroughs that will lead to improved treatments, and eventually to cures

**We set out to**

**In Year 4**

The Driving Out Diabetes Initiative brought the Wellness Bus into underserved communities where people were disproportionately at risk for COVID-19, providing testing and diabetes education and screenings.

**Since launching we have**

- Screened more than 4,300 people at the Wellness Bus
- Tested 13,702 people for COVID-19 and educated them on staying healthy and safe
- Taught hundreds of underserved people in Salt Lake County strategies to improve health and well-being
- Taught 17,000 students in socioeconomically disadvantaged high schools how to lead healthier lives through Team Thrive
- Reached 74,041 middle school students in 3 states through Crush Diabetes
- Served 1,602 people at homeless or transitional housing facilities; improved access to food through transportation, infrastructure, and knowledge
- Identified and screened 361 people with diabetes who had not undergone recommended yearly eye screening
- Implemented new AI camera system to get retinal screening results faster and speed up referrals

**The Driving Out Diabetes Initiative adapted to the needs of Utahns and expanded access to clinical programs through telehealth platforms and artificial intelligence technologies.**

**The Driving Out Diabetes Initiative supported six projects to seed new innovations and recruited an additional five diabetes researchers pursuing questions from new therapies to better prevention strategies.**

- Educated 342 people in our Intensive Diabetes Education and Support (IDEAS) Program, improving their blood sugar levels and their outlooks on their disease
- Adapted IDEAS program to take place over 4 hours rather than 8, which will maintain the impact of, and increase access to, the program
- Identified and screened 361 people with diabetes who had not undergone recommended yearly eye screening
- Implemented new AI camera system to get retinal screening results faster and speed up referrals
- Expanded our research faculty to include 100+ investigators who garner $43M annually in research grants to investigate diabetes
- Recruited more than 41 investigators since launching the Driving Out Diabetes Initiative who are researching diabetes from its causes and prevention to its treatment and management
Since the Beginning

MAP OF PROGRAMS

128,273 TOTAL LIVES TOUCHED

74,041 CRUSH DIABETES
18,079 THE WELLNESS BUS
17,000 TEAM THRIVE
14,802 PREDIABETES SCREENING
2,046 HEALTH COACHING
1,602 FOOD, MOVEMENT, AND YOU
703 CLINICAL PROGRAMS

PROGRAM LOCATIONS
- Health Coaching
- Prediabetes Screening
- Clinical Programs
- The Wellness Bus
- The Wellness Bus COVID-19 Locations
- Crush Diabetes Childhood Program
- Team Thrive Childhood Program
- Food, Movement and You Childhood Program

The State of Utah Joins Us in the Fight Against Diabetes

The impact made by Driving Out Diabetes has been recognized by the State of Utah. In 2021, the state approved a $500,000 annual, ongoing appropriation, which will support community outreach programs and the clinical diabetes management program.

The state’s support adds to an impressive list of private and public partners. Year after year, partnerships help make it possible to care for an increasing number of Utahns.

Other partners include The Road Home’s Midvale Family Resource Center, Utah Transit Authority, Redwood Recreation Center, Kearns Library, Central Park Community Center, Community Action Services, Weber County Library, West Valley City, West Valley Granger Stake, Kearns Recreation Center, Centro Civico Mexicano, Hartland Center, Second Baptist Church, Utah Cultural Celebration Center, Utah State Fairpark, Guadelupe School, Victory’s Event Center, Alliance Community Services, Community Building Community, OCA - Asian Pacific American Advocates, Project Success, Somali Community Self-Management Agency, Utah Pacific Islander Health Coalition, Latino Behavioral Health, and Regence.
Responding to a Crisis

COVID-19 has posed an unprecedented challenge to our work and a potentially lethal threat to both Utahns and our team members.

With the full support of the Larry H. and Gail Miller Family Foundation, we transformed the Wellness Bus into a mobile COVID-19 testing unit in April of 2020. The bus quickly became an important component of the Utah Department of Health’s COVID Community Partnership (CCP).

The partnership, which included 16 community-based organizations and 12 local health departments, addressed disparities in COVID-19 related health outcomes among underserved racial/ethnic minority communities in Utah. The Wellness Bus worked with the COVID Community Partnership to:

- Increase access to testing in these underserved communities.
- Mobilize community health workers to provide education, prevention, testing, and access to resources for members of these communities.

