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## MARK YOUR CALENDAR

27<sup>th</sup> Annual Scientific Day  
May 6, 2016  
The Old Mill Inn, Toronto

3<sup>rd</sup> BBDC-Joslin-UCPH Joint Symposium on Diabetes  
November 10-12, 2016  
Boston, MA

*BBDC News is distributed by e-mail in September, January, and June of each year. Those who wish to advertise diabetes-related events or programs in BBDC NEWS can contact us at [diabetes.bbdc@utoronto.ca](mailto:diabetes.bbdc@utoronto.ca).*

## BBDC Awards \$1 Million Transformational Diabetes Team Research Grant

(Made possible through the generous support of an anonymous donor to the Toronto General & Western Hospital Foundation)

It is our pleasure to announce the awarding of the BBDC's \$1 Million Transformational Diabetes Team Research Grant to the research team led by Dr. Richard Gilbert. Below is a description of the research project.

### DIABETIC NEPHROPATHY: RE-ENGINEERING THE THERAPEUTIC ENTERPRISE

Principal Applicant: Dr. Richard Gilbert  
Co-Principal Applicants: Drs. Aled Edwards, Jeff Wrana, Darren Yuen

#### Program Overview

The envisaged program focuses on the role of fibrosis as a key pathway in the development and progression of diabetic kidney disease with the dual inter-related aims of:

1. Providing an in-depth understanding of the mechanisms involved in diabetes-associated fibrogenesis
2. Developing new therapeutic strategies that target these fibrogenic pathways

#### Focus on Fibrosis

While repair by regeneration occurs in lower organisms and in humans under certain circumstances, the presence of chronic or repeated injury in most tissues leads to the elaboration of large quantities of extracellular matrix (ECM), that ultimately result in the formation of a connective tissue scar. For reasons that are incompletely understood, hyperglycaemia and potentially other aspects of the diabetic milieu are perceived as chronic injury stimuli. As a consequence, increased extracellular matrix accumulation is a widespread phenomenon in diabetes, causing a range of problems from the clinically silent capillary basement thickening throughout the body, through the minimally symptomatic periarticular fibrosis of diabetic cheiroarthropathy, on to the devastating fibrotic changes in the kidney where the extent of both glomerulosclerosis and tubulointerstitial fibrosis correlate closely with declining kidney function.

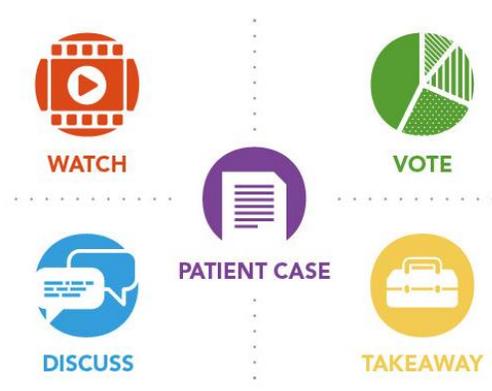
## Transforming the Discovery Paradigm

In a fundamental departure from traditional approaches, the principal investigators seek to transform the therapeutic discovery paradigm by taking advantage of Toronto's diverse expertise in basic and clinical research to form a new consortium, the Centre for Advanced Therapeutics in Diabetic Kidney Disease (CAT-DKD). Rather than focusing exclusively on glucose-dependent pathways and relying on rodent models and cell lines, the Centre will focus on fibrogenic pathways and the use of cells and tissues from individuals with diabetic kidney disease with the aim of ultimately becoming a world centre in:

1. Discovery science, undertaking unbiased and targeted exploration of key pathogenetic pathways that are altered in human diabetic nephropathy using next generation sequencing and pathway analysis of human samples.
2. Development of chemical probes, designing small molecule tool compounds to conduct proof-of-concept validation studies for the key pathways that have been identified.
3. Partnerships with other academic groups conducting similar human tissue-based research and with pharmaceutical and biotechnology companies interested in drug discovery in diabetic kidney disease
4. Teaching and training of a new generation of academic researchers in drug discovery and development, attracting graduate students, trainees and highly qualified personnel, from both national and international arenas.

