



2015 MEMBERSHIP REPORT

**converging ideas to address
packaging waste and food waste**



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Fast Fact: The European Commission's (EC) long-awaited Circular Economy Package (CEP) has been launched, proposing a recycling target of 65% across the European Union (EU) by 2030.

A MESSAGE FROM THE EXECUTIVE DIRECTOR

Alan Blake



Welcome to our combined PAC NEXT and PAC FOOD WASTE membership report for 2015. We continue to see great progress for both programs with strong and sustained membership levels

and active member led projects that are delivering meaningful results. Our Newsletters and Quarterly reports are well received, widely read and has inspired others to follow. Our webinars offer a diverse array of topics based upon your requests and allow us to attract expert speakers and a broad audience. These results reflect excellent teamwork within PAC, with our co-chairs and partnerships with like-minded associations, companies, municipalities and individuals from across the packaging value chain.

Our Packaging Innovation Gateway project team has also worked to develop a process (shown right) in which current, modified or new package designs are assessed to understand what needs to be true to successfully recycle or compost that package. Shared expertise and collaboration of our members help us to deliver results and new reports moving forward.

Looking ahead for 2016, you have continued to ask us to focus on transparent collaboration to find cost effective packaging solutions that reduce both the amount of packaging and food going into landfill. So, my request to you is to stay engaged, participate as and when you can in our projects, and always take the opportunity to let us know what you think and how PAC can help.

Enjoy the read.

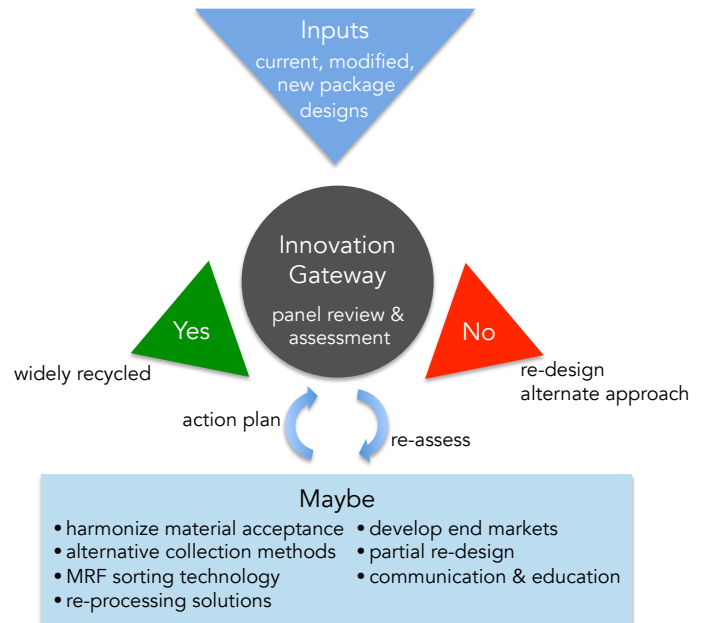
A MESSAGE FROM THE PROGRAM MANAGER

Rachel Morier



PAC FOOD WASTE marked its 2-year anniversary in December and it was exciting to celebrate by running a member-focused workshop to highlight successes and, more importantly, to focus on our plans and priorities through

2017. This was very timely given that food waste became an increasingly hot topic in 2015. In June 2015, the Consumer Goods Forum agreed to halve food waste within the operations of its 400 retailer and manufacturers members by 2025. In September 2015, the U.S. EPA and USDA announced a national food waste reduction goal, calling for a 50-percent reduction by 2030. PAC FOOD WASTE is primed to be a part of this effort locally, and regionally and in particular to be a catalyst for food waste packaging solutions across the value chain in North America.



PAC NEXT Packaging Innovation Gateway Process

Fast Fact: Steel and aluminum cans, PETE beverage bottles, high-density polyethylene, glass, and paperboard cartons are collectively recycled at a 34.2% rate in the U.S. today, versus 25.7% in 2005 (The ULS Report).

PAC NEXT and PAC FOOD WASTE Co-Chairs

Dan Lantz



In 2015 PAC NEXT took on a subject that most people are afraid to even bring up, much less discuss in earnest – what do we do at the end of life with multi-laminated plastics? A number of alternatives were investigated with some promising results.

