An evidence-based approach to advancing open science at the University of Ottawa: Experiences from the Open Science Working Group

Presentation by: Leigh-Ann Butler

29 May 2025

Objective

→ Mandate of the Open Science Working Group

→ Approach to data collection

→ Results

→ Recommendations

→ Conclusions

Definitions

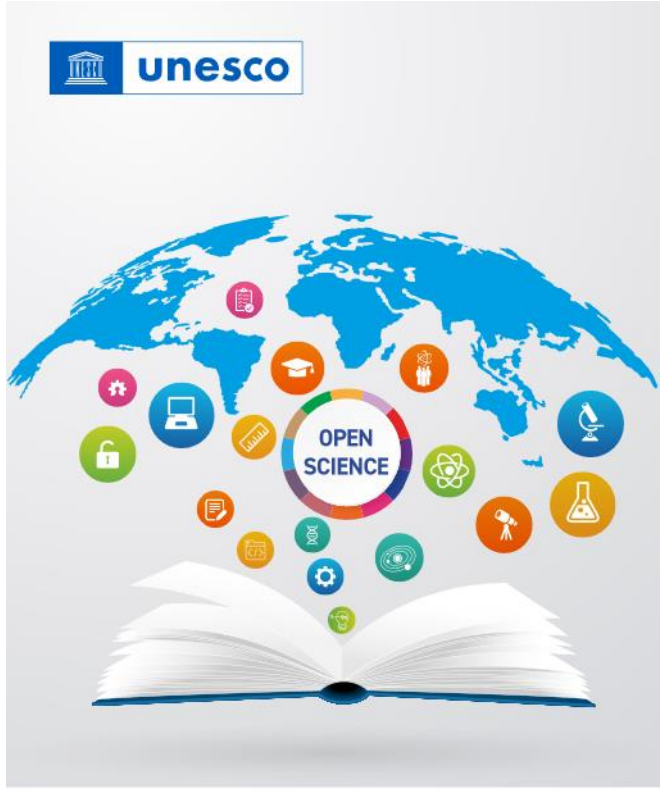
Open Science:

"...an inclusive construct that combines various movements and practices aiming to make:

- multilingual scientific knowledge openly available, accessible and reusable for everyone,
- to increase scientific collaborations and sharing of information for the benefits of science and society, and
- to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.

It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities [...]"

(UNESCO, 2021)



UNESCO Recommendation on Open Science

UNESCO – Open Science Pillars

The University of Ottawa's Open Science Working Group

- In 2023, uOttawa formed an Open Science Working Group (OSWG) with the mandate to develop uOttawa's position as an open science leader and enhance its ability to produce cutting edge and impactful research
- The OSWG aimed to:
  - contextualize global and national developments;
  - understand their implications for uOttawa; and
  - develop recommendations the university can implement to advance open science practices and promote a culture of open science.
- Membership :
  - Co-chairs:
    - Talia Chung, University Librarian and Dean of Libraries
    - Martine Lagacé, Associate Vice-President, Research, Promotion, and Development
  - Representatives from 9 faculties, the Library, uO Press, and a PhD student

Questions examined by the Working Group

- In order to achieve the vision set out in Transformation 2030, how can the university leverage existing open science strengths and further promote open practices?
- What set of principles can the university develop to guide open practices and open access investments, to support uOttawa's research activities?
- How can uOttawa support and incentivize open research practices via the creation, dissemination, and accessibility of research in French, which is fundamental to uOttawa's mandate?
- What approaches and best practices are adopted by peer institutions, in Canada and internationally, to increase uptake of open science?

