



Digital Research
Alliance of Canada

Accelerating Canada's
Research Future.

Alliance de recherche
numérique du Canada

Accélérer l'avenir de
la recherche au Canada.

Strategic Plan 2022-2025





As we strive to
inspire Canada's
researchers, we
also look to
inspire the world.

Message from the Chair of the Board of Directors



With any new venture comes uncertainty. What is often forgotten, is that uncertainty provides a unique opportunity for innovation and creativity.

Over the past year, the Digital Research Alliance of Canada has been determined to use this opportunity to develop a robust Strategic Plan to outline the organization's future goals, objectives and commitments to the researchers of Canada.

This Strategic Plan will allow the Alliance to be guided by its purpose and values, deliver on its pledge to support research innovation and strive for excellence in the execution of its mission. As we strive to inspire Canada's researchers, we also look to inspire the world.

We hope to share this vision for the future with all of you.

This is where the next chapter of our story begins; we invite you to take this journey with us.

Janet M. Davidson, O.C., BScN, MHSA, LLD (Hons)
Chair, Board of Directors
Digital Research Alliance of Canada

Accelerating Canada's Research Future

From discovering insulin to fighting climate change to examining social inequity and beyond, Canada's researchers have collaboratively tackled some of humanity's biggest challenges. Today, research is increasingly urgent, complex and interconnected, and in response, our researchers need better support for data management and better access to specialized software and advanced computing power.

We are accelerating discovery by transforming how digital research infrastructure is designed, managed, sustained and delivered to Canada's researchers and their global collaborators. Investing with vision, planning for the future, improving access to integrated digital research infrastructure and collaborating with a network of partners are all at the heart of what we do.

We both lead and serve, bringing a cohesive pan-Canadian vision for digital research infrastructure and a passion to collaboratively support our brilliant research community as they ask questions, gain understanding, accelerate discovery and transform how we live in our world.

We are
accelerating
discovery.





To catalyze world-class Canadian research for the benefit of all.

The Alliance

The Digital Research Alliance of Canada was established in 2019 as a non-profit organization mandated to coordinate and fund activities related to Advanced Research Computing (ARC), Research Data Management (RDM) and Research Software (RS), and to advance the national Digital Research Infrastructure (DRI) strategy. By closely working with local, regional and national stakeholders, the Alliance will ensure researchers across disciplines have access to the digital tools, services and infrastructure they need to conduct cutting-edge research. This document summarizes the strategic directions for the period 2022-2025.

Our vision

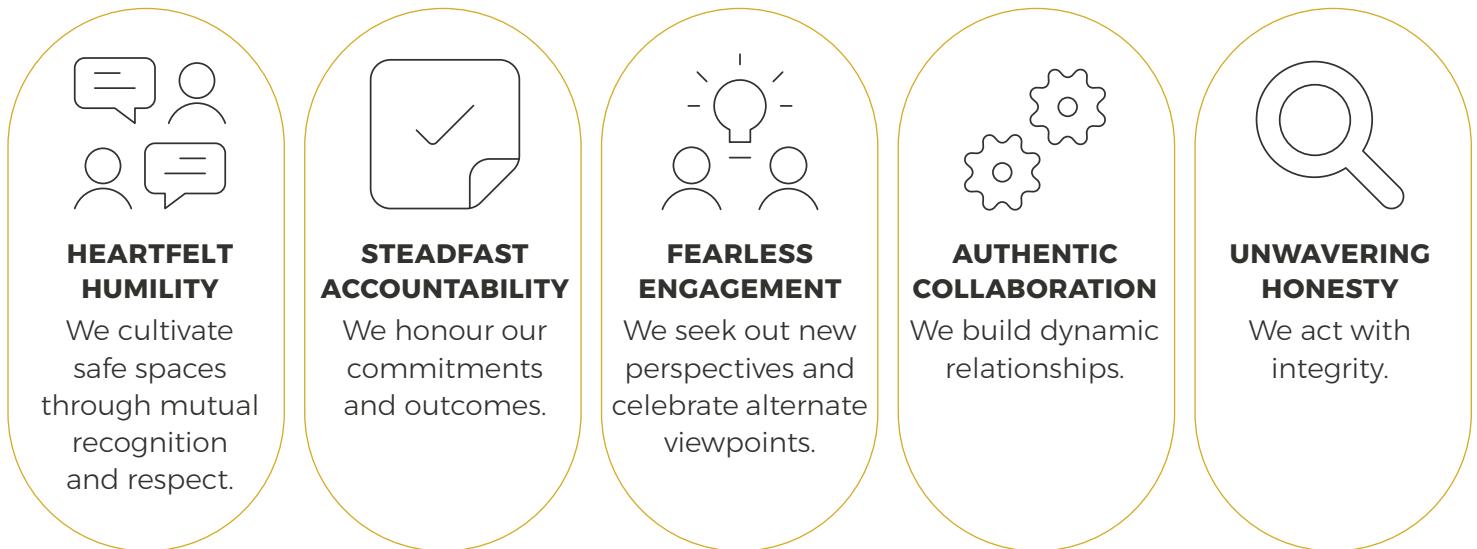
To catalyze world-class Canadian research for the benefit of all.