This is the strength of PAC NEXT. The organization brings together organizations and people from across the supply chain to discuss and examine alternatives to difficult issues facing the packaging industry. The packaging industry has been working hard on the issue, coming up with new compatible multi-laminated pouches while the plastics end market equipment manufacturers continue to develop new technologies to manage these plastics. Overall, it looks to be an exciting year on this topic. Also at the forefront is the expansion of full EPR programs across Canada and possibly into the United States, with four states showing keen interest in EPR for printed paper and packaging. PAC NEXT is staying close to this topic as it ultimately could affect every step in the supply chain from packaging producer to material end markets. With such a diverse membership base, the topic will definitely garner a lot of discussion.

Angela Dennis 



PAC NEXT and PAC FOOD WASTE continue to evolve and to this end we are now looking at how they can bring together experts to start the conversation around packaging design and food waste. In December PAC FOOD WASTE held a ½ day session on how companies are starting to address this and the role packaging can play. We all know that packaging itself has an environmental impact but once the package is full of product and has made its way to the retailer its environmental impact increases dramatically should it be discarded for any reason. The reach of PAC NEXT and PAC FOOD WASTE allows them to leverage industry to address issues that are quickly becoming a priority.

Keith Fanta



PAC NEXT has had a very busy year and continues to bring companies, governments and other NGOs together to further the conversation about how to get to a world without packaging waste. I am most proud of the fact that we continue to try and move from

talking to action. It is important for PAC NEXT to continue to provide value for our membership and based on our results from this year, I believe we have accomplished this task. The EPR updates, the 9 webinars, the Innovation Gateway, the small scale trials for recycling laminates and all the other accomplishments this year continue to educate me and connect me with new technologies, companies and important industry contacts. In 2016, we need to continue to identify ways to move from talk to action and influence the packaging industry to an even more sustainable future.

Ron Cotterman



The work of PAC FOOD WASTE has continued to highlight the positive role that packaging can play in reducing the environmental impacts across the food supply chain. This is important and topical with industry stepping up to address

this huge global challenge. Last year alone, the Consumer Goods Forum agreed to halve food waste within the operations of its 400 retailer and manufacturers members by 2025 and the U.S. EPA and USDA announced a national food waste reduction goal of a 50% reduction by 2030. Hence, I'm delighted with the PAC FOOD WASTE progress in 2015 and the work on packaging case studies, the coffee LCA study and connections made with other groups working in this area - we must collaborate to make the biggest possible difference. Looking ahead we need to ramp up our communications and drive awareness of packaging technology solutions and the intersect with food science to help brand owners, retailers, municipalities and consumers all contribute to reducing food waste.

MEMBER BENEFITS



**126 members – Retailers,
Brand Owners,
Manufacturers,
Municipalities, Processors,
Associations**

Connections



**48 members – Retailers,
Brand Owners,
Manufacturers,
Municipalities,
Associations**

**Member led project teams
Knowledge sharing
Networking
Consulting – ASK ME!**

Collaboration

**Alignment with FWRA,
Save Food and like-
minded organizations,
Knowledge sharing,
Consulting – ASK ME!**

**Extended Producer
Responsibility for packaging
across North America**

Expertise

**Food packaging
technologies,
Packaging optimization**

**Packaging design
optimization - reduced
footprint, lower costs**

Cost Savings

**Packaging design
optimization - smart
packaging**

**Packaging Innovation Gateway
Multi-layer Laminates
Label Optimization**

High Impact Projects

**Food waste reduction
case studies
Life cycle assessments
(LCAs)**

Fast Fact: The global market for flexible packaging is forecast to grow at an annual average rate of 3.4% over the next five years, and is expected to reach \$248 billion by 2020 (Smithers Pira).