Meeting themes & approach to data collection & analysis

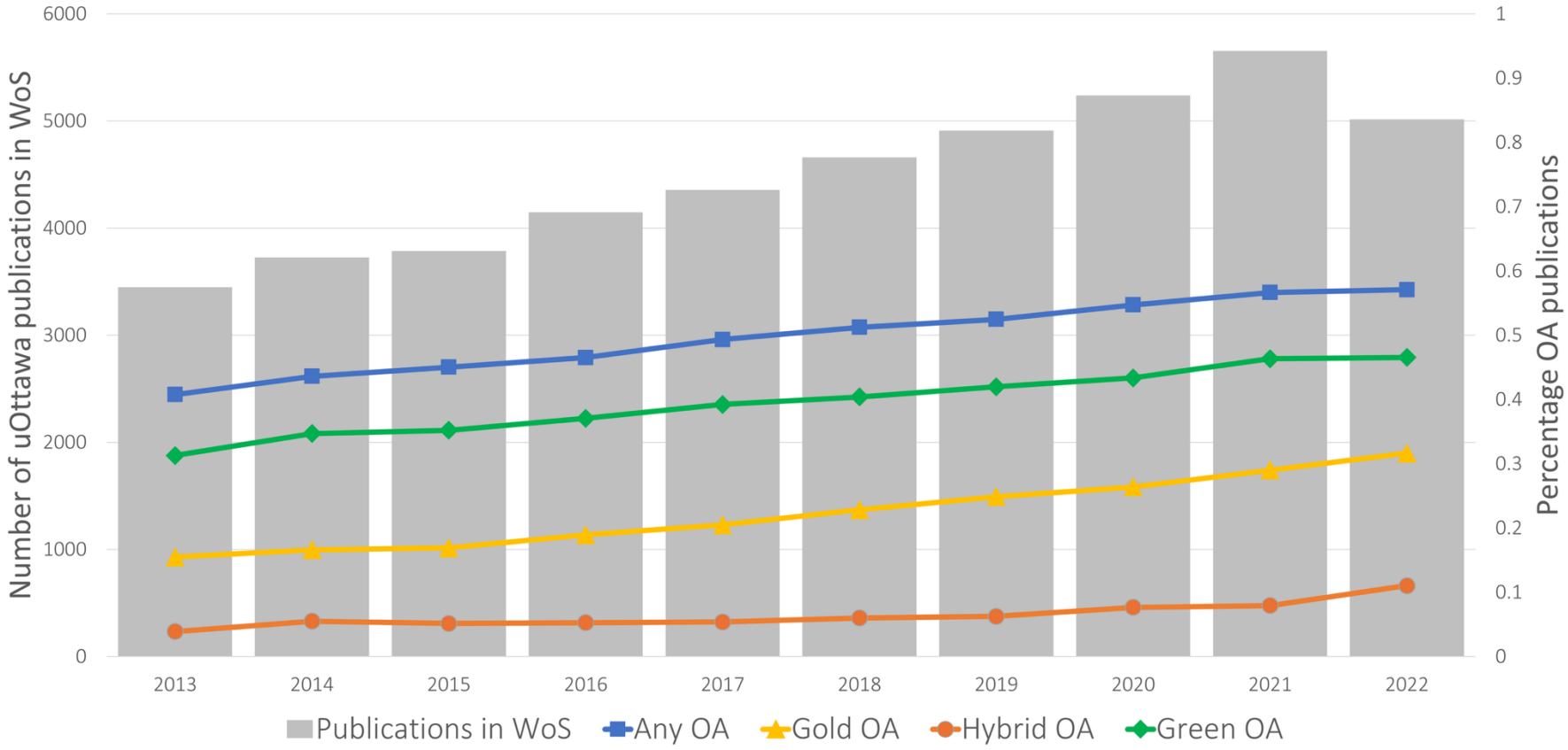
2023-24	Topic	Method
October	Introduction – Open science at the University of Ottawa	Bibliometric analysis
November	Barriers to open science; Open Science policies (institutional, national, and international)	Environmental scan and review of national and international OS/OA policies and initiatives
December	The open access publishing landscape (copyright, publication models, deceptive/predatory publishing)	Literature review
January	Article processing charges and publishing agreements	Bibliometric analysis
February	Open practices (open data, open peer review), and research assessment (DORA)	Literature review and OSWG member presentations
March	A look at disciplinary open science practices (e.g., clinical trial registration, code, and software)	OSWG member presentations
April	Open access and the francophonie	Literature review
Cross-cutting themes:	La francophonie | disciplinary practices | academic careers and research assessment	

Data collection & analysis

- Data collection & analysis took place from September 2024 until June 2024
- The research team:
  - S. Haustein, Associate Professor (Arts) and Special Advisor to the Chairs of the Working Group
  - L. Butler, Scholarly Communication Librarian
  - C. Ripp, Research Services (Data) Librarian
  - M. Hare, Research Assistant and PhD student, Digital Transformations and Innovation, uOttawa
  - S. van Walsum, Research Assistant and PhD student, Digital Transformations and Innovation, uOttawa