## New Interactive Learning Program Now Available on Diabetes Pharmacists Network Website

This engaging new program has been designed to promote critical thinking in the application of knowledge to optimize care for patients with diabetes. Interactive patient cases will explore the most challenging scenarios in diabetes management. Our first two patient cases: 1) **Individualizing Drug Therapy in Patients with Diabetes and Chronic Kidney Disease**, and 2) **Should Every Patient with Diabetes  $\geq 55$  Years of Age Receive an Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin II Receptor Blocker (ARB)?** have had more than 1000 page views to date. Become a member of the BBDC's [Diabetes Pharmacists Network](#) today to gain exclusive access to the interactive learning program and to lend your voice to the discussion and engage with other members.



## BBDC Furthers Commitment to Applied Research with Formation of QUEST Program

Continuing its commitment to supporting applied diabetes research at the University of Toronto, the BBDC is pleased to announce the rebranded Quality Education and Safety (QUEST) program. With an expanded mandate focusing on continuing education and quality improvement (QI), the program will look to foster worthwhile initiatives encouraging systematic improvement and lifelong learning among all members of the diabetes healthcare team.

Building on the excellent work of the Continuing Health Education and Professional Development Committee, the QUEST steering committee will oversee all activities undertaken by the program and ensure tangible impact is made at the patient level based on the most current, cutting-edge research and scholarship. Comprised of

continuing education and QI experts from across the University of Toronto and beyond, the program is led by Dr. Phillip Segal, endocrinologist, University of Toronto.

In addition to any new initiatives, the program will continue to develop and support the ever popular biennial Diabetes Update as well as the annual Diabetes Educator of the Year Award and all other continuing education and QI efforts conducted by the BBDC. To learn more about the QUEST program, please [visit our website](#).

## BBDC External Review

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The Faculty of Medicine commissions periodic external reviews of Departments and Extra-Departmental Units as part of its commitment to quality assurance. An external review of the Banting & Best Diabetes Centre will be held on **Thursday, February 4, 2016**.

The reviewers will be **Professor Steven Kahn** – Division of Metabolism, Endocrinology & Nutrition, Department of Medicine, University of Washington, Seattle; and **Professor André Marette** – Institut de Nutrition et des Aliments Fonctionnels, Université Laval. The review visit will include meetings with a broad range of constituencies that will provide the reviewers with the opportunity to hear a wide range of views. We encourage everyone asked to participate in the external review to make every effort to attend.

## Upcoming BBDC Events

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### BBDC Seminar Series

The BBDC will be hosting the following diabetes-related seminars which are held in conjunction with City-wide Endocrine Rounds. The seminars are held on selected Friday mornings from 8 to 9 a.m. at the Mount Sinai Hospital, Lebovic Building, 60 Murray Street, 3rd floor conference room. Faculty wishing to meet with any of the visiting speakers should contact Chris Sargent at [chris.sargent@utoronto.ca](mailto:chris.sargent@utoronto.ca).

Date	Speaker
Friday, January 15, 2016	<i>AMPK, Central Regulator of Glucose and Lipid Metabolism</i> <b>Reuben Shaw, PhD</b> Professor, Molecular and Cell Biology Laboratory Deputy Director, Salk Institute NCI-Designated Cancer Center The Salk Institute for Biological Studies
Friday, April 8, 2016	<i>Engineering Fat Cell Fate to Fight Obesity and Metabolic Diseases</i> <b>Shingo Kajimura, PhD</b> Assistant Professor, University of California, San Francisco UCSF Diabetes Center Department of Cell and Tissue Biology Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research

### BBDC Annual Scientific Day 2016

Friday, May 6, 2016

The Old Mill Inn, Toronto

Mark your calendar! The BBDC's 27<sup>th</sup> Annual Scientific Day will be held on Friday, May 6, 2016. This event is open to BBDC members, their trainees, and U of T endocrine residents. We are delighted to announce that this year's Charles Hollenberg Memorial Lectureship will be delivered by **Dr. Michael German**, Clinical Director of

the University of California San Francisco Diabetes Center. The program will also include **Drs. Jayne Danska, Dafna Greitzer-Antes, Caroline Kramer, Robert Screatton, and Darren Yuen**. BBDC graduate studentship and postdoctoral fellowship recipients as well as selected Annual Trainee Awards competition abstract submitters will present posters of their work. We are pleased to announce that **Dr. Anne Granger, Scientific Editor of Cell Metabolism** will co-judge ten posters for the Annual Trainee Awards competition. The prize winners will be announced and prizes will be awarded to the recipients at the end of the Scientific Day. The complete program and registration information will be available in late February. Please [check our website](#) for updates.