15,477 COVID tests

- 19 percent of those tested were positive for COVID, compared to the state average of 11 percent positivity
- The most common needs of the 13,702 people tested for COVID were housing, food, and utility assistance

Community Health and Wellness

People were challenged like never before last year. We faced significant barriers to forming connections with underserved communities.

Our goal—arming those at risk for diabetes with education and strategies to live healthier lives—took on added importance as people stayed put more than usual.

Our solution was to redesign nutrition education to help teachers and students, to launch new projects to help those experiencing food insecurity, to strengthen existing community partnerships through the Wellness Bus, and to create new collaborations to address developing needs across Salt Lake County and beyond.

These methods proved effective, and they will last beyond the pandemic. We will continue to serve communities in innovative ways, and we will leverage the trust of our community partners to do even more good.

Amy Locke, MD
Leadership Team, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; University of Utah Chief Wellness Officer; Professor, Family and Preventive Medicine

Robin Marcus, PhD, PT
Leadership Team, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; Professor, Physical Therapy and Athletic Training

Julie Metos, PhD, RD
Leadership Team, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; Professor, Nutrition and Integrative Physiology

BY THE NUMBERS: YEAR 4

3 states
108 schools
45 languages spoken
45 community partnerships
The Wellness Bus creates healthier communities in Utah by bringing preventive services directly to Utahns who otherwise lack access to quality health care.

Since the Bus welcomed its first clients in 2017, it has built trust in hard-to-reach communities and become a visible symbol of health and wellness in the state of Utah.

That trust made the bus a valuable resource for the state in 2020-’21, allowing it to serve as a barrier-free COVID testing site in communities where hesitation toward the medical system was prevalent. Wellness Bus leadership worked with partners across the Salt Lake Valley and state to offer COVID testing, and together the Bus became a key part of the COVID Community Partnership, led by the Utah Department of Health Office of Health Disparities.

A letter from the Office of the Mayor of Salt Lake City to Wellness Bus manager Nancy Ortiz

Dear Nancy,

I am a huge fan of your work. I just wanted to say how wonderful it was to have you and the Wellness Bus step up in a major way to help the community during this crazy time. I really don’t know how we would have done it without you. Thank you to your team from the Mayor’s Office at SLC for your equitable approach to healthcare and adaptation of your work to address the needs of the pandemic – we weekly would get your emails and share the information to our lists. It was spread far and wide. I should have reached out earlier but hope that in the future if you need anything, I hope you will feel like you can reach out to me.

Thanks again so much for your amazing work!

Weston Clark

Weston Clark
Director of Community Outreach, Office of the Mayor of Salt Lake City

The Wellness Bus

15,477 COVID tests

- 37 percent Hispanic/Latino
- Majority were uninsured
- 45 languages spoken by those who were tested at the Bus
- 32 percent of those tested did not speak English

The Wellness Bus returned to chronic disease prevention and education in February 2021.

The Bus is providing health screenings, nutrition and physical activity education, and health coaching through weekly visits to communities across Salt Lake County. In 2021, we added two new sites, Provo and Ogden, and continued to visit West Valley City, Glendale, Kearns, and South Salt Lake.

- The Wellness Bus has served 10,238 people in Year 4 across COVID-19 and chronic disease activities.
- Participants who have come to the Bus repeatedly have lost weight, reduced their blood pressure, and reduced triglycerides.
- The Bus has informed 233 people that their blood sugar levels were higher than they had previously known. Of those, 68 people have blood sugar in the diabetic range.

The Wellness Bus is a trusted partner, both among community members and community-based organizations. This year we formed new partnerships with:

- Community Nursing Services to provide flu shots for those without access
- Utah Department of Health to provide chronic disease prevention service to Native Hawaiian/Pacific Islander women
- Utah Food Bank and Intermountain Healthcare to provide nutrition education hand-in-hand with food access in underserved areas of Salt Lake County
- COVID Community Partnership to test community members for COVID-19, screen them for social needs, and educate about public health guidance
Community Health and Wellness

We strive to educate Utahns of all ages about diabetes and the benefits of healthy lifestyle choices.