Results

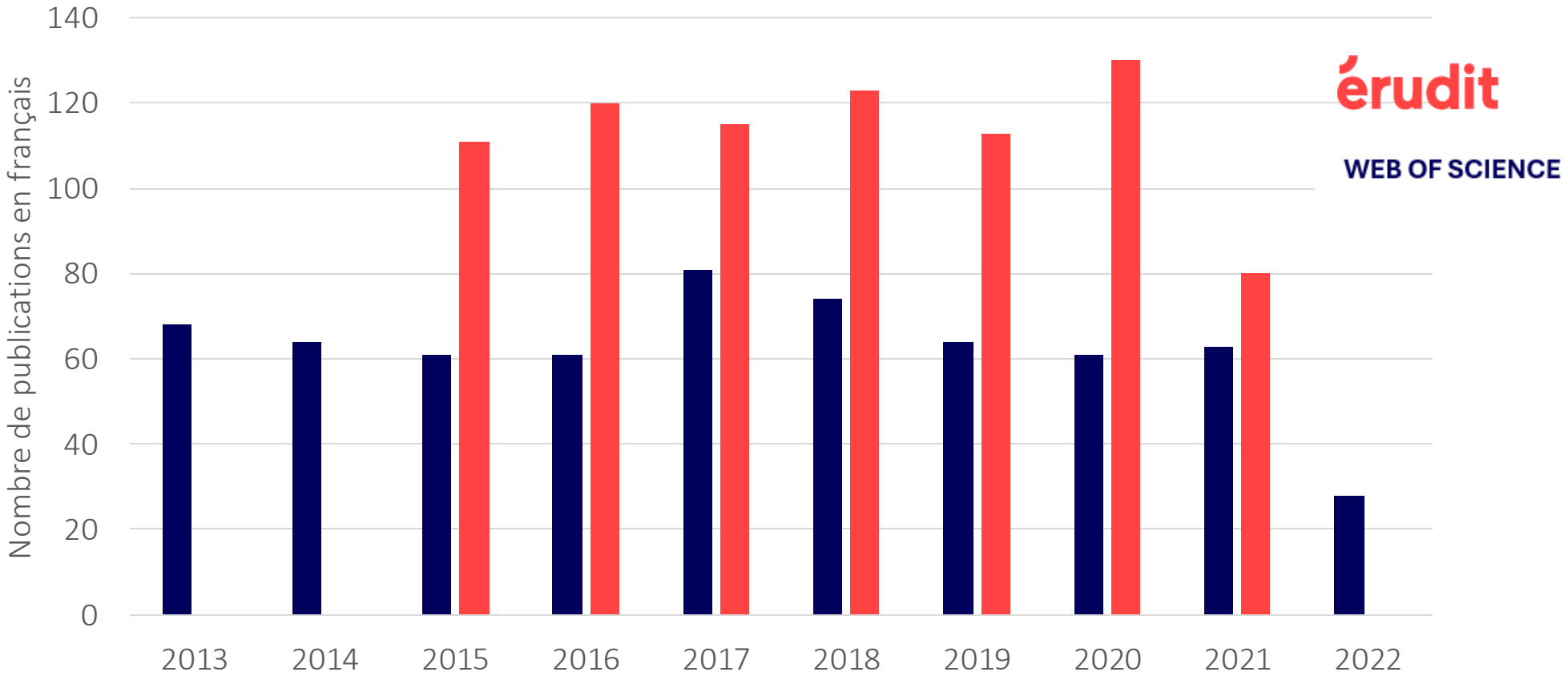
uOttawa open access outputs and its characteristics



Based on data collected from the Web of Science in January 2023 by Leigh-Ann Butler, Chantal Ripp, and Stefanie Haustein

Results

uOttawa open access outputs and its characteristics



A comparison of articles published in French by uOttawa authors indexed in Érudit and Web of Science in 2022. Data for 2022 was not available for Érudit at the time of analysis.

Results

uOttawa open access outputs and its characteristics

	Publications 2013-2022		Any OA	Green OA	Gold OA	Hybrid OA	Closed
uOttawa		44,952	51%	40%	23%	7%	49%
with co-author from... US	22%	10,076	66%	56%	21%	11%	34%
UK	9%	4,035	80%	74%	26%	17%	20%
Australia	6%	2,885	73%	65%	25%	14%	27%
China	6%	2,830	54%	45%	26%	8%	46%
Germany	6%	2,517	75%	69%	23%	17%	25%
France	5%	2,395	69%	61%	19%	13%	31%

Based on data collected from the Web of Science in January 2023. Top 6 international collaborators represent number of uOttawa publications including at least one co-author from respective country.