### **3<sup>rd</sup> BBDC-Joslin Diabetes Center-University of Copenhagen Joint Symposium: Cellular Mechanisms and Cell-Based Therapies of Diabetes** November 10-12, 2016 Boston, Massachusetts

Save the date! We are pleased to announce that the Joslin Diabetes Center together with the Banting & Best Diabetes Centre and the University of Copenhagen will be holding the 3<sup>rd</sup> annual diabetes symposium November 10-12, 2016 in Boston. This event will bring together researchers of the Joslin Diabetes Center, the BBDC, the University of Copenhagen and other international research organizations to address the latest developments in cellular mechanisms and cell-based therapies of diabetes. These three organizations have long been at the heart of global diabetes research, and this meeting seeks to build on that long tradition to bring together prominent researchers from across the globe and foster greater cross-institutional research in the field of diabetes. More information about the event will be provided in the coming months.

*The BBDC would like to thank the University of Copenhagen for hosting the 2<sup>nd</sup> Annual BBDC-Joslin-UCPH Conference in Copenhagen in October 2015. Below are photos from that event.*



## **Funding Opportunities**

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### **Annual Trainee Awards 2015/2016**

The BBDC invites graduate, undergraduate and medical students, postdoctoral and clinical fellows, and medical residents to submit an abstract of their diabetes-related for this competition. The BBDC Training and Research Excellence Committee will screen all abstracts submitted to this competition. The top ten will be invited to present a poster at the BBDC Annual Scientific Day to be held in May 2016. The ten posters will be co-judged by **Dr. Anne Granger, Scientific Editor of Cell Metabolism** and a U of T faculty member (to be announced) during the morning poster session. The prize winners will be announced and prizes will be awarded at the end of the Scientific Day.

Note: All 2015/2016 BBDC graduate studentship and postdoctoral fellowship recipients are expected to submit an abstract of their work for this competition.

To be eligible, the trainee must be first author and the content of the abstract must be clearly and directly relevant to diabetes. The trainee must be either:

- A registered University of Toronto graduate, undergraduate or medical student
- A postdoctoral fellow having received a PhD within the last 5 years
- A medical resident or clinical fellow having received an MD within the last 9 years

The trainee's supervisor must hold a faculty appointment with the University of Toronto at the level of Associate, Assistant or Full Professor. The trainee's supervisor must be a registered member\* of the BBDC at the time of abstract submission. **Applications must be received by 5 p.m., January 19, 2016.** For complete award details and application instructions, please [visit our website](#).

## **Charles Hollenberg Summer Studentship Program 2016**

Fifteen summer studentships are available for undergraduate and medical students to carry out summer research in diabetes under the supervision of a member of the Banting & Best Diabetes Centre (BBDC). The goal of the program is to introduce undergraduate and medical students to the field of diabetes research and to encourage research in diabetes and its complications as a career. Students will be required to work full-time for a minimum of 12 weeks between May 1 and August 31, 2016. To be eligible, the proposed supervisor must hold a faculty appointment with the University of Toronto at the level of Assistant, Associate or Full Professor, and must be conducting diabetes research. The proposed supervisor must also be a registered member\* of the BBDC at the time of application submission. A list of supervisors who potentially have one or more positions available for a summer student is available on the BBDC's web site [here](#). Students may also directly contact other faculty not on this list with whom they are interested in working to discuss the possibility of a summer position. Research profiles of BBDC members can be found [here](#). **Applications must be received by 5 p.m., January 26, 2016.** For complete award details and application instructions, please [visit our website](#).

