World Data System
Action Plan
2022-2024
Update

February 2023 to February 2024 accomplishments

The **mission** of the World Data System is to enhance the capabilities, impact, and sustainability of our member data repositories and data services by:

Creating trusted communities of scientific data repositories

Strengthening the scientific enterprise throughout the entire lifecycle of data and all related components creating first-class data that feeds first-class research output

Advocating for accessible data and transparent and reproducible science

Action Plan Update 2024

The World Data System (WDS) launched the 2022-2024 Action Plan to focus the WDS Scientific Committee (SC), International Program Office (IPO), and International Technology Office (ITO) on achievable and measurable goals that benefit WDS data repository members and other stakeholders.

As shared when we launched this Action Plan, as an affiliated body of the International Science Council (ISC), WDS wants to continue its vision of science as a global public good. By aligning WDS objectives with the ISC's priority themes (https://council.science/ wp-content/uploads/2020/06/202110_ISC-Action-Plan_ONLINE.pdf), such as digital transformations in science and education (theme 2.1) and leveraging digital technologies for sustainability (theme 2.23), WDS is contributing significantly to global scientific development.

This update details those contributions and includes outcomes from the Action Plan's launch in February 2023 through February 2024. Each of the four goals is listed and shows what we have accomplished in the first year and what remains for the second year of this plan.

We look forward to engaging you today and in the future with our path forward in enhancing the capabilities, impact, and sustainability of our member scientific data repositories and data services worldwide.

Staff & Scientific Committee

Scientific Committee

David Castle, Chair (Canada) Science, Technology, and Innovation Policy

Hugh Shanahan, Vice Chair (UK) High Energy Physics

Claudia Maria Bauzer Medeiros, Vice Chair (Brazil) Computer Science

Christine Choirat (Switzerland) Health Data Science

Dale Peters (South Africa) Data-intensive Science

Mamoru Ishii (Japan) Space Weather

Margaret Levenstein (USA) Political and Social Research

Libby Liggins* (New Zealand) Quantitative Biology

Yasuhiro Murayama (Japan) Informatics and Communication Policy

Marc Nyssen (Belgium) Electronics and Medical Informatics

Ioana Popescu (Netherlands) Hydroinformatics

Juanle Wang (China) GIS

* Maui Hudson served on behalf of Libby Liggins May 2023 to June 2024

WDS-IPO Staff

Meredith P. Goins, MSIS, Executive Director

Daniela Santos Oliveira, PhD, Program Manager

Cameron Breland, Communications Specialist

Katherine Read, Administrative Assistant

WDS-ITO Staff

Reyna Jenkyns, Associate Director
Chantelle Verhey, Research Associate
CJ Woodford, PhD, Research Associate

Governance

The SC is the governing body of the World Data System. It is made up of leading scientists and experts who are actively involved with data. The Committee includes directors of WDS member organizations and covers a broad range of disciplines and geographical areas.

Goals & Outcomes

1 Provide services and support to existing and new members

a. Renew existing members and continue to serve their interests and needs

- ✓ 42 MOUs renewed

b. Enhance communication with members to encourage greater participation and better understand their needs

- ✓ 12 Open Office Hours across time zones
- ✓ 30 WDS newsletters
- ✓ 20 special email bulletins
- ✓ 12 Early Career Network newsletters
- ✓ Monthly Member Highlights
  - Highlighted up to three members per month on the WDS website

- ✓ Outreach
  - Collected and distributed presentations, posters, exhibitors, and town halls by WDS members
- ✓ Social Media
  - 𝕏 43,947 impressions, 1,453 posts, 1,983 followers
  - Reach – 529, 127 posts, 18 likes, 28 followers
  - 164 posts, Reach – 451, 55 followers
  - in 767 views of 154 posts, 517 unique visitors, 10,833 organic impressions
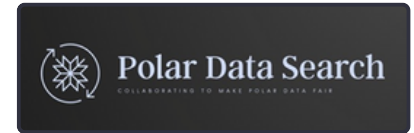 - ⓥ 40 videos, 121 views, 4,418 impressions

c. Increase the number of WDS members generally, with focus on:

- ✓ New members
  - Australian Ocean Data Network
  - University of Tennessee - Oak Ridge Innovation Institute
  - Biological and Chemical Oceanography Data Management Office
  - GO FAIR US

- ✓ Addressing membership gaps in the global south
  - Increase representation on the Scientific Committee

- ✓ Addressing membership gaps in under-represented, data-intensive fields
  - Membership gap analysis: 400+ potential members identified

1 Provide services and support to existing and new members

d. Continue to develop federated infrastructure and coordinate activities amongst data managers

✓ Focus on federated search and data enhancement practices harmonizing Arctic and Antarctic polar research

✓ Southern Ocean Observing System (SOOS) Symposium, Hobart, Australia, 2023-08: Attended by Chantelle Verhey (https://wds-ito.org/ito-at-2023-soos-symposium/)

✓ 3 peer reviewed articles:

- Downs, R.R., Díaz, A.U., Xu, Q., Wang, J., Chambodut, A., Liu, C., Flower, S. and Payne, K., 2023. Harvestable Metadata Services Development: Analysis of Use Cases from the World Data System. Data Science Journal, 22(1), p.20. https://doi.org/10.5334/dsj-2023-020

- Janssen, A.R., Bricher, P., Payne, K., Badhe, R., Biebow, N., de Bruin, T., Duerr, R., Elshout, P., Gaylord, A., Godøy, Ø., Gorringe, P., Guihen, D., Kool, J., Larsen, J.R., Nolan, J., Novellino, A., Manley, W., Marouchos, A., McCammon, M., Murray, M., Parrott, J., Pearlman, J., Peat, H., Pulsifer, P., Symons, L., Tacoma, M., Theocharides, S., Tronstad, S., Verhey, C. and Van de Putte, A. 2023. Polar Data Forum IV – An Ocean of Opportunities. Data Science Journal, 22: 18, pp. 1–13. https://doi.org/10.5334/dsj-2023-018

- Verhey, C., Minch, M., & Payne, K. (2023). Polar federated search: New infrastructure to support the polar community. Polar Science 36 (2023) 100947, https://doi.org/10.1016/j.polar.2023.100947

To do in 2024

☐ Membership recruitment campaign focusing on the global south and under-represented, data-intensive fields

☐ Outreach efforts focusing on the global south and under-represented, data-intensive fields

2 Develop value narratives for WDS members

a. WDS is clearly positioned as the voice for data repositories globally, and clearly expresses the value proposition for each WDS member repository

✓ Represented WDS members and data repositories at the US Department of State Open Science Dialogue (5 December 2023)

✓ Analysis of member strategic plans between IPO and ITO including creating data collection tool, collection and analysis of data, article currently under peer review for publication in IASSIST

b. Partnering with each repository to develop value narratives for the purpose of communications, funding, and sustainability

✓ WDS Repository Sustainability Summit held 20-21 July, 2023, at the University of Tennessee aimed at new and developing repositories

c. Awarding a data prize that rewards innovative use, analysis, and visualization of data found within WDS member repositories which demonstrates tangible value

✓ Awarded to Ethan Welty, World Glacier Monitoring Service