Our mission

As a trusted and inclusive partner, the Digital Research Alliance of Canada fosters national and global collaboration to provide researcher-centric, sustainable and integrated digital research infrastructure.



Our values



Guiding principles

To ensure we meet the long-term DRI needs of Canada and to help deliver against our mission, we are guided by six principles.

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| <ul style="list-style-type: none">→ RESEARCHER-CENTRIC→ STRIVING FOR EXCELLENCE→ COLLABORATIVE | <ul style="list-style-type: none">→ SERVICE-ORIENTED→ ACCOUNTABLE AND TRANSPARENT→ DIVERSE AND INCLUSIVE |
|--|--|



Ensuring we respond to
the everchanging needs of
Canadian researchers.

Strategic Directions 2022-2025

Building on the findings from current state assessments for RDM, RS and ARC, and a researcher-focused needs assessment, the Alliance's executive team conducted an extensive consultation with the Alliance's Board of Directors and key stakeholders within the DRI community to develop this Strategic Plan for the upcoming three years.

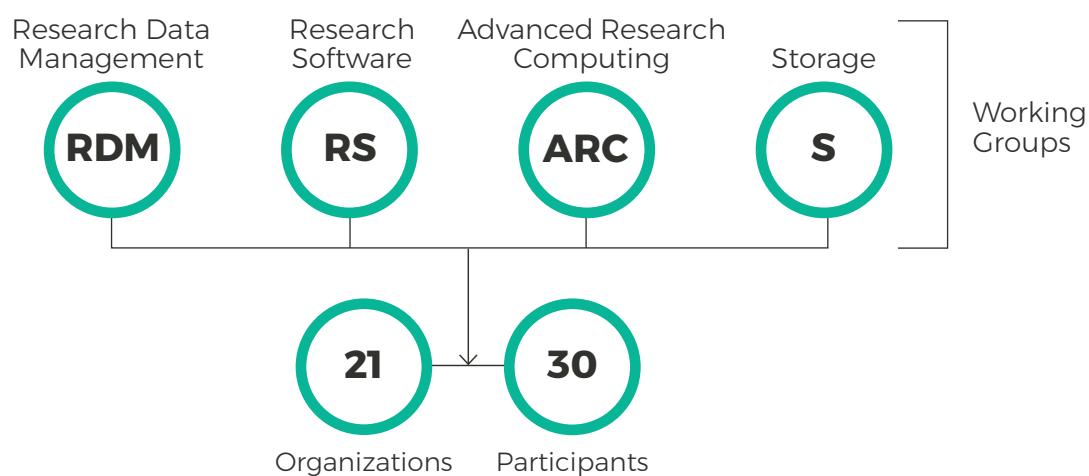
The strategic directions presented in this plan embody the DRI priorities of Canadian researchers as heard in the Needs Assessment and Current State reports. We are committed to maintaining such researcher-centricity through continuous consultations, and the guidance and support of our Researcher Council, a body representing the voice of researchers within the Alliance. This approach will ensure we respond to the everchanging needs of Canadian researchers, and provide them with the digital tools and services they need in the years to come.

Our approach to deliver on the activities presented here will remain true to the collaborative essence of the Alliance. The work ahead will build on the efforts of the broader DRI community, and its success will rely on the engagement and participation of many stakeholders, including Innovation, Scientific and Economic Development Canada, the ARC Regions, National Host Sites, CANARIE, the Canadian Association of Research Libraries and the Compute Canada Federation members, among others.

