

From Uncharted Waters to a Mapped Horizon

Building a Research Intelligence App with Power BI
and Integrated Open and Institutional Data



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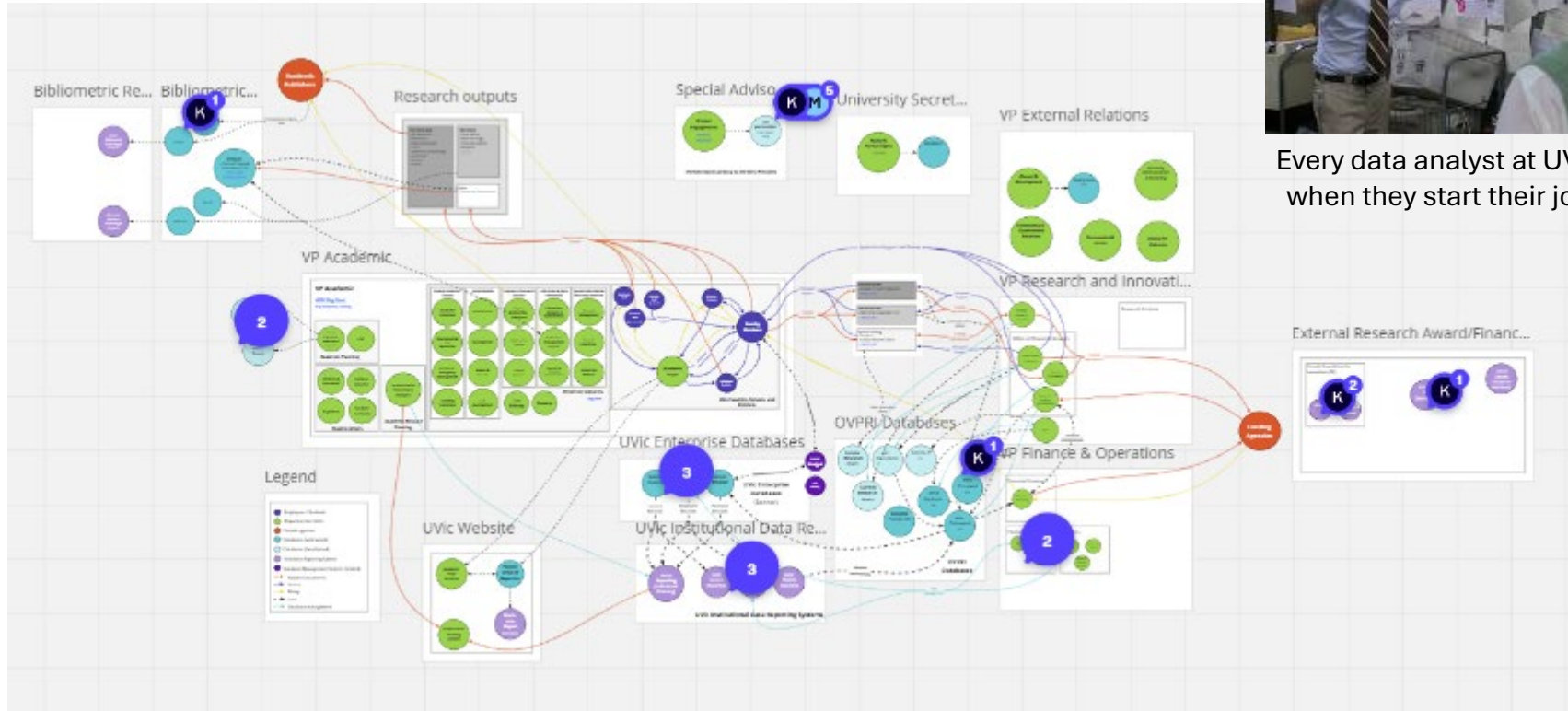