We focus our childhood and family prevention efforts through two approaches: 1) embedding nutrition education into middle and high school curriculum, and 2) engaging with low-income families and families experiencing homelessness.

School-Based Programs

During a time of uncertainty, we supported teachers and students as they faced unprecedented challenges to learning.

We pivoted to virtual curriculum materials—endorsed by the Utah State Board of Education—to support teachers and students as they were engaging from home, and prioritized teaching teachers to increase the sustainable impact of our school-based programs, Team Thrive and Crush Diabetes.

We also developed new videos for teachers to learn how to teach the material in an effective way. By teaching teachers, we can impact students for years to come.

A Note From a Utah Middle School Teacher

Adapting, updating, and creating a more manageable and teachable approach to the film and curriculum, Sugar Babies, will be a huge asset to teachers in their classes across the state and even worldwide.

"Classrooms are looking different for teachers and students daily with time restraints, virtual learning, student involvement, and the changes in this curriculum will provide teachers is priceless informative information and resources.”

Emily Tate, Health Instructor
Mountain Heights Academy

Food, Movement, and You

We addressed pandemic-related challenges by pivoting from on-site educational programming to addressing gaps in access to healthy foods for families experiencing homelessness. We addressed:

Access to healthy food

With Wasatch Community Gardens’ Green Phoenix Farm, we launched a community garden and garden club at Palmer Court, and delivered Grade A organic produce to both Palmer Court and the Midvale Center weekly during the growing season.

Access to transportation

Through the Utah Transit Authority’s Low-Income Transit Pass Program, we provided families experiencing homelessness free transportation passes so they can access grocery stores and food pantries.

Upgrading pantry infrastructure

We upgraded the emergency on-site food pantries at The Road Home’s Midvale Family Resource Center and Palmer Court so pantries could accept and store healthier foods. This included upgrades to appliances, cookbooks, and supplies.

Increasing awareness

We developed new diabetes prevention and nutrition education curricula for families experiencing homelessness. New materials include concepts in mindfulness, distress tolerance, and nutrition recommendations for addiction recovery.

Team Thrive

| 15,719 students |
| 89 teachers |
| 78 schools |
| 31 districts and charters |

Crush Diabetes

| 7,860 students |
| 30 schools in three states |
| 30 schools in three states |
Increasing Access to Healthy Foods and Oral Care at Palmer Court

The Road Home Palmer Court facility provides long-term, supportive housing to 275 people who have been chronically homeless and whose head of household experiences a disability.

Almost 90 percent of the residents are on Medicaid or Medicare, and many go without routine healthcare. Residents were facing two challenges to healthier eating: (1) lack of access to, and knowledge of healthy food; and (2) oral health needs.

(1) HEALTHY FOOD ACCESS & KNOWLEDGE

Challenge: When surveyed, 86 percent of Palmer Court residents reported not having enough to eat. In addition, 90 percent reported wanting to learn more about nutrition and healthy eating.

Solution: We led an extensive food pantry renovation and expanded the community garden. A new sourcing system with the Utah Food Bank increased delivery of produce, dairy, and healthy meats, while minimizing delivery of unhealthy foods. These perishables are stored in a new refrigerator and freezer.

The community garden doubled in size, and added a kid-specific garden. Produce grown in the garden supplies Palmer Court, which helps individuals and families step out of homelessness.

(2) ORAL HEALTH NEEDS

Challenge: 80 percent of residents had not seen a dentist in the last year. Many residents had such severe dental problems they could not eat healthy food.

Solution: The Junior League of SLC provided vouchers for dental care at the University of Utah School of Dentistry, and we established a process to enroll patients and get them to their appointments. There were 23 individuals served, and they needed 12 fillings, 9 extractions, and 3 complete sets of dentures—all free of charge.

BY THE NUMBERS: YEAR 4

- 4,527 pounds lost
- 779 TeleHealth visits
- 31 cases of early eye disease found
- 994 patients served

Clinical Care

Staying healthy is a challenge during the best of times. It’s even harder to maintain one’s health during periods of high stress, such as the ongoing COVID pandemic.

We knew entering year four that prioritizing diabetes prevention and management was going to be a challenge. We needed to creatively adapt in 2020-’21.