Collaborating to plan the future of Canada's digital research infrastructure

1

Current State Assessments:



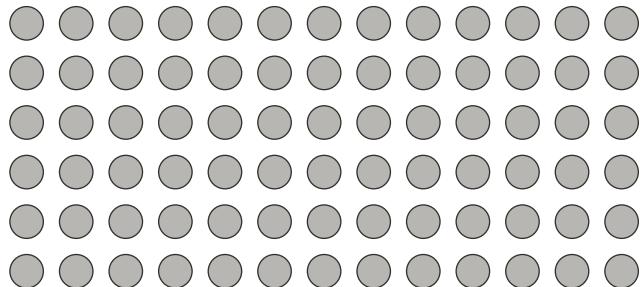
Needs Assessments:



2

Strategic Planning:

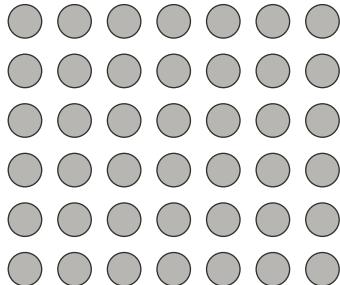
Strategic Questions



8 consultations

78 participants

Strategic Directions



8 consultations

42 stakeholders

The Alliance's executive team conducted an extensive consultation with the Alliance's Board of Directors and key stakeholders within the DRI community to develop this Strategic Plan for the upcoming three years.



Offer services that truly respond to the evolving needs of its users.

Provide quality service to all researchers

The needs of the Canadian research community are as diverse as they are complex. Understanding this nuance and acknowledging the growing reliance of researchers on DRI for their research workflows, the Alliance is committed to supporting all researchers in Canada and to meet their DRI needs with consistent and high-quality service, regardless of their disciplines, geographic region or institutional affiliation.

The tools and services available to researchers, and how to access them is core to an equitable DRI strategy. The availability of these tools and services will be complemented by a robust program of on-going training for researchers that builds their skills in DRI, from introductory to specialized tools and techniques, and that welcomes unique disciplinary needs. Nonetheless, such a researcher-centered approach cannot be achieved without national and international partnerships. The Alliance will work closely with peer organizations, academic institutions and the broader research community to ensure its offering of services truly responds to the evolving needs of its users.

The services that the Alliance will offer include the core DRI pillars: ARC, RDM and RS, as well as their enabling capabilities.

The Alliance will

- Expand the national **advanced research computing** capacity by building on Compute Canada Federation's infrastructure and services, including improving access and use of on-premise and cloud high-performance computing, expanding training, documentation and storage solutions.
- Support researchers with the **stewardship of research data** over its lifecycle through sustainable services and infrastructure that enables the creation of FAIR (Findable, Accessible, Interoperable and Reusable) research outputs, upholds cybersecurity and Indigenous data sovereignty, and facilitates long-term storage and preservation.

- Support researchers in adopting best practices of **research software** development and management throughout the research lifecycle through targeted funding opportunities, training, service catalogues, policies and community development. The Alliance values and recognizes research software as a first-class research output.
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Our commitments to the community

Infrastructure:

- Invest in additional traditional ARC and cloud computing through a financially sustainable plan that considers the infrastructure's maintenance and updating requirements.
- Design and implement risk mitigation measures to prevent service disruption for ARC services (e.g., critical host site maintenance).
- Address inefficiencies in system usage to improve availability and capacity.
- Develop a national strategy for the use of public cloud computing and commercial offerings.
- Invest in additional infrastructure for the long-term storage, curation and preservation of research data.

Tailored service:

- Provide specialized researcher support (e.g., by discipline, demographic) to help researchers with their unique technical needs.
- Optimize the service delivery structure to best serve researchers' evolving DRI needs.
- Collaboratively develop a national strategy for the appropriate management of, and access to, privacy-protected and other sensitive data.
- Expand and support the use of specialized research platforms available for Canadian researchers.

Bilingualism:

- Make services, support and documentation available to all researchers across Canada in French and English, and other languages where applicable.

Equity, Diversity, Inclusion and Accessibility (EDIA):

- Establish guidelines and metrics to ensure all decisions and activities are compliant with the Alliance's foundational principles of EDIA.
- Develop outreach programs and solutions to promote equitable access to, and awareness of, the Alliance's tools and services, regardless of researchers' geography, discipline or institutional affiliation.

Cultural change:

- Develop programs to support the adoption of best practices in RDM and RS development throughout the research lifecycle.

2

Optimize organizational structure and enhance capacity

As the Alliance establishes itself as a national organization, it will be imperative to implement an organizational structure that effectively supports a centralized delivery of core DRI capabilities, as well as the coordination of national efforts and service provision. Such a model ensures that researchers can always find the right support, be it through in-house offerings or those of DRI partners. This organizational structure reconciles the need for coordinating a consistent baseline of service delivery with the sourcing of capabilities internally as well as via external partners. Most importantly, this structure fully reflects the organization's vision and mission.

The development and retention of professional support personnel is critical to Canadian research and innovation.

The Alliance will

- Work with partners to coordinate and grow this community across ARC, RDM and RS specialities, for the ultimate benefit of the research community.
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Our commitments to the community

Protection of intellectual property and cybersecurity:

- Develop a cybersecurity upskilling program for researchers and higher education institutions.