2015 HIGHLIGHTS

WEBINARS



8 Webinars offered free for members:

February 2015 – Food Waste and the role of packaging
April 2015 – EPR for Packaging & Printed Paper: Progress and Opportunities in Canada
May 2015 – The Circular Economy: Principles & Practices
September 2015 – Virtual Ship Testing: Breakthrough techniques to optimize package material usage and reduce waste
September 2015 – Developing Next Life Solutions for Multi-Layer Laminates
October 2015 – Can I compost that? Products & materials demystified (collaboration with National Zero Waste Council and Compost Council of Canada)
November 2015 – Are you ready for Cap and Trade? (collaboration with iCompli Sustainability)
December 2015 – Design for compostability: Success stories within the value chain (collaboration with National Zero Waste Council)

NEWSLETTERS & QUARTERLY REPORTS

11 PAC NEXT monthly newsletters, 4 quarterly global EPR reports and 2 PAC FOOD WASTE quarterly newsletters published. Featured guest columnists were as follows:

Jan 2015 – PAC NEXT & PFW Co-chairs
Feb 2015 – Tom Szaky, TerraCycle
Mar 2015 – Katherine O'Dea, Circular Economy Strategists
Apr 2015 – Pascal Lachance, Danone
Apr (EPR) – Al Metauro, Cascades Recovery
May 2015 – Emily McGill, NZWC
Jun 2015 – Gregoire James, Genera Cycle Inc.
Jul (EPR) – Matt Prindiville, UPSTREAM and Heidi Sanborn, California Product Stewardship Council
Jul / Aug 2015 – Phil Brunner, Zzyzx Polymers
Summer (PFW) – Martin Gooch, VCMI and Peter Kallai, CPEIA
Sep 2015 – David Yousif, City of Hamilton
Oct 2015 – Susan Robinson, Waste Management
Oct (EPR) – Jane Bickerstaffe, INCPEN
Fall (PFW) – Ian Ferguson, Chantler Packaging and Julie Hordowick, York Region
Nov 2015 – John Standish, APR
Dec 2015 – Bob Cockerill, PAC Chairman

Our December newsletter featured the Ctrl-Z Bayview Glen Robotics team. PAC NEXT supported the Trash Trek theme and their award-winning Smart Sort Trash Bin, a voice-activated bin to help assist consumers sort their waste correctly (see photo below).



Fast Fact: More than \$31 billion worth of food is wasted every year in Canada, representing 2% of Canada's total GDP (VCMI).

PAC NEXT PROJECTS

Packaging Innovation Gateway – Co-chairs: Dan Lantz, Green By Nature and Keith Fanta, P&G

Goal: Finding practical solutions to today's recycling challenges

Objective: To bring together expertise to develop guidance on “what needs to be true” to successfully collect and recover recyclable and compostable packaging so that they actually get recycled and composted.

Highlights:

- Number of meetings in 2015: 9
- Decision flow charts developed for packaging to determine likelihood of being recycled or composted.
- Report revised – The Top 10 Packaging Challenges for Recycling in a MRF – all 10 case studies updated and 5 new added:
 - o Caps on bottles, labels on PET thermoforms, glass jars & bottles, plastic bags & films, polycoated containers
- Webinar and updated report scheduled for early 2016



Multi-Layer Laminates –

Co-chairs: Guy McGuffin, Consultant and David Yousif, City of Hamilton

Goal: Finding viable recovery solutions for mixed plastic laminates, plastic films and bags

Objective: To bring together industry experts to evaluate and develop strategies to recycle flexible films building on information from the CPIA/SO/CIF flexible film report. To complete a pilot to recycle PCR multi-layer laminated film from a MRF.

Highlights:

- Number of meetings in 2015: 8
- Project team progress report published March 2015
- Webinar offered Sept 2015 – Developing Next Life Solutions for multi-layer laminates
- Successful re-processing trials completed:
 - o Zzyzx Polymers ran 50lb small batch trial using PCR material provided by Stewardship Ontario. A data sheet on the re-processed pellets is available.
 - o Plastics Redeemed using Greenable Technology extrusion process completed trial with PCR laminated film from the Hamilton, ON MRF to make dimensional lumber including deck boards
- New sorting technology from TeTechS uses Terahertz wave technology and has been successfully proven to sort black plastics. Lab scale trials indicate ability to characterize and identify mixed plastics laminates.

Label Optimization Group –

Co-chairs: Guy McGuffin, Consultant and Frances Gamache, Sobeys

Goal: Create the business case for APR certified labels for PET thermoforms

Objective: To bring together industry experts to continue support for programs aimed at improving the quality and value of PET thermoform recycle. In particular, to bring awareness to substrate, ink and label developments that are cost competitive with current labels and importantly avoid staining of rPET .

Highlights:

- Number of meetings in 2015: 2
- Guest columns in the November 2015 and January 2016 newsletters promoting benefits of APR certified labels.