## **Postdoctoral Fellowships 2016/2017**

- **BBDC Postdoctoral Fellowships**
- **Hugh Sellers Postdoctoral Fellowship**
- **BBDC Fellowships In Diabetes Care (Funded By Eli Lilly & Boehringer Ingelheim)**

The Banting & Best Diabetes Centre will be awarding a number of postdoctoral fellowships to candidates at the post-PhD or post-MD degree stages. The one-year fellowships normally commencing on July 1, 2016 (and no later than September 1, 2016) are to be used for full-time research training in diabetes. To be eligible, the candidate's proposed supervisor must be conducting diabetes research and must hold a faculty appointment with the University of Toronto at the level of Assistant, Associate, or Full Professor. The proposed supervisor must be employed by the University of Toronto or a University of Toronto-affiliated institution, and must be a registered member\* of the BBDC at the time of application submission. Candidates must have received a PhD after July 2012, or an MD after July 2007 and must be within their first four (4) years of postgraduate research training as of July 1, 2016. **Applications must be received by 5 p.m., February 23, 2016.** For complete award details and application instructions, please [visit our website](#).

## **Archie Sopman Diabetes Research and Education Awards 2016 (For University Health Network Employees)**

This funding program is only open to University Health Network (UHN) staff physicians, dietitians, nurses, social workers, pharmacists, and scientists whose major job description involves diabetes research, diabetes education, or diabetes clinical care. Funding is available for travel to one diabetes-specific meeting occurring in the year 2016, or to support a visiting lecturer in diabetes or metabolic disorders visiting in the year 2016. To

be eligible to apply, applicants must be employed by the UHN on a full-time or part-time basis. The principal applicant must also be a registered member\* of the BBDC at the time of application submission. **Applications must be received by 5 p.m., March 22, 2016.** For complete award details and application instructions, please [visit our website](#).

## **AstraZeneca Impact Challenge Grant - Cardiovascular/Diabetes 2016**

The BBDC and Heart & Stroke/Richard Lewar Centre of Excellence in conjunction with the Vice-Dean, Research and International Relations, Faculty of Medicine are pleased to announce the 2016 Astra Zeneca Impact Challenge Grant in Cardiovascular/Diabetes research. One non-renewable award will be provided in 2016. The award can be **up to \$250,000** (\$125,000 annually for 2 years, to be spent over a maximum of 3 years). The award will begin July 1, 2016. Projects focusing on, but not limited to, the association between diabetes and atherosclerotic heart disease and/or the association between diabetes and cardiovascular function will be given priority. Proposals should be focused on patient-oriented research (e.g. clinical trials, proof of concept studies in humans, mechanistic studies in humans, population research, biomarker research, imaging studies in humans).

The purpose of this funding program is to:

- Establish the University of Toronto as an international leader in the study of Diabetes and Heart Disease
- Encourage collaborations between the BBDC and the HSRLCE
- Foster translational research with a focus on innovation and first-in man clinical trials
- Foster the training of graduate students across disciplines and research institutes

Please note that the eligibility requirements for this funding program have changed since the previous competition. Potential applicants are asked to review the revised award terms for complete eligibility requirements. Some of the changes include:

- The program is not restricted to those within the first 10 years of their first faculty appointment.
- A broader scope of research proposals will be considered.
- There is no requirement for a biobanking component.

**Applications must be received by March 31, 2016.** For the complete award terms and application form please see the [HSRLCE website](#). Questions regarding this program may be directed to Tracey Richards, Heart & Stroke/Richard Lewar Centre of Excellence Business and Communications Manager [hsrl.centre@utoronto.ca](mailto:hsrl.centre@utoronto.ca).

## **Graduate Studentships 2016/2017**

The Banting & Best Diabetes Centre is now accepting applications for the following graduate studentships:

- 1) BBDC-Novo Nordisk Studentships (OSOTF)
- 2) Yow Kam-Yuen Graduate Scholarship in Diabetes Research (OSOTF)
- 3) Tamarack Graduate Award in Diabetes Research (OSOTF)
- 4) BBDC-University Health Network Graduate Awards

To be eligible, the applicant must be a registered full-time graduate student in the Faculty of Medicine, University of Toronto by August 31, 2016 and must be carrying out studies in diabetes research. The applicant must be either a Canadian citizen or have Permanent Residence status in Ontario by August 31, 2016. The student's primary supervisor must hold a faculty appointment with the University of Toronto at the level of Assistant, Associate, or Full Professor. The primary supervisor must also be a registered member\* of the BBDC at the time of application submission. Supervisors may submit a maximum of 2 applications for this competition. **Applications must be received by 5 p.m., April 5, 2016.** For complete details of each award and application instructions, please [visit our website](#). Students need only submit one application to be considered for all four awards.