Capacity building:

- Ensure the composition and distribution of DRI professional support personnel responds to the researcher community needs they serve.
- Establish a system for the ongoing DRI training and education of researchers and professional support personnel.

3

Work together for an integrated DRI landscape

As the Alliance identifies which capabilities and services will be developed and provided internally or through partners, it will also define the scope of national, regional and local services. Therefore, in collaboration with partners, it will be essential to identify roles and responsibilities to minimize overlapping services and mandates. This is especially important given the Alliance's efforts to streamline processes and reduce the administrative burden on researchers.

Beyond its efforts to coalesce an integrated national DRI service provision, the Alliance will adopt a proactive approach to broker both public and private sector partnerships for the benefit of Canadian researchers and Canadian society at large.

The Alliance will

Become an ecosystem connector:

- Drive partnership-building activities to increase collaboration and cohesion within the national DRI landscape, as well as between Canadian researchers and global partners.

Define mutually beneficial partnership criteria:

- Enact clear guidelines and protocols governing partnerships, such as business casing approaches, Service Level Agreements and proximity of service delivery. These guidelines will further preserve Canadian Intellectual Property in the context of partnerships with private entities.

Complement core DRI capabilities:

- Drive partnership-building activities to address identified gaps in service offerings and enhance the integration and coordination with partners to bolster complementary service provision that responds to researchers' needs.

Adopt a research lifecycle approach to service development and support:

- Recognizing that the stewardship of research data and research software engages many stakeholders nationally and internationally, seek to adopt and advance measures for interoperability, breaking down silos and enabling greater collaboration.
 - The Alliance is committed to upholding the rights to data sovereignty of First Nations, Inuit and Métis individuals as a core requirement to promote their full participation and inclusion in the national DRI. The Alliance thus embraces its role in advancing reconciliation and their rights to self-determination as recognized by the UN Declaration on the Rights of Indigenous Peoples.
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Our commitments to the community

Coordination of service provision and resource allocation:

- Establish a DRI service classification model that will differentiate between National, Regional and Local service and funding provision, and clearly define the roles and responsibilities of the Alliance.
- Evaluate and improve the current processes for allocating DRI resources to better respond to the needs of all researchers.
- Improve alignment and integration of practices, standards and policies in the DRI ecosystem through close collaboration with the Tri-Council and other national and provincial research funders.

Strengthen support and relationships with Indigenous Peoples of Canada:

- Strengthen relationships and assess the DRI needs in collaboration with First Nations, Inuit, Métis and other Indigenous Peoples in Canada.
- Introduce internal policies that respect and support Indigenous data sovereignty and advance Indigenous Peoples' access and use of the national DRI.

International collaboration:

- Establish national and international partnerships and develop the Alliance's reputation as a key leader and connector in the global DRI ecosystem.
- Enable the cross-integration of services and infrastructure provided by national and international partners to facilitate research collaboration and excellence for the Canadian research community.

4

Maximize public investments to accelerate innovation

The Alliance is part of the Government of Canada's national DRI strategy. As such, it will steward the Government's contribution based on established target service levels, prioritizing full funding of pan-Canadian services and cost-sharing with provinces and territories for regional provision.

The Alliance will

Revisit the Resource Allocation Competitions (RAC):

- Improve the annual RAC process, notably to ensure it is consistent and coordinated with Tri-Council funding to better respond to researcher needs (e.g., multi-year projects requiring long-term planning, the need for concentrated access to resources for short periods).



Simplify funding allocation:

- Serve to unify and streamline funding allocation in the long term for DRI operations, allocating resources holistically across ARC, RDM and RS.
- Consider the addition of new funding streams to supplement funding from the Government of Canada to ensure stable and sustainable revenue in the long term. The successful diversification of supplemental revenue streams will depend on the Alliance's ability to effectively leverage existing partnerships while developing new ones. In this respect, the Alliance will create more equitable contribution agreements with specific DRI stakeholders, such as provincial governments and other public institutions, by reforming the criteria by which partners contribute to the Alliance's revenue model.