Our solution was to focus on embedding effective strategies into clinical care, teaching concepts that prevent diabetes in those who are at risk and helping those with diabetes to better manage their disease.

We embraced the capabilities of telehealth to keep the coaching and education programs available to the people who needed them. People were not just able to continue accessing these programs; we observed higher utilization of programs like the clinic-embedded health coaching.

The lessons we learned during this time will stay with us as we move forward.
Health Coaching

Driving Out Diabetes clinical care includes health coaching programs that provide tailored education, helping people implement and customize lifestyle changes so that they last.

The Driving Out Diabetes Initiative offers two health coaching programs aimed at preventing diabetes and related complications: a clinic-based health coaching program and the Diabetes Prevention Program. These programs share a common goal: helping people lead healthier lives through nutrition education and increased physical activity. They differ in their approaches, reflecting the fact that there are multiple strategies to address behavior change.

CLINIC-BASED HEALTH COACHING

Health coaching that is embedded in clinics helps patients, regardless of insurance status, make the changes that prevent diabetes while simultaneously reducing the risk of other illnesses such as heart disease and cancer. Over the course of multiple sessions, health coaches provide tailored education that helps people implement and customize lifestyle changes that last.

Due to the success of health coaching, we added more health coaches in Year 4, and now serve four U of U Health locations: Redwood Health Center, Sugar House Health Center, the Orthopaedic Center, and the Madsen Health Center. Additionally, more patients saw the health coaches when we made sessions available virtually.

- 667 patients saw health coaches in Year 4, with an average of three return visits for each patient.
- A total of 1,735 people have seen a health coach.

People who have worked with health coaches:
- Decreased their BMI and blood sugar.
- Increased their physical activity and fruit and vegetable consumption.
- Drank fewer sugar-sweetened beverages.
- Reported more confidence in their ability to make changes and stick with them.

Succeeding After Years of Struggle

I was pretty desperate after I was diagnosed with prediabetes.

I had yo-yo dieted unsuccessfully for about 10 years. Despite my best efforts, my weight just kept creeping up.

Then I met with my health coach, Vanessa. I am proud to say that I have lost about 35 pounds in the last six months and my prediabetes is gone.

I credit Vanessa completely with my success. Just like any good therapist, she never actually told me what to do, but rather coached me to find my own approach towards an effective, healthy diet and lifestyle change which included more exercise and strength training.

Her emphasis was always on finding the healthiest lifestyle without focusing directly on weight loss. As a physician, I am acutely aware of the fact that everyone is different, so coaching someone to find what works for them is hugely effective and gives the patient ownership of their decisions, which in turn helps them to stick to a plan.

Annette MacIntyre, MD, FRCPC

NATIONAL DIABETES PREVENTION PROGRAM

The CDC National Diabetes Prevention Program (NDPP) is a 12-month evidence-based curriculum shown to reduce the risk of diabetes by 58 percent. All of our groups moved online in Year 4 due to COVID, which allowed participants to enroll in the program on their own timeline, rather than waiting for the next cohort to start. We continued to see excellent health outcomes for participants.

- We enrolled an additional 56 people in the last year for a total of 311 people in the NDPP.
- During COVID, more than half (52 percent) were able to take advantage of the online option for the NDPP.
- Those who completed even just half of the program lost weight and reduced their BMI.
Screening, Education, Support

Our clinical programs also work to minimize the future health threats to those who already have diabetes.


IDEAS PROGRAM

The IDEAS Program is a personalized diabetes management program for both the newly diagnosed and those who have lived with diabetes for years. Clients meet in groups with 6-14 peers and care partners (usually family members), and take part in interactive education programs that include nurse practitioners, diabetes educators, pharmacists, social workers, and physicians. The IDEAS program is now offered in Spanish, and virtually through a telehealth platform.

- In Year 4, we adapted IDEAS to take place over 4 hours (rather than 8) and delivered it to 129 people. This is a more sustainable, cost-effective way to deliver the same great care.
- The adaptation was successful – participants reduced their blood sugar, they reported less diabetes distress, and increased self-care behaviors.

The Diabetes Retinal Complications Screening Program aims to detect retinal complications of diabetes in time to mitigate long-term effects or reverse them.