Results

Open science policies - Canada and globally

Country	Funding Agency	Policy					Embargo	Enforcement		Format			
Canada	Québec (Fonds de recherche – Nature et technologies; Fonds de recherche – Santé; Fonds de recherche – Société et culture)	✓	✓	✓		✓	0	✓	✓	✓			✓
	CIHR IRSC / NSERC CRSNG / SSHRC CRSH	✓	✓	✓			12	-		✓			
United States	NIH National Institutes of Health – Turning Discovery Into Health	✓	✓	✓			12	✓	✓	✓			
		✓	✓				0	✓		✓	✓		
United Kingdom	UK Research and Innovation	✓	✓	✓	CC	✓	0	✓	✓	✓		✓	
Australia	Australian Government National Health and Medical Research Council	✓	✓	✓*		✓	0	✓		✓	✓	✓	✓
	Australian Government Australian Research Council	✓	✓	✓	CC		12	-		✓		✓	✓
Germany	DFG Deutsche Forschungsgemeinschaft German Research Foundation	✓	✓	✓	CC		-	-		✓		✓	
France	anr agence nationale de la recherche	✓	✓	✓*	CC	✓	0	✓		✓	✓	✓	✓
European Commission	HORIZON EUROPE	✓	✓	✓		✓	0	✓	✓	✓	✓		

- Gold OA
- Green OA
- Hybrid OA
- Hybrid (Transformative only)
- Creative Commons License
- Commitment to monitor
- Policy applies to journal articles
- Policy applies to data
- Policy applies to books and chapters
- Policy applies to other outputs (theses, patents, creative output…)

Underlying data:

van Walsum, S., Butler, L., Hare, M., Ripp, C., Haustein, S. *Open science policies - Canada and globally.* https://docs.google.com/spreadsheets/d/1WZvo4siLIiUIsggRIsrlYT-_oDqNDiBH7Z4BV1hhm58/edit?gid=0#gid=0. CC-BY 4.0.

Results

Open science policies and guiding principles U15 & other institutions

University	Approach	Policy				Embargo	Enforcement	Format			
Institution-wide											
THE UNIVERSITY OF BRITISH COLUMBIA	Declaration	✓				-	-	✓	✓	✓	✓
UNIVERSITÉ LAVAL	Policy	✓				0	-	✓			
McGill UNIVERSITY	Declaration	✓	✓	✓		-	-	✓	✓	✓	✓
Université de Montréal	Policy	✓				0	👁	✓		✓	
SFU SIMON FRASER UNIVERSITY	Policy	✓				0	-	✓			
Library											
uOttawa	Policy	✓	✓	✓	CC	12	-	✓	✓	✓	✓
UNIVERSITY OF SASKATCHEWAN	Commitment	✓	✓	✓		-	-	✓	✓	✓	✓
Western UNIVERSITY · CANADA	Declaration	✓	✓	✓		-	-	✓	✓	✓	✓
UNIVERSITY OF ALBERTA	Statement	✓	✓	✓	CC	12	-	✓	✓	✓	✓

Gold OA
Green OA
Hybrid OA
Hybrid (Transformative only)
Creative Commons License
Commitment to monitor
Policy applies to journal articles
Policy applies to data
Policy applies to books and chapters
Policy applies to other outputs (theses, patents, creative output...)

Underlying data:

van Walsum, S., Butler, L., Hare, M., Ripp, C., Haustein, S. *Open science policies and guiding pricinples U15 & other institutions.* https://docs.google.com/spreadsheets/d/1FrCFMGn_QBZ19UMTRiI0Td5wxuD7QOxWMgIuHfke7xM/edit?gid=0#gid=0. CC-BY 4.0.

Results

Cost estimate of open access at uOttawa

2022 publications in Web of Science	Gold OA publications	Estimated gold fees paid by authors (CAD)	Number of hybrid OA publications	Estimated hybrid fees paid by authors (CAD)	Total amount of estimated APCs
WoS 2022 articles with uOttawa author	1,588	$ 4,893,462	554	$ 2,446,929	$ 7,340,390
with uOttawa corresponding author	692	$ 2,087,657	186	$ 806,730	$ 2,894,387
with uOttawa Library agreements		$ 1,577,133		$ 573,442	$ 2,150,575*

uOttawa sources of financing APCs:

→ Library Shared Support Fund for gold OA: $ 133,324

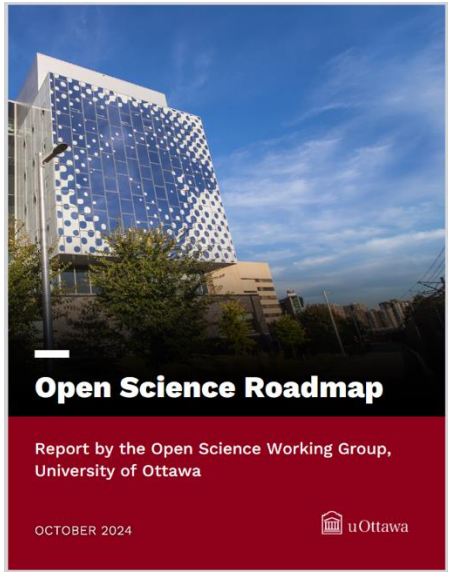
→ *Discounts negotiated by library and tied to bundled subscription agreements

