

A donut chart is positioned in the background, centered behind the text. It consists of two segments: a large blue segment that occupies approximately 75% of the chart, and a smaller green segment that occupies the remaining 25%.

ALBERTA DIABETES INSTITUTE
ISLETCORE PROGRAM
ANNUAL REPORT 2025



ALBERTA DIABETES INSTITUTE ISLETCore ANNUAL REPORT 2025

Content by Tina Dafoe and Patrick MacDonald

Design by Tina Dafoe

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The University of Alberta respectfully acknowledges that we are located on Treaty 6 territory, a traditional gathering place for diverse Indigenous peoples including the Cree, Blackfoot, Métis, Nakota Sioux, Iroquois, Dene, Ojibway/ Saukteaux/Anishinaabe, Inuit, and many others whose histories, languages, and cultures continue to influence our vibrant community.

TABLE OF CONTENTS

- 1 DIRECTOR'S MESSAGE
- 2 TEAM MEMBERS
- 3 ISOLATION & DISTRIBUTION
- 4
- 5 MEASURES OF SUCCESS
- 6 ACTIVITIES & INITIATIVES
- 7 CONTACT US

ADI ISLETCORE

by the numbers

322

**SCIENTIFIC
PAPERS
PUBLISHED**

**MILLION
ISLETS
ISOLATED**

144

79

**PERCENT
POSITIVE
FEEDBACK**

**RECIPIENT
RESEARCH
GROUPS**

193

32

**MILLION
ISLETS
BANKED**

DIRECTOR'S MESSAGE

This past year was a strong one for our team, with ADI IsletCore remaining steadfast in its mission to provide [high-quality human islets](#) and related tissues for research. We processed 48 donor pancreases and distributed nearly seven million islet equivalents to our growing network of recipient laboratories, now spanning 193 research groups worldwide.



As an important milestone, we celebrated our [600th research islet isolation](#) this past summer! We were also excited to formally launch [ADI DataSci](#), with the goal of providing support to the research community in project design, statistics, and data analysis. Finally, we are humbled and encouraged that our work has been the focus of a recent commentary published in the Journal of Clinical Investigation, titled “[Diabetes research enters the biobank era: searching for the truth in a deep well.](#)”

This year, we are excited about several ongoing initiatives. Operations are up and running at [Michigan IsletCore](#), the new human islet isolation program we have been helping with at the University of Michigan. Our paper outlining [HumanIslets.com](#) was published last year and with a team of collaborators, we have been hard at work on [Version 2.0](#), which promises more data types, additional donors, and some exciting new tools for analysis. Lastly, we are looking forward to further progress on our pilot project, offering [live pancreas slices](#).

We thank our [Internal Governance Committee](#) (Drs. Rebecca Hull-Meichle, Peter Senior, and Vince Rogers), as well as our [External Advisory Board](#) (Drs. Raghu Mirmira, Lena Eliasson, Debbie Thurmond, and Vincent Poitout) for their ongoing input and oversight.

As always, we thank the University of Alberta, the Faculty of Medicine and Dentistry, the Alberta Diabetes Institute, and the Clinical Islet Program for their continued support. We also thank [organ procurement organizations](#) across Canada, particularly Alberta Health Services and Give Life Alberta, BC Transplant, Ontario Health, Trillium Gift of Life Network, Quebec Transplant, and the Nova Scotia Health Authority for their tireless efforts. Finally, we are deeply indebted to [organ donors and their families](#) for their selfless gifts in support of diabetes research.

A handwritten signature in dark ink, appearing to read 'P. MacDonald'.

[Patrick MacDonald](#)

Director, ADI IsletCore

Canada Research Chair in Islet Biology

Associate Dean of Research Chairs and Professorships

TEAM MEMBERS



Dr. Patrick MacDonald • Director

Pat established ADI IsletCore in 2010. In addition to directing the program, he is a Professor of Pharmacology and Associate Dean of Research Chairs and Professorships. In his spare time, he likes to run, play ice hockey, and kayak.

Tina Dafoe • Program Coordinator

Tina has been with ADI IsletCore for eleven years and oversees its operations, finances, administration, and customer service. Her other passions include talking about how cute her kids are, HIIT workouts, and taking on too many baking projects.



James Lyon • Technical Director

James has over 30 years of experience isolating human islets. He is a family man who spends his free time riding his bike, playing guitar, and directing and coaching a youth cycling program.

Nancy Smith • Tissue Specialist

A member of the MacDonald Lab since 2007, Nancy became the second ADI IsletCore islet isolation lead in 2019. Outside of work, she enjoys knitting, needlework, and camping with her family.



Aliya Spigelman • Technician

A former student in the MacDonald Lab, Aliya became a technician in 2011. She performs hormone secretion assays and assists with sample procurement for ADI IsletCore. In her free time, she enjoys figure skating and getting outdoors with her family.