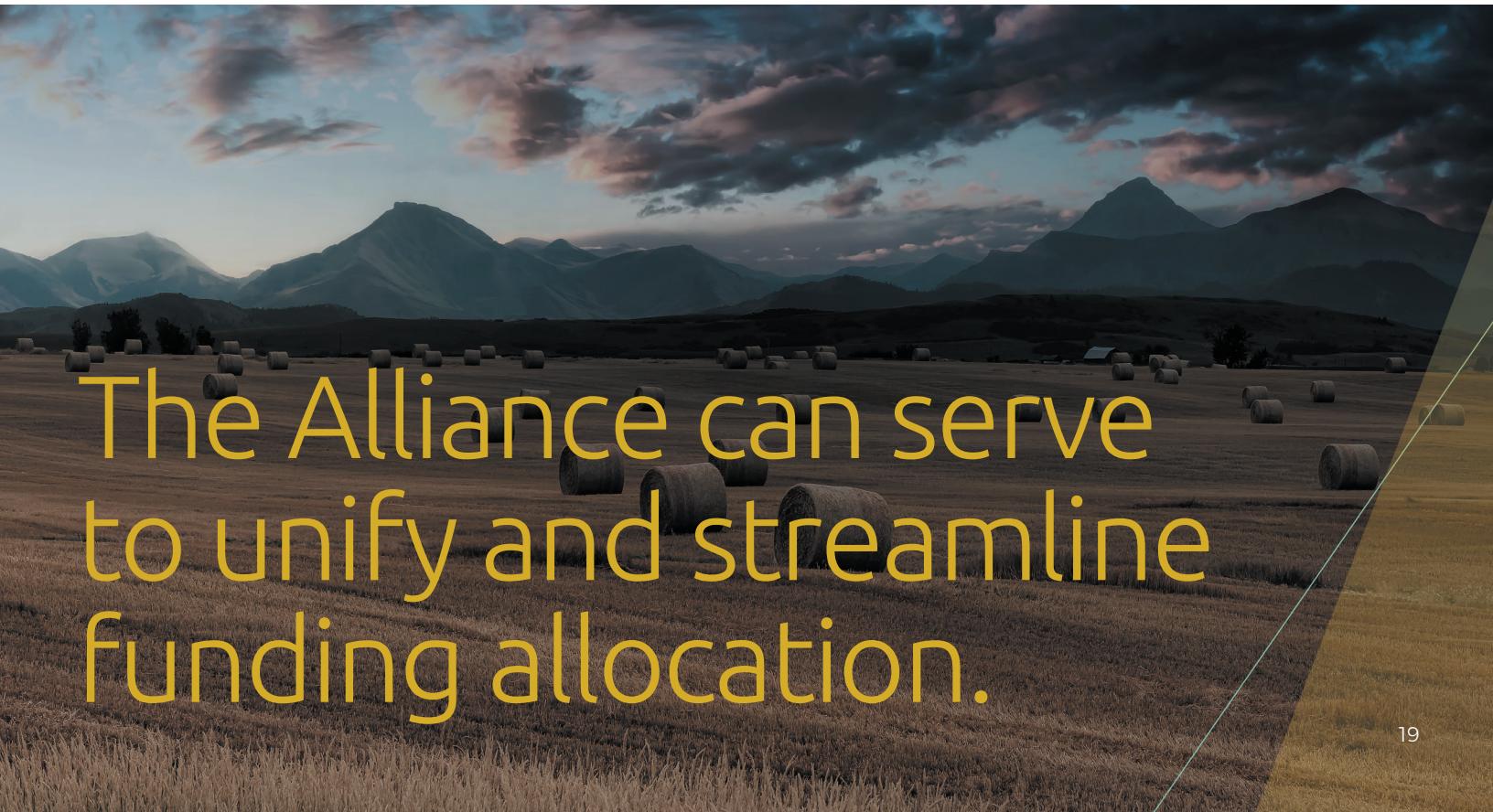
Our commitments to the community

Clear cost sharing:

- Develop formal funding processes and agreements between federal and provincial funders for national, regional and local services.

External revenue:

- Develop a revenue generation plan to ensure sustainable long-term funding.
- Leverage partners to expand service customization and establish mixed revenue sources that respond to the Alliance's role in the Canadian DRI landscape.



The Alliance can serve to unify and streamline funding allocation.

Message from the CEO



The Government of Canada showed innovation and leadership by coordinating Canada's national computing power and connectivity with the best possible software and storage services available for data through a DRI strategy.

As a key part of this strategy, the Digital Research Alliance of Canada is building and sustaining a strong and vibrant DRI ecosystem in Canada. As the global innovation race speeds up, national world-class DRI will be necessary to stay competitive on the world stage. Canada is solidly positioned as a global innovator and our research future is both bright and vital.

I believe in collaborative relationships. Together, as an ecosystem of partners, institutions, funders and researchers, the Digital Research Alliance of Canada is enabling Canada's researchers to conduct leading-edge research and accelerate discovery.

Nizar Ladak

Chief Executive Officer
Digital Research Alliance of Canada

Canada is solidly positioned as a global innovator.



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