## Trainee Travel Awards Period 2 For Travel Occurring Between January 1 and June 30, 2016

Travel reimbursements of up to \$1,000 CAD are available to trainees who will be traveling to a national or international meeting between January 1 and June 30, 2016 to present a first-author abstract. The content of the abstract must be directly relevant to diabetes. At the time of abstract submission to the meeting, the applicant must be either: A) a registered University of Toronto graduate, undergraduate or medical student; B) a postdoctoral fellow having received a PhD within the last 5 years; or C) a medical resident or clinical fellow having received an MD within the last 9 years. The trainee's supervisor must hold a faculty appointment with the University of Toronto at the level of Assistant, Associate or Full Professor, and must also be a registered member\* of the BBDC at the time of application submission. **Applications must be received by 5 p.m., April 19, 2016.** For complete award details and application instructions, please [visit our website](#).

*\*Those who are new to the field of diabetes research, education or care and are not members of the BBDC can request free membership prior to submitting an application. For more information about BBDC Membership, please view the Membership section of our web site at [www.bbd.org/membership/membership-overview](http://www.bbd.org/membership/membership-overview).*

## Funding Decisions\*\*

### \$1M Transformational Diabetes Team Research Grant 2016

Made possible through the generous support of an anonymous donor to the Toronto General & Western Hospital Foundation

Recipients	Title of Research	Amount
Principal Applicant: Dr. Richard Gilbert Co-Principal Applicants: Dr. Aled Edwards Dr. Jeff Wrana Dr. Darren Yuen	Diabetic Nephropathy: Re-engineering the Therapeutic Enterprise	\$999,733.23

### 2<sup>nd</sup> BBDC-Joslin-UCPH Conference: Islet Cell Plasticity in Diabetes Therapy Travel Grants

Recipient	Supervisor(s)	Abstract Title
Mona Abraham	Dr. Tony Lam	Hypothalamic leptin action improves glucose tolerance in 3-day high-fat fed rats
Jonathan Campbell	Dr. Daniel Drucker	Identification of a novel transcription factor in beta cells links GIPR signaling to anti-apoptotic action
Kathryn Cogger	Dr. M. Cristina Nostro	Identifying cell surface markers for the isolation of pancreatic progenitor cells
Subhankar Dolai	Dr. Herbert Gaisano	Synatogamin-7 functions to replenish insulin granules for exocytosis in human islet $\beta$ -cell
Alexander Ivovic	Dr. Adria Giacca	NOD1 activation mediates and NOD2 activation prevents fat-induced beta-cell dysfunction
Ying Liu	Dr. Michael Wheeler	Characterization of zinc influx transporters (ZIPs) in pancreatic beta cells: Roles in regulating cytosolic zinc homeostasis and insulin secretion
Cynthia T. Luk	Dr. Minna Woo	FAK Signaling Controls Insulin Sensitivity through Adipocyte Survival

Kacey Prentice	Dr. Michael Wheeler	CMPF induces persistent beta cell metabolic inflexibility and impaired insulin secretion
Xavier Revelo	Dr. Daniel Winer	Perforin is a novel immune regulator of obesity-related insulin resistance
Pamuditha Silva	Dr. Jonathan Rocheleau	HEAT-on-a-Chip: A Microfluidic Device for Highly Efficient Viral Transduction of ex vivo Pancreatic Islets