Fast Fact: In a lifetime, the average North American will throw away 600 times his or her adult weight in garbage. A 68 kg adult will leave a legacy of 40,825 kg of trash (Natural Resources Canada)

PAC FOOD WASTE PROJECTS

Food Waste Life Cycle Assessment and Single Serve Coffee Study – Chair: Paul Yang, Mother Parkers Tea and Coffee

Goal: To initiate an LCA study on single serve coffee to create synergy with PAC NEXT and to better understand the relationships between North American packaging and causes of food waste along the food value chain.

Deliverables:

The full LCA report was released in June 2015 and is available here. The report had three key findings:

- Single serve coffee uses an exact serving fresh coffee in a controlled process – leading to minimal coffee wastage
- Drip brewed coffee making is consumer controlled – consumers are more likely to prepare more brewed coffee than needed with the leftover coffee going down the kitchen sink
- Bulk brewing systems typically use a hot plate to keep the coffee warm and can use more energy than single serve systems

PAC also released an executive summary featuring an infographic highlighting the value of packaging.



Strategic Alliances

PAC FOOD WASTE has made strategic alliances with Save Food, the Consumer Goods Forum, the Food Waste Reduction Alliance and Provision Coalition. The program is primed to be a part of the food waste reduction effort locally and regionally and, in particular, to be a catalyst for food waste packaging solutions across the value chain in North America.

Food Waste Reduction Case Studies – Chair: Ian Ferguson, Chantler Packaging

Goal: To identify and build an inventory of global packaging case studies for food waste reduction.

Deliverables:

10 new additions make a total of 18 case studies now featured in the PAC FOOD WASTE Reduction Case Studies database. Case studies cover six areas of the food value chain from raw material transportation to consumer. There are a range of solutions presented, including modified atmosphere packaging that extends shelf life, shown in the examples from Chantler Packaging, Sunset®, Amcor and Tempo Plastics. Resealable technology is also featured from Bemis, as well as smart labels from Insignia Technologies, a dispensing solution from LiquiGlide™, and portion control packaging from Mother Parkers. Also included are Sensor Spot and Polymer Logistics.

Packaging case studies for the PAC FOOD WASTE Reduction database can be submitted here.

Who's Who of Packaging and Food Waste Reduction Initiatives – Chair: Rachel Morier, PAC

Goal: To develop a who's who of companies, organizations, associations engaged in packaging and food waste.

Objective: To identify research and collaboration opportunities and to monitor progress in reaching food waste reduction targets

Deliverables:

The first version is available here. Second release is targeted for Spring 2016.

Fast Fact: In June 2015, the Consumer Goods Forum agreed to halve food waste within the operations of its 400 retailer and manufacturers members by 2025.

WORKSHOPS & EVENTS

MRF TOURS

Two Material Recovery Facility (MRF) tours were offered in the USA during 2015. Waste Management hosted an event at their JMK Fibers facility in Tacoma, near Seattle, and Rumpke at their facility in Cincinnati. Both occasions offered a forum for representatives from the packaging industry, municipalities and non-profit worlds to get a “hands on” look at the complex challenges of sorting and recovering recyclables effectively. The hope is that by coming together we will be able to create more awareness, discussion and collaboration on pragmatic, forward-looking solutions to recover more packaging materials in a cost effective way.

Two MRF tours were also offered through the PAC Central Leadership Council. In May 2015, the City of Hamilton offered a tour at their dual stream facility along with a seminar featuring five guest speakers to discuss ‘The Life of a Package in a Sustainable Recycling World.’ Peel Region hosted a tour of their single stream and organics facility in October 2015.



WORKSHOPS

Two workshops were held in 2015:

National Roundtable on Waste prevention and Reduction co-hosted with Metro Vancouver and the National Zero Waste Council at the Toronto Congress Centre on June 16th, 2015

35 invited guests (municipalities, retailers, brand owners, waste management, small business, NGOs) gathered to discuss emergent issues in waste reduction and prevention as well as strategies to enhance collaboration and engagement between industry stakeholders and government. Specific issues discussed included the important areas of product design and packaging, food waste and the circular economy.



PAC FOOD WASTE Workshop held in Mississauga on December 2nd, 2015

The purpose of the workshop was to create a call-to-action across the packaging and food value chains to address the huge challenge of reducing food waste and to empower our 50 member companies to transparently collaborate in identifying and promoting packaging solutions that can mitigate and reduce food waste.