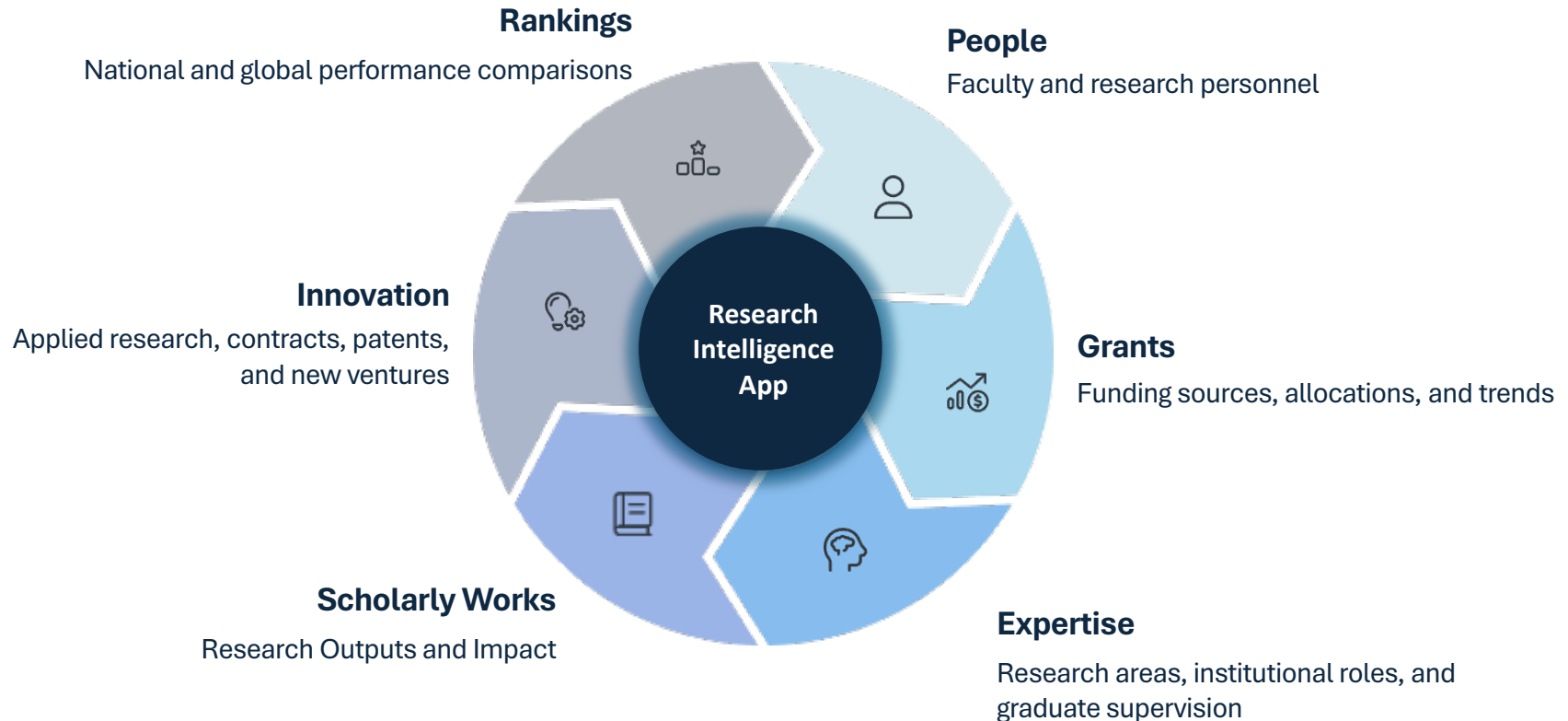
Mapping UVic's Data Ecosystem



Every data analyst at UVic when they start their job



UVic's Research Data Ecosystem



From Proposal to Platform (2022 – Present)



Spring 2022

Proposal approved



Fall 2022

First 3 dashboards launched: Research Income, Bibliometric Benchmarking & Faculty Database



Spring/Summer 2023

Launch to VPRI Executive, then soft rollout to Deans, ADRs, FGOs



Winter 2024

University Rankings Dashboard added



Summer 2024

Research Innovation Dashboard added



Fall 2025

International Connections Dashboard launched



Spring 2026

ORCID integration, Data Pipeline redesign



Future

Potential live links to databases; new research insights across campus

One App, Many Dashboards



Power BI Container

Houses multiple interactive dashboards



Targeted Questions

Each dashboard answers specific queries




Regular updates

Quarterly refreshes, biannual major updates



Microsoft | Power BI

UVic Research Intelligence

A collection of reports providing an overvi... 



Owner: Karina Giesbrecht

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What's Inside: The Dashboard Suite



Research Income

RAIS + CAUBO for internal/external funding trends



Faculty Database

Rich researcher profiles from 7+ sources, now with ORCID



Research Innovation

Contracts, patents, and spin-off companies



Bibliometric Benchmarking

Publication metrics across 29 Canadian peer institutions



International Connections

Co-authorship & institutional linkages via OpenAlex

NEW



University Rankings

THE, QS, ARWU & Maclean's comparisons

Exploratory + Transactional: Some dashboards support open-ended exploration (trends, benchmarking). Others answer repeatable questions (“What’s this researcher’s supervision area?”). Most do both.



How the Data Flows



Data Sources

Internal: Banner (HR & Students), RAIS, other internal databases

External: OpenAlex, ORCID, CAUBO, UVicSpace



Processing

Python Medallion Architecture, Bronze→Silver→Gold, Parquet

Parquet output for Power BI



Security

Automated data quality gates, Human-in-the-loop validation, Row-validation, Row-level access controls



Delivery

6 Power BI dashboards, Quarterly refreshes, 100+ campus-wide campus-wide users

NEW

International Connections Dashboard

Mapping UVic's global research collaborations through co-authorship data



Built on OpenAlex

Co-authorship data from the full UVic OpenAlex publications dataset, matched against UVic's researcher registry to identify institutional partnerships globally.