→ Other sources: Faculty research grants, OVPRI grants, Tri-Agency funding

Recommendations

uOttawa core values	→ Innovate boldly and sustainably → Build trust and connections → Collaborate with transparency			
Pillars	**A. Foster a culture of Open Science at uOttawa**	**B. Value open science practices**	**C. Promote and invest in open infrastructure**	**D. Implement open science into uOttawa's strategic plan**
Priorities	**A.1. Education** We recommend that uOttawa implement training programs, workshops, and events that train researchers in open science practices.	**B.1. Hiring, Tenure & Promotion** We recommend that uOttawa integrate open science into the academic reward system and adopt evaluation frameworks to foster and value diversity in scholarly communication	**C.1. Tools and resources** We recommend that uOttawa create tools and resources, and promote existing ones, to build awareness, encourage best practices, and provide guidance to the community in navigating the complex landscape of open science.	**D.1. Policy** We recommend that uOttawa be a Canadian leader by implementing open science policies, and endorsing relevant declarations and initiatives aligned with its strategic objectives as well as Canadian and international developments.
	A.2. Capacity building We recommend that uOttawa ensure dedicated roles and task forces to promote and advocate for open science practices, and to coordinate existing expertise.	**B.2. Institutional incentives** We recommend that uOttawa implement recognition and rewards that incentivize open science practices, including awards and prizes, teaching releases, competitions or communication initiatives that highlight open research.	**C.2. Evaluating progress** We recommend that uOttawa evaluate the progress towards making research outputs and practices open and transparent and recognize the importance of regular monitoring to support evidence-based decision making.	**D.2. Francophonie and bilingualism** We recommend that uOttawa place particular emphasis on promoting and supporting open research outputs by the French-language community, and support francophone researchers in publishing and communicating their work.
Sample actions	→ Establish OS continuous learning programs → Create an OS student course → Promote OS outreach → Establish an advisory committee on OS → Appoint an OS Research Chair → Coordinate with other institutions advancing OS	→ Add language to Tenure and Promotion and recruitment material valuing OS → Provide clear guidance to Tenure committees → Create on OS Prize of Excellence → Provide a teaching release for OS-related work	→ Create a repository of OS resources → Develop OS communications campaigns → Develop an OS monitoring framework → Integrate OA publication cost into existing financial systems	→ Develop an institutional Statement of OS principles → Work towards OS policy development → Identify and increase awareness of OS-related developments across campus → Ensure greater visibility of French research via OS practices → Continue to prioritize funding support of infrastructure and initiatives that support French research
Next steps /critically enable	Institutional adoption, raising awareness, action plan development			
	Data collection and evaluation			

uOttawa Open Science Roadmap



Four pillars, eight recommendations

A. Foster a culture of open science at uOttawa

- **A.1: Education:** training programs, workshops, and events
- **A.2: Capacity building:** dedicated roles and task forces

B. Value open science practices

- **B.1: Hiring, tenure & promotion:** integrate open science into the academic reward system and evaluation
- **B.2: Institutional incentives:** recognition and rewards that incentivize open science practices

C. Promote and invest in open infrastructure

- **C.1: Tools and resources:** tools and resources to build awareness, encourage best practices, and provide guidance
- **C.2: Evidence base:** evaluate progress towards making research outputs and practices open and transparent

D. Implement open science in uOttawa's strategic plan

- **D.1: Policy:** implement open science policies, and endorse relevant declarations and initiatives
- **D.2: Francophonie and bilingualism:** promote and support open research outputs by the francophone community

Report: https://doi.org/10.20381/ruor-30839
OVPRI website: https://www.uottawa.ca/research-innovation/impact-discoveries/open-science-roadmap

Lessons learned

- Developing a robust evidence-base is resource intensive
- Robust evidence supported:
  - Constructive conversations across the disciplines
  - Multi-faceted analysis: environmental scan, bibliometrics, financial analysis
- Walk the talk! Sharing the report and data openly (CC-BY-NC) will provide other institutions with a starting point

Merci - Thank you!