Over 30 people attended the workshop. Three keynote speakers – Dr. Keith Warriner, University of Guelph, Ron Cotterman, Sealed Air and Angela Dennis, Nestlé talked about the value of packaging and technology to reduce food waste. Outcomes have been integrated into our 2016 strategic plan (see page 11).

Fast Fact: Food waste is responsible for over 7% of the world's greenhouse gas emissions (GHGs), making it a key challenge in tackling climate change.

TRAINING

Two Packaging Optimization & Food Waste Reduction training courses were offered in 2015 – one in Anaheim, California in February 2015 and the other in Toronto, Ontario in April 2015. Both attracted 15 attendees eager to learn more about what it takes to design and develop sustainable packaging executions that can meet the sometimes conflicting demands of protecting, preserving, promoting, being convenient, easy and safe to use, using the right amount of packaging material for the job. The course also provides guidance on how to set up sustainability programs within small, medium and large enterprises.

Also in April 2015, PAC collaborated with ITEGA in Montreal, Québec and held a lecture and workshop-based Active and Intelligent Packaging Solutions and Packaging Design seminar to provide tools and solutions to combat packaging and food waste to 20 attendees.



PRESENTATIONS & LECTURES

PAC attended and presented at events including the Municipal Waste Association Spring Workshop in Huntsville, Ontario on May 14th, AMERIPEN Annual Meeting in Alexandria, Virginia on June 10th and 11th, the Conference on Canadian Stewardship in Banff, Alberta from September 30th to October 2nd and Zero Waste Conference in Vancouver, British Columbia on October 29th. PAC also provided guest lectures to Graphic Communications Management students at Ryerson University and Michigan State University's School of Packaging.



Fast Fact: The first PET bottle was recycled in 1977 (NAPCOR).

2016 PLANS

Plans were shared at our December 2015 meetings with the Leadership Council and priority focus areas are as follows:

PAC NEXT

Driving harmonization

- Support a standardized and harmonized approach to facilitate increased recovery and recycling of current recyclables.

Finding solutions for high impact non-recyclables

- Continue to support excellent pilot effort on laminates, more work on PET thermoforms and impact of mixed PCR plastics. Understand the MRF of the future.

Impactful communications

- Address hot topics e.g. circular economy, food waste, compostables, energy from waste through webinars, education and awareness

Stay at the forefront of EPR developments in Canada, USA and Europe

- High priorities are to provide (1) guidance, information and a position on the Ontario Waste-Free Bill 151 (2) expert input as appropriate re the CalRecycle Manufacturers Challenge (3) informed updates on Circular Economy developments across the EU.



PAC FOOD WASTE

PFW will continue to build upon the existing program projects as follows:

- **Update the “Who’s who” report** on Food Waste reduction initiatives globally
- Continue the call for **new case studies** that highlight the positive intersect of packaging in reducing food waste
- Explore new opportunities for **LCA studies** and look at fresh produce in particular
- Prepare a white paper on **date labeling**

Headline priorities and focus areas that came out of the PFW workshop were as follows:

Communications effort

- PFW should facilitate collaborative and informed discussion across the food value chain to highlight: (a) the positive role that packaging can play in reducing food waste through simple content and messaging and, (b) solutions that work for brand owners, retailers, municipalities and critically, consumers

Close the data gap

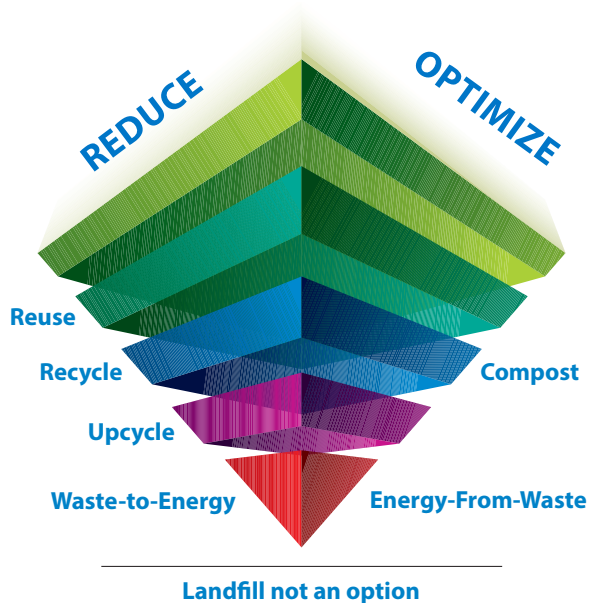
- Canadian food waste data is based upon estimates only. PFW should encourage and support studies that investigate all sources of food waste across the entire supply chain and the setting of standards that will allow measurement and quantification.