Geographic & Topic Mapping

Explore collaborations by country institution, and research topic. Filter by faculty, department, or time period.



Strategic Insight

Supports international partnership development, identifies emerging collaboration networks, and informs global engagement strategy.

Powered by the OpenAlex AWS S3 institutional snapshot — 100,000+ global institutions processed quarterly.

ORCID Integration into the Faculty Database

What ORCID brings to researcher profiles

- Persistent researcher identifiers linked to UVic IDs
- Employment history, education, and funding data
- Works and activities beyond what OpenAlex captures
- Automated matching via the ETL pipeline's fuzzy-match and registry system

Faculty Database: The Spine

Internal HR — appointments, units

Find an Expert — public profiles

ORCID — identifiers, CV data

NEW

OpenAlex — publications, topics

RAIS — grants & funding

EDW — graduate students

UVicSpace — theses & dissertations

Each researcher profile is now enriched by 7+ data sources, creating the most comprehensive view of UVic's research community.

Built with care: our commitments



UVic Standards

Follow UVic privacy, security and records management standards
Informed by VPRI data governance protocols



Responsible Metrics

Based on DORA principles
Guided by the Leiden Manifesto



Balanced Approach

Transparency with care and context
Meaningful metrics, not just numbers

Right Data for the Right People

Row-level security ensures each user sees only what they need.

Full access

VPRI & UVic Executive

Unit-specific data

Deans, Chairs, Faculty Grants Officers

Tailored views

Libraries, Finance, Research Centres

By request

Other roles, subject to approval

By the Numbers

6

Primary Dashboards

Comprehensive research intelligence

15+

Data Sources

Integrated information ecosystem

100+

Authorized Users

Campus-wide access across roles

1

Data Community

Cross-campus collaboration (DAWG)

1st

Unit at UVic

Pioneered innovative insight delivery

4x

Quarterly Data Updates

+ major feature releases 2-3 times/year

Supporting Our Users In Their Work



Narrative CVs and
award nominations



Trend analysis for
grant strategy



Benchmarking
across units and
institutions



Discovering under-
recognized
strengths



Transferable Takeaways

What you can take back to your institution



Start with open data

OpenAlex, ORCID, and CAUBO are freely available and can form the backbone of a research intelligence platform without vendor lock-in.



Power BI as delivery platform

If your institution has Microsoft 365, you may already have Power BI. It's an accessible, scalable tool for non-technical data consumers.



Frame metrics responsibly

Align with DORA and Leiden from the start. Position your platform as a storytelling tool — it shapes how people trust and use the data.



Build a data community

A cross-campus working group (like DAWG) creates shared ownership, surfaces expertise, and builds the cultural infrastructure for data work.

Live Walkthrough: App Overview




What's Next

- Expanding international collaboration insights
- Deeper ORCID integration into UVic systems and researcher profile enrichment
- Exploring live database connections to replace batch ETL where feasible
- Growing the data community – DAWG meets regularly

Thank you! Questions?

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From Uncharted Waters to a Mapped Horizon

Speaker notes — BRIC 2026 Conference, Edmonton. Karina Giesbrecht, University of Victoria.

Slide 1 — From Uncharted Waters to a Mapped Horizon (title)

I'm a Senior Research Data Analyst in UVic's Office of the VP Research & Innovation, and the developer behind the Research Intelligence App. The app responds to UVic's evolving research data landscape, with the goal of supporting insight, storytelling, and strategic planning. It's built and delivered through Power BI — access was enabled by our A5 license in 2023.

Slide 2 — Opening visual

When I started, UVic's research data landscape felt like an uncharted ocean — vast, deep, and hard to navigate.

Slide 3 — Mapping UVic's Data Ecosystem

This was an early attempt to map UVic's data ecosystem: siloed data and murky connections, with different rules, update cycles, and levels of complexity — everything from a single spreadsheet to a webpage to an enterprise database system. Coming from a marine science background, I saw the data as a layered ecosystem. My goal was to build tools that help others navigate and explore it, but first I needed to understand how research data fit into the whole picture.

Slide 4 — UVic's Research Data Ecosystem

Research data moves in a cycle: people and funding drive activity, which produces outputs, which build reputation, which in turn attracts future funding. The RI App sits at the centre to connect it all, organized around six key domains — People, Grants, Expertise, Scholarly Works, Innovation, and Rankings — so users can explore UVic's research landscape from any angle.