Rapid, noninvasive retinal screening is embedded into standard diabetes care appointments at the Utah Diabetes and Endocrinology Center. This streamlines care, sparing patients the need of scheduling a separate appointment in a different clinic.

To date, we have screened 348 people with diabetes for retinal complications, including 89 people in Year 4. We found that half of these patients (49.4 percent) had abnormalities, and referred these individuals for follow up care.

Why this matters: The prevalence of diabetic retinopathy is high in the US, with an estimated 4.1 million persons age 40 and older affected by it, 1 in 29 people (Journal of the American Medical Association). An estimated 899,000 people in this age range have vision-threatening diabetic retinopathy, 1 in 132 people.

These numbers are projected to grow significantly in the years to come.

A NEW INNOVATION FOR 2021:

IMPLEMENTING ARTIFICIAL INTELLIGENCE CAMERA SYSTEM

In spring 2021, we adapted the Diabetes Retinal Complications Screening Program by implementing a new, artificial intelligence (AI) camera system to screen patients for diabetic retinopathy.

Using the power of AI to perform retinal screenings saves time, by delivering results within minutes. AI reduces the cost to patients, improves their level of satisfaction—and most importantly, it has the potential to save vision by allowing a rapid referral to ophthalmology at the time of the screening.

We will expand this program by implementing the same system at the University of Utah Sugar House Health Center.

FEDERAL FUNDING TO EXPAND INNOVATIVE PROGRAMS

Since its was launched in 2017, the IDEAS program has helped Utahns better control their blood sugar and better manage their diabetes.

University of Utah Health clinician-scientists have continually looked for ways to expand the IDEAS program to connect with at-risk and hard-to-reach population groups. Last year, Michelle Litchman, PhD, received two grants to support growing the IDEAS program:

- The Betty Irene Moore Fellowship for Nurse Leaders and Innovators grant, to adapt for deaf populations
- An R56 grant from the National Institutes for Health to expand to rural communities
University of Utah Health has continued to prioritize efforts to prevent diabetes across the entire health system by putting reminders in patients’ electronic charts. Since the launch of the Driving Out Diabetes Initiative, University of Utah Health providers have screened almost 15,000 people who are at risk for diabetes or prediabetes. Of those screened, more than one-third had blood sugar values in the prediabetic or diabetic range. By screening those who are at risk, we can help prevent diabetes from developing by referring patients into effective lifestyle-change programs.

### U OF U HEALTH PATIENTS SCREENED FOR DIABETES

<table>
<thead>
<tr>
<th>Type of Screening</th>
<th>Number of Patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes</td>
<td>721</td>
<td>4.9%</td>
</tr>
<tr>
<td>Prediabetes</td>
<td>4,979</td>
<td>33.6%</td>
</tr>
<tr>
<td>Normal</td>
<td>9,102</td>
<td>61.5%</td>
</tr>
</tbody>
</table>

- **Type 2 Diabetes**
  - Above 126 mg/dl A1C 6.5 and above (on two separate tests)
- **Prediabetes**
  - From 100 - 125 mg/dl A1C 5.7 - 6.4
- **Normal**
  - Less than 100 mg/dl A1C 5.6 and below

Diabetes is an enormously complicated disease, with many causes, manifestations, and potential treatments.

To prevent future suffering from this challenging disease, we must continue to focus on innovation and discovery.

The University of Utah has a strong history of diabetes research, and our community of researchers are making important discoveries. In just the last year, we have added 7 new diabetes investigators to our faculty at the U. In the course of a few years, our annual research funding has grown from $34 million to $43 million per year, a growth of more than 26 percent.

Driving Out Diabetes is essential to catalyzing diabetes research. The energy and momentum of this initiative pushes all of us to keep searching for clues on how to cure this disease one day.

**BY THE NUMBERS: YEAR 4**

- 100+ diabetes researchers in the community
- 7 new diabetes investigators
- $43M diabetes research funding

**Jared Rutter, PhD**
Leadership Team, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; Distinguished Professor of Biochemistry, Investigator, Howard Hughes Medical Research Institute

**Scott Summers, PhD**
Leadership Team, Driving Out Diabetes, a Larry H. Miller Family Wellness Initiative; Professor and Chair, Nutrition and Integrative Physiology
In Year 4 of Driving Out Diabetes, we awarded four seed grants for a total of $135,000.