## **Trainee Travel Awards 2015/2016 (Period 1) For Travel Occurring Between July 1 and December 31, 2015**

<b>Recipient</b>	<b>Supervisor(s)</b>	<b>Abstract Title</b>
Tamader Alghamdi	Dr. Andrew Advani	Monocyte chemoattractant protein-1 is a critical regulator of endothelial-podocyte crosstalk in the kidney
Paige Bauer	Dr. Tony Lam	Upper small intestinal fatty acid sensing improves glucose tolerance through suppression of hepatic glucose production
Andrew Cheung	Dr. Baiju Shah	The association between primary care physician volumes and quality of diabetes care
Vivian Choo	Dr. David Jenkins	The effect of fructose containing sugars on glycemic control: A systematic review and meta-analysis of controlled trials
Harsh Desai	Dr. Minna Woo	Macrophage Janus Kinase 2 promotes obesity, inflammation and insulin resistance
Sophie Hamr	Dr. Tony Lam	Upper Small Intestinal Protein Sensing Improves Glucose Tolerance Through Suppression of Hepatic Glucose Production
Javier Jaldin-Fincati	Dr. Amira Klip	Insulin transcytosis across microvascular cells is not mediated by the insulin or IGF-1 receptors
Julie A. Lovshin	Dr. Baiju Shah	Inadequate Screening for Diabetic Retinopathy Despite Universal Health Care: A Large, Population-Based Study
Julie Anh Dung Van	Dr. James Scholey	Characterizing the Urinary Peptidome to Infer Protease Activity in the Diabetic Kidney
Nadeeja Wijesekara	Dr. Paul E. Fraser	Amyloid Beta Induced Insulin Resistance Leads to Diabetes and Severe Neurodegeneration in Transgenic Mice

*\*\*An essential condition of all BBDC programs is the acknowledgement of BBDC support, where appropriate, in all publications, presentations and communications relevant to the BBDC-supported research program. Failure to appropriately acknowledge the BBDC in relevant publications, presentations and communications will be considered grounds for suspending future eligibility for BBDC funding programs.*

## BBDC Member Profile

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### Robert Screatton, PhD

Dr. Robert Screatton received his undergraduate and graduate training at McGill University in Montreal, Canada (1998), and pursued post-doctoral studies at the Burnham Institute (1999-2002) and the Salk Institute (2002-2005) in San Diego, California. In 2015, Dr. Screatton was recruited to the Sunnybrook Research Institute in March 2015 where he is a Senior Scientist and Associate Professor of Biochemistry at the University of Toronto. Prior to that, he was a Senior Scientist at the Children's Hospital of Eastern Ontario Research Institute and an Associate Professor in Pediatrics at the University of Ottawa, where he held the [Canada Research Chair In Apoptotic Signaling, Tier II](#).

Dr. Screatton's current research focuses on finding cures for Type 1 and Type 2 diabetes. His lab performs genome-wide functional screens, enabled by robotic microscopes, to identify genes that are involved in critical cellular functions, with a particular focus on the function of the insulin-producing pancreatic beta cell. His recent work has uncovered a molecular pathway centred around the kinase SIK2 that helps to explain how the beta cell increases insulin output in the face of increased blood glucose, so call "functional compensation". Beta cell functional compensation is regarded as the central reason why at-risk obese subjects are able to maintain normal blood sugar levels and avoid T2D. A recent focus of the lab has been to develop technologies to work exclusively with human beta cells and their precursors to identify genes that will help promote their proliferation and growth.

Dr. Screatton is the recipient of the Young Scientist of the Year (2014) from the Canadian Diabetes Association/Institute of Nutrition Metabolism and Diabetes at CIHR, the Ontario Early Researcher Award, the CHEO Research Institute's Outstanding New Investigator Award and the University of Ottawa Faculty of Medicine's Young Professor Award. At the Canadian Diabetes Association, Dr. Screatton is Chair of the Islet Biology and Immunology Panel and a member of both the Clinical and Scientific Section and National Research Council.

In his free time, he enjoys resistance training, skiing, hockey, and live music, but mostly relentlessly teasing his three girls Lily (14), Ruby (12) and Zoe (8).

## BBDC Core Laboratory

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The BBDC Core Laboratory provides a wide range of high quality laboratory services to diabetes researchers at the University of Toronto involved in clinical and/or basic research. The lab also provides services to the wider scientific community including external academic and/or industry initiated research. Please see the BBDC's website at [www.bbdc.org/programs-platforms/core-laboratory](http://www.bbdc.org/programs-platforms/core-laboratory) for a complete description of assays and services currently available.

**Director: Gary F. Lewis, MD, FRCPC**

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