Austin Bautista • Technician

Austin has been a part of ADI IsletCore since 2013. He assists with isolations and performs functional characterization of islets. His favourite pastimes are skiing, ultimate frisbee, and pickleball.



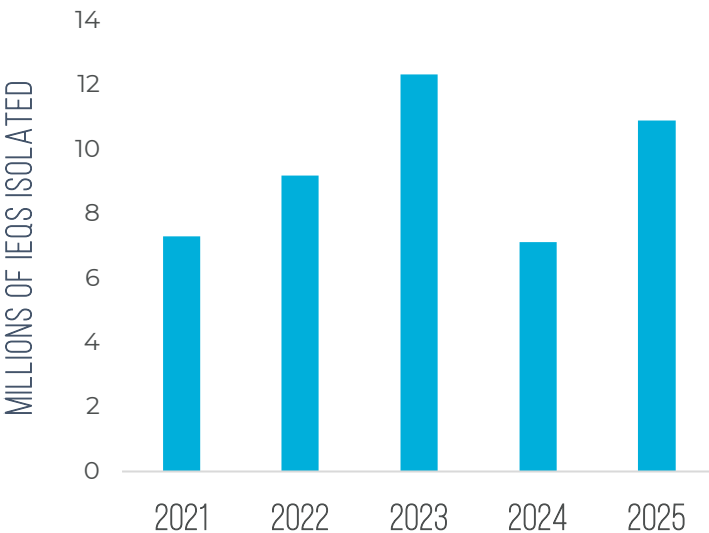
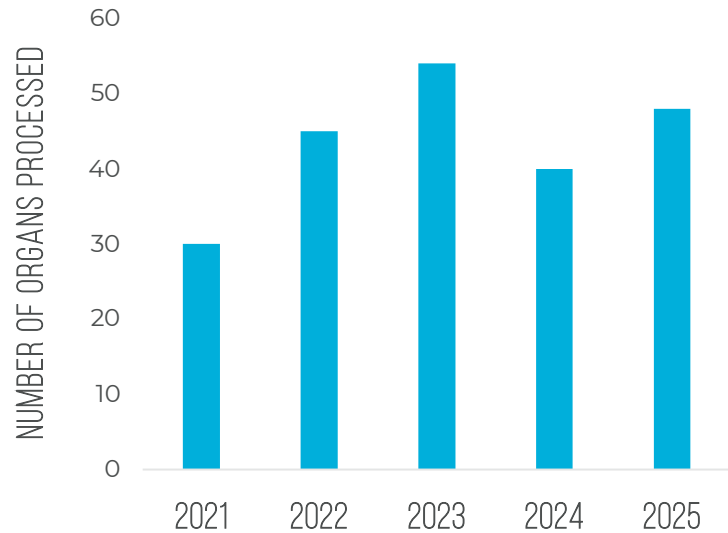
ISOLATION & DISTRIBUTION

Organs Processed

To date, ADI IsletCore has received a total of 614 human donor pancreases for islet isolation, with 48 being processed in 2025.

This year, our donors ranged in age from just one year old to 73, with the same average age as the last two years: 49. The mean BMI of our donors was 26.7 and the majority of were male (33), with just 15 female donors. We processed five organs from donors with diabetes: one T1D and four T2D.

14 of this year's donations were death determination by circulatory criteria (DCC), 25 were by neurologic criteria (DNC), and nine were medical assistance in dying (MAID).



Islets Isolated

Since our inception in 2010, we have isolated 144 million IEQs (islet equivalents). This year alone, we isolated almost 11 million IEQs.