**Understanding Implementation of the CDC NDPP Delivered to Hispanic/Latinx Americans**, by Katie Baucom (Psychology)
- A study, based on interviews of lifestyle coaches for the National Diabetes Prevention Program (NDPP), to understand how to successfully implement and adapt the NDPP for Latinx Americans.

**Identifying Helminth antigens that modulate metabolism**, by Keke Fairfax (Pathology)
- An investigation of the modulation of bone marrow-derived hepatic macrophage metabolism to discover novel antigens with therapeutic potential in a mouse model of metabolic disease.

**Treatment and lifestyle determinants of type 2 diabetes risk and consequences among cancer survivors**, by Mary Playdon (Nutrition and Integrative Physiology)
- A project to measure the association between cancer and diabetes (and related factors) in several large data cohorts.

**The Role of Parasympathetic Dysfunction in type 1 Diabetes in Mediating Hypoglycemia-Induced Fatal Cardiac Arrhythmias**, by Candace Reno (Internal Medicine)
- An investigation into how parasympathetic nervous system sends signals from the brain to the heart during hypoglycemia that lead to cardiac arrhythmias.

We have welcomed seven new diabetes researchers to the University of Utah in Year 4. Their research spans T-cell development and the molecular mechanisms regulating fat tissue to the development of health behavior interventions and implementation science.

- Ryan R. Bailey, PhD, OTR/L (Occupational & Recreational Therapies)
- Amandine Chaix, PhD (Nutrition & Integrative Physiology)
- Chris Depner, PhD (Health & Kinesiology)
- Keren I. Hilgendorf, PhD (Biochemistry)
- TingTing Hong, MD, PhD (Pharmacology and Toxicology)
- Patrice Mimche, PhD (Pathology)
- Justin D. Smith, PhD (Population Health Sciences)
Increasing Enrollment in the National Diabetes Prevention Program

Research Snapshot #1

Drs. Sara Simonsen and Bryan Gibson are currently conducting a clinical trial of two interventions intended to increase enrollment in the National Diabetes Prevention Program (NDPP) compared to current standards: interactive videos and motivational coaching.

This trial evaluates three different methods to enroll more people in the NDPP: (1) education on the NDPP, which is currently best practice, (2) Mobile 360° Videos, and (3) phone coaching the guides individuals through Motivation and Program-Solving (MAPS). In the Mobile 360° Videos, participants can move their phones to “look around” the world of the video and experience how it feels to have complications of diabetes. The MAPS phone coaching helps participants to consider the behavior change of enrolling in the NDPP, and helps to enhance their motivation to engage in this behavior.

A total of 400 Spanish and English-speaking participants with prediabetes will participate in the study. Patients are being recruited from University of Utah Health and the Midvale Community Building Community clinic. NDPP enrollment and four-week engagement in the NDPP are the key outcomes of the study.

The interventions being tested in this study were developed and pilot tested with the generous support of the Margolis Foundation and a Larry H. Miller Driving Out Diabetes Initiative seed grant.

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Experimental Treatment Subdues Type 1 Diabetes in Laboratory Mice

Research Snapshot #2

An experimental treatment can essentially reverse type 1 diabetes in certain types of laboratory mice, according to a series of studies led by University of Utah Health scientists. The study’s corresponding author was William L. Holland, Ph.D., a U of U Health Assistant Professor of Nutrition and Integrative Physiology. Holland was supported by a Larry H. Miller Driving Out Diabetes Initiative seed grant.

An injection of the therapeutic agent converts cells in the mice that normally control glucose production into ones that generate insulin. Researchers said giving the animals a single dose of a human antibody that suppresses the actions of glucagon, a hormone involved in glucose regulation, sparked a remarkable transformation in the pancreas, leading to a nearly 7-fold increase in insulin cell mass and the suppression of diabetic symptoms.

The study appears in Proceedings of the National Academy of Sciences (PNAS). In addition to U of U Health, researchers from Vanderbilt University Medical Center, Baylor College of Medicine, Lilly Research Laboratories, the University of Texas Southwestern Medical Center, the Veteran’s Administration in Dallas and the Juvenile Diabetes Research Foundation (JDRF) contributed to the effort.