Webinars

- Offer webinars that support the communications effort and invite all 3 keynote speakers from the PFW workshop to participate in a webinar to be scheduled for early 2016 - Dr. Keith Warriner, University of Guelph, Ron Cotterman, Sealed Air and Angela Dennis, Nestlé.

Fast Fact: In September 2015, the U.S. EPA and USDA announced a national food waste reduction goal, calling for a 50-percent reduction by 2030.

The PAC NEXT Way



Goal – Minimize recovery system costs, maximize recycling rates, develop viable end markets.

Materials – All Packaging Materials Must Be Recovered.

Landfill Bans – For All Recyclable Materials

Recovery Hierarchy – Prioritize 3R's and Composting with Energy-From-Waste as part of an Integrated Waste Management System.

New Packaging & New Materials – Use PAC NEXT Design Optimization Tools to Assess All New packages prior to commercialization.

Harmonized Recovery – Harmonize Municipality collection programs by Province and Nationally (avoid every program being different)

Harmonized Reporting (Canada) – a national reporting system (e.g. Canadian Stewardships Services Alliance) to reduce administration costs and to improve the accuracy and timeliness of reporting.

Standard of Service – Minimum and standardized level of service for all municipalities to improve participation and maximize potential recovery through convenience.

Consumer Communications – Communications must be consistent from municipality to municipality. Must consistently engage, educate and inform consumers on the recovery of packaging material.

The PAC FOOD WASTE Way

We are currently developing the PAC FOOD WASTE Way, a set of principles and guidelines aimed at helping stakeholders optimize packaging designs to mitigate food waste. Your feedback is welcome.

Goal – Understand the sources of food waste across the supply chain and the role that packaging can play in reducing this waste

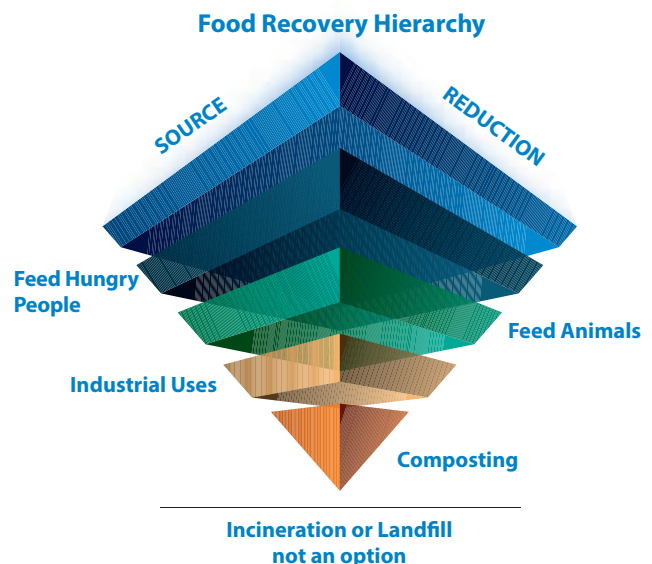
Food Hierarchy – Integrate composting as a valuable option for both organics and compostable packaging.

Food labelling – Harmonized food labelling standards are needed that avoid good quality food from being thrown away and that enable increased and safe food donations

New Food Packaging – Use LCA tools to assess environmental footprints including impact on food loss and food waste

Standard of Service - Establish guidelines and protocols for accepting certified compostible packaging into green bin programs

Consumer Communications – Educate consumers on the valuable role that packaging plays in protecting and preserving food. Support programs that promote healthy diets, portion control and efficient purchase habits.



PAC NEXT & PAC Food Waste Members



Alan Blake Consulting



GDI Packaging Solutions



Guy McGuffin

HARLUND

HEIDELBERG

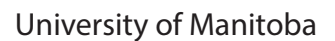


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