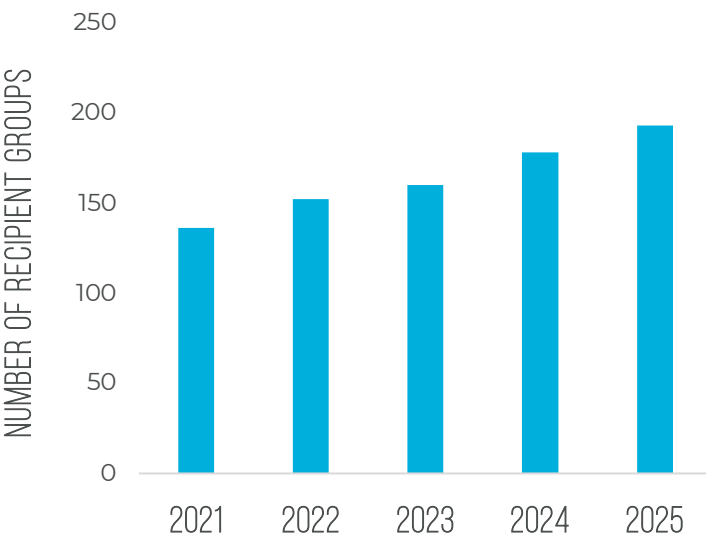
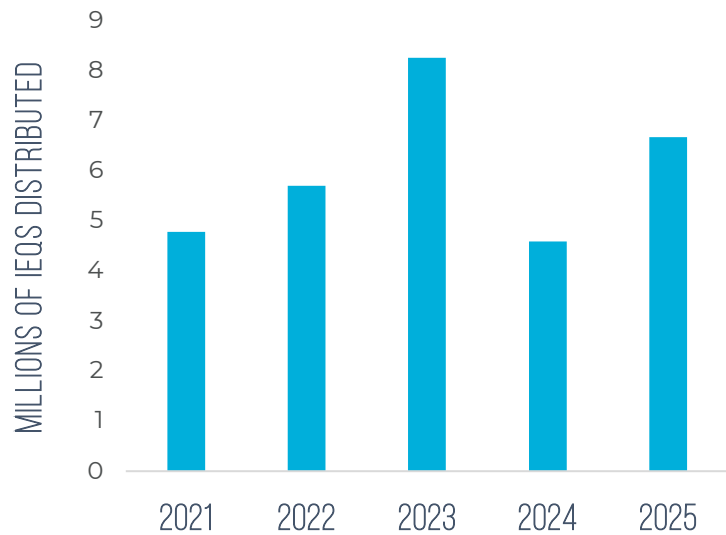
After a year marked by significantly fewer organ isolations due to some administrative hold-ups, we are pleased to report that 2025 saw us return to our usual level of activity, averaging one isolation per operational week.

ISOLATION & DISTRIBUTION

Islets Distributed

Thus far, we have distributed close to 75 million IEQs for research. In 2025, we sent a further 6.7 million IEQs from our bench to yours.

Any surplus islets that remain after distribution are biobanked for our recipients' future use. In 2025, we banked about 460 thousand IEQs each of both snap-frozen and cryopreserved islets.



Recipient Laboratories

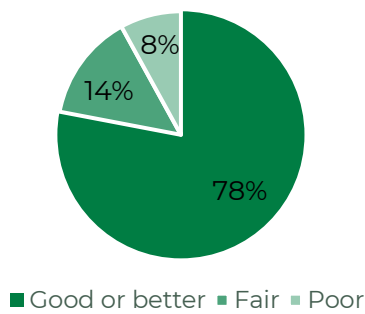
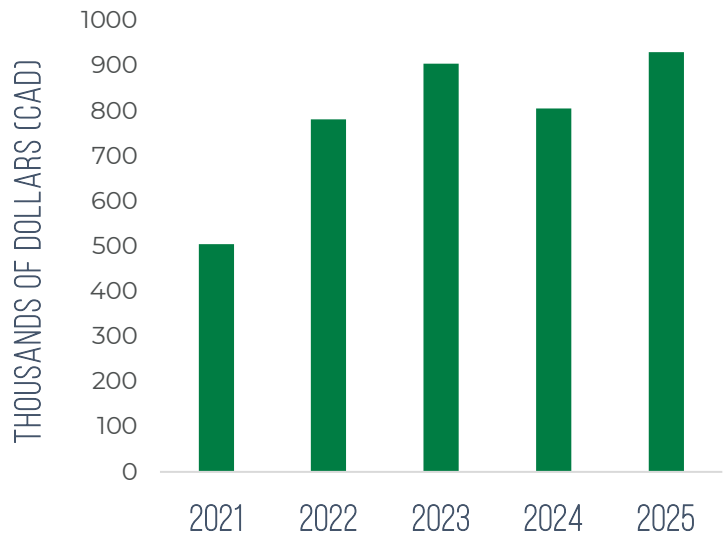
We distribute islets to a network of recipient laboratories that has now grown to 193 groups after signing up an additional 15 groups in 2025—eight of which are international—including our first group from Israel.

Our current recipient base consists of 50 groups from Canada, 90 from the USA, and 53 from outside of North America. The vast majority of our distribution network is comprised of researchers working in academia (179), with only 14 of our recipients working in industry.

MEASURES OF SUCCESS

Cost-Recovery

Our cost-recovery income remained [stable](#) this year. Our budget is [balanced](#) and we are well-positioned for [sustainability](#) going forward, with a small fund set aside for contingency, equipment repair and replacement, and to channel into future initiatives.