Throughout the Driving Out Diabetes Initiative, we have invested in 28 research projects, 8 of which were driven by exceptional trainees at the U. These seed grants supported principal investigators across 14 departments and 5 colleges, have led to 17 publications to date (with 15 more already in preparation), 11 funded grants for $7.4 million, and 20 more grant proposals being prepared.
On Tuesday, November 17, 2020, PBS Utah and the Driving Out Diabetes Initiative hosted a free, virtual screening event.

148 people tuned in to watch Blood Sugar Rising, a compelling, hour-long film about the fight against diabetes and prediabetes, followed by a live panel discussion with University of Utah Health experts.

One attendee shared that they learned to “take better care of my body. Meaning making better choices and being vigilant! Thank you so much for this reminder.

“I had been diagnosed pre-diabetic years ago and kept things in check. But then, I got more serious about my diet and exercise and am no longer pre-diabetic! But I know I need to stay on top and not let my eating slide. Thank you again! Loved the program!”

SPREADING DIABETES AWARENESS

The Road Ahead
Our goal is a diabetes-free Utah. We dream that people born today will never develop diabetes. Through programs in community outreach and education, innovations in clinical care, and pioneering research, this initiative aims to prevent individuals and their families from suffering under the burden of this disease.

The Future

IN THE NEXT THREE YEARS WE WILL

<table>
<thead>
<tr>
<th>Community Health and Wellness</th>
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<tbody>
<tr>
<td><strong>Double the number of people we educate in Utah through prevention and outreach</strong></td>
<td>Launch a new <strong>Wellness Van</strong> to reach the far corners of Utah.</td>
</tr>
<tr>
<td>Establish new programs to involve the <strong>whole family</strong>. Offered where they live, learn, pray, and play.</td>
<td>Expand new programs to <strong>underserved regions</strong> in Utah.</td>
</tr>
</tbody>
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<tr>
<th>Clinical Care</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Expand evidence-based services to empower twice as many Utahns to avoid and control diabetes</strong></td>
<td>Enhance partnerships to rapidly scale our proven, successful programs to reach more people.</td>
</tr>
<tr>
<td>Launch the <strong>Food Pharmacy</strong> to bring healthy food to those with limited access.</td>
<td>Launch the <strong>Exercise as Medicine</strong> program to make exercise prescriptions a part of clinical care.</td>
</tr>
<tr>
<td>Launch <strong>state-of-the-art technology</strong> to screen for diabetic eye disease.</td>
<td>Translate programs into other languages to reach more diverse populations in Utah.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Research</th>
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</thead>
<tbody>
<tr>
<td><strong>Pioneer new strategies and treatments to combat diabetes so that discoveries made in Utah will be recognized worldwide</strong></td>
<td>Seed new research to catalyze innovative discoveries and support the most promising.</td>
</tr>
<tr>
<td>Evaluate and <strong>enhance programs</strong> implemented in Utah</td>
<td>Become one of the <strong>National Diabetes Research Centers</strong></td>
</tr>
</tbody>
</table>

Creating Smart Goals

- **Specific:** Specify exactly what you want to achieve.
- **Measurable:** Measure progress and success.
- **Achievable:** Ensure the goal is realistic and attainable.
- **Relevant:** Align with broader goals and objectives.
- **Time-bound:** Set a deadline for completion.

Example: I will eat 1 serving of vegetables with lunch 5 days a week for 1 month.
The Partnership Grows

Inspired by the actions of the Larry H. and Gail Miller Family Foundation, philanthropically inclined individuals, businesses, and foundations gave a total of $286,790 in Year 4 to help boost and sustain the Driving Out Diabetes Initiative.

- Dairy West
- KidsGardening
- Lawrence T. and Janet T. Dee Foundation
- Watkins Family Foundation
- Educational Resource Development Council of University of Utah Health
- Ardene Bullard “Of Love” Tennis Tournament
- England Family Foundation
- Gary Watkins
- Margolis Foundation

The University of Utah believes in the mission of the Driving Out Diabetes Initiative. In addition to the $2.5 million the university has contributed in Years 1-4, the university is supplementing this support to keep all of the Driving Out Diabetes Initiative programs in Year 5. The university is committed to developing new philanthropic partnerships to support Driving Out Diabetes in Year 5 and beyond.