Slide 5 — From Proposal to Platform (2022–Present)

The platform has grown steadily since the proposal was approved in spring 2022. The first three dashboards — Research Income, Bibliometric Benchmarking, and the Faculty Database — launched in fall 2022, followed by a launch to the VPRI Executive in 2023 and a soft rollout to Deans, ADRs, and FGOs. University Rankings and Research Innovation were added in 2024, the International Connections dashboard in fall 2025, and ORCID integration with a redesigned data pipeline in spring 2026. The road ahead includes potential live database connections and new insights across campus.

Slide 6 — One App, Many Dashboards

In Power BI, an “app” is really a container for multiple dashboards. This one is designed for data consumers rather than report builders — people who need answers, not authoring tools. It's refreshed quarterly, with major features added two to three times a year.

Slide 7 — What's Inside: The Dashboard Suite

The suite now has six dashboards: Research Income, Bibliometric Benchmarking, the Faculty Database, International Connections, Research Innovation, and University Rankings. Each combines internal and external sources. Some are exploratory — built for trends and comparisons — while others are transactional, answering repeatable questions like “What's this researcher's supervision area?” Most do both.

Slide 8 — How the Data Flows

Data comes from a mix of internal sources (Banner HR and student data, RAIS) and external open sources (OpenAlex, ORCID, CAUBO, UVicSpace). The pipeline has been rebuilt in Python around a Medallion architecture — Bronze, Silver, Gold — with Parquet outputs optimized for Power BI. Automated data quality gates and human-in-the-loop validation keep the data clean, and row-level security ensures each user sees only what they should. A lot of effort goes on behind the scenes to make the front end feel simple.

Slide 9 — International Connections Dashboard

This is one of our newest dashboards. It maps UVic's global research collaborations using co-authorship data from our full OpenAlex publications dataset, matched against our researcher registry to identify institutional partnerships worldwide. Users can explore collaborations by country, institution, and research topic, and filter by faculty, department, or time period. It supports international partnership development and global engagement strategy, and it's powered by the OpenAlex AWS S3 institutional snapshot — over 100,000 global institutions, processed quarterly.

Slide 10 — ORCID Integration into the Faculty Database

ORCID is now a data source in the Faculty Database, pulled via the ORCID API and fuzzy-matched against our HR data. It adds persistent identifiers, employment history, and works and activities that go beyond what OpenAlex captures. With ORCID, each Faculty Database profile is now enriched from seven or more sources.

Slide 11 — Built with Care: Our Commitments

Governance, privacy, and responsible metrics are built in from the start. The platform aligns with DORA and the Leiden Manifesto, and emphasizes transparency, context, and ethical use. It's explicitly not a ranking or surveillance tool — the goal is insight, not surveillance.

Slide 12 — Right Data for the Right People

Access is tailored by role — Executive, Deans, FGOs, and librarians each see what's relevant to them — and scoped access adjusts automatically as people move between roles. For example, FGOs and librarians see the bibliometrics and RAIS views relevant to their work.

Slide 13 — By the Numbers

A quick snapshot of where things stand: six primary dashboards, more than 15 integrated data sources, and over 100 authorized users across campus roles. There's one cross-campus data community — DAWG — and we were the first unit at UVic to deliver insight at this scale. Data refreshes quarterly, with major feature releases two to three times a year.

Slide 14 — Supporting Our Users In Their Work

In practice, the app supports the work you already do — narrative CVs, award nominations, and benchmarking. You can filter by PI, unit, field, or time period, and export visuals and tables directly. It's designed to support research-support work, not replace it.

Slide 15 — Transferable Takeaways

These are the things I'd encourage you to take back to your own institution. First, start with open data — OpenAlex, ORCID, and CAUBO are freely available and can form the backbone of a platform without vendor lock-in. Second, consider Power BI as a delivery platform; if you have Microsoft 365, you may already have access, and it's approachable for non-technical users. Third, frame your metrics responsibly from the start — align with DORA and Leiden, and position the platform as a storytelling tool rather than a scoreboard. And finally, build a data community: a cross-campus group like DAWG creates shared ownership and the cultural infrastructure that data work depends on.

Slide 16 — Live Walkthrough: App Overview

[Live walkthrough.] This is where I gave a brief live tour of the app — the landing page and then each dashboard in turn: Research Income (RAIS + CAUBO), Bibliometrics (OpenAlex), the Faculty Database (researcher profiles), Research Innovation (patents and contracts), and University Rankings (THE, QS, ARWU, Maclean's).

Slide 17 — What's Next / Thank You

Looking ahead: expanding international collaboration insights, deeper ORCID integration across UVic systems, exploring live database connections to replace batch ETL where feasible, and continuing to grow the DAWG community. Thank you — I'm happy to take questions, and I'm reachable at karinag@uvic.ca.