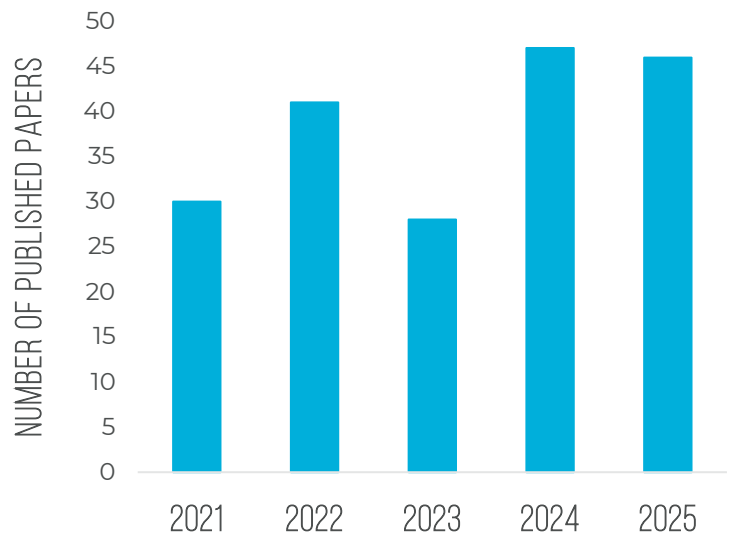


User Feedback

In 2025, we were happy to see that the overall positive user feedback—meaning an excellent or good preparation quality rating—was five points higher than last year, coming in at [78%](#). We greatly appreciate our recipients taking the time to provide feedback. We read each and every response and utilize the assessments to help us optimize our operations.

Research Outputs

We take pride in our continual work to further [diabetes, islet, and pancreatic research](#) by providing access to high-quality human tissue and data. To date, we have contributed to more than [322 original research papers](#), with [46 papers](#) published in [20](#) different journals, last year alone.



ACTIVITIES AND INITIATIVES

Donor R600

In September, we performed our 600th isolation! We celebrated this milestone as a team with some active gaming, 600-themed treats, and—naturally—a fierce spikeball competition. We are grateful to have come so far over the last 12 years and recognize that each of these 600 isolations represents a precious and thoughtful gift from the donors and their families.



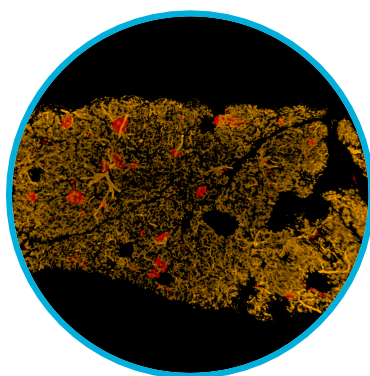
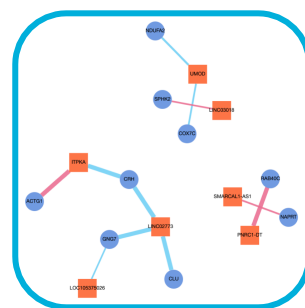
Launch of ADI DataSci

As we announced last year, ADI IsletCore has spun off its own data analysis service, which is housed at the Alberta Diabetes Institute. In 2025, [ADI DataSci](#) received its name, visual identity, and very first customers!

We are pleased to report that this program is now fully operational and taking new clients. For more information, please reach out to **Dr. Cara Ellis**.

HumanIslets.com Paper and Version 2.0

In January 2025, the first paper on HumanIslets.com was officially published in **Cell Metabolism**. In 2026, [Version 2.0](#) will be released; users can expect several improvements and new features, including multi-omics analysis, a metabolic atlas, and AI-enabled data exploration tools. Credit for this huge undertaking goes to Drs. Yao Lu and Jeff Xia.



Live Pancreas Slice Pilot Project

In 2025, Austin Bautista led our continued effort to expand our offerings with the creation and distribution of [live pancreas slices](#). Many thanks to the groups of Drs. Bruce Verchere, Yassi Aghazadeh, and Vira Kravets, as well as Fractyl Health, for their collaboration on this pilot project. If this is a service that is of interest to you, please do not hesitate to reach out! (Image credit: **Verreault, De Leon, and Aghazadeh.**)

CONTACT US

Our goal is to promote and facilitate human islet research. If you would like to join our human islet distribution list, please get in touch!

Dr. Patrick MacDonald

ADI IsletCore Director

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Tina Dafoe

ADI IsletCore Program Coordinator

✉: tdafoe@ualberta.ca

For more information, please visit our website at bcell.org/adi-isletcore.

WHAT WE OFFER at ADI IsletCore



FRESH ISLETS

High purity, high viability research-grade human islets from donors with and without diabetes.



FROZEN ISLETS

Cryopreserved and snap-frozen human islets for expression, -omics, and select functional studies.



BLOCKS & SLIDES

Paraffin-embedded pancreas biopsies and isolated islets. Custom fixation available upon request.



TISSUE SAMPLES

Intestine, spleen, adipose, lymph nodes, acinar, and blood. Custom processing available upon request.



FUNCTIONAL DATA

Whole islet insulin secretion and single beta-cell function assays performed on every preparation.



ALBERTA DIABETES INSTITUTE ISLETCORE

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