Final Thoughts

Prevention is at the heart of everything we do in Driving Out Diabetes, A Larry H. Miller Family Initiative.

For those who have already developed diabetes, we aim to prevent the disease’s devastating complications. For those who are at risk of developing diabetes in the future, we aim to prevent the disease from ever occurring.

In each of Driving Out Diabetes’ four years, we have grown. Year 4 saw some of our greatest challenges yet due to the COVID-19 pandemic, but it resulted in numerous successes that we will retain in the future.

Because of the adaptations we made, we are better equipped to serve more patients through telehealth. We are able to reach more students than ever before through virtual education. And we have built stronger community partnerships.

We continue to dream big about how we can empower Utahns to prevent diabetes. In Year 5 and beyond, we will reach farther into rural communities with “The Wellness Van.” We will launch innovative lifestyle-change programs in the clinics, and we will develop strategies to impact the well-being of entire families.

We are grateful our generous partners will be with us as we make this dream a reality.

None of this would be possible without the support of the Larry H. and Gail Miller Family Foundation. This visionary gift showed people throughout Utah the impact that can be made by exceptional generosity. Inspired by this example, others in our state have joined in the effort to reduce the burden of diabetes.

We all dream of a diabetes-free Utah. Because of our partnership, we are getting closer to making it a reality.
The University of Utah provided more than $900,000 in support for the Driving Out Diabetes Initiative in Year 4. Over the last four years, the University has contributed more than $2.5 million to the initiative.

### Year 4 Expenditures

<table>
<thead>
<tr>
<th>Expenditures per Program</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Health and Wellness</td>
<td></td>
</tr>
<tr>
<td>Mobile Health Program</td>
<td>$502,971</td>
</tr>
<tr>
<td>Childhood and Family Prevention</td>
<td>$260,216</td>
</tr>
<tr>
<td>Subtotal Community Health and Wellness</td>
<td>$879,923</td>
</tr>
<tr>
<td>Clinical Care</td>
<td>$391,554</td>
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<tr>
<td>Research</td>
<td>$171,954</td>
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<tr>
<td>Evaluation</td>
<td>$94,198</td>
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<tr>
<td>Marketing and Communications</td>
<td>$7,226</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,406,119</strong></td>
</tr>
</tbody>
</table>

### Institutional Support from U of U

The University of Utah provided more than $900,000 in support for the Driving Out Diabetes Initiative in Year 4. Over the last four years, the University has contributed more than $2.5 million to the initiative.

<table>
<thead>
<tr>
<th>U of U Support of the Driving Out Diabetes Initiative</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Leadership</td>
<td>$215,598</td>
</tr>
<tr>
<td>Mobile Health</td>
<td>$107,048</td>
</tr>
<tr>
<td>Childhood Prevention</td>
<td>$96,791</td>
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<tr>
<td>Clinical</td>
<td>$272,931</td>
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<tr>
<td>Research</td>
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<tr>
<td>Marketing and Communications</td>
<td>$61,074</td>
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<tr>
<td>Evaluation and IRB</td>
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<tr>
<td><strong>Institutional Support Total</strong></td>
<td><strong>$902,319</strong></td>
</tr>
</tbody>
</table>
Amplifying the Impact

An important part of the Driving Out Diabetes Initiative is sharing our work with potential stakeholders and philanthropic supporters who may be unaware of the life-changing work taking place in Utah.


Wellness Bus-Related Press

- U of U Health Wellness Bus to offer free COVID-19 vaccines, https://www.youtube.com/watch?v=Ks5AmJ5opW0
- U of U Wellness Bus is now giving COVID-19 vaccines, https://stateofreform.com/features/2021/05/u-of-u-wellness-bus-is-now-giving-covid-19-vaccines/

Research-Related Press

- Preventing Type 1 diabetes by targeting a T-cell protein, https://www.fiercebiotech.com/research/9 media hits with a potential reach of 12.1 million
- How the Body Builds a Healthy Relationship with “Good” Gut Bacteria, https://healthcare.utah.edu/publicaffairs/news/2021/05/microbiota.php (24 media hits with a potential reach of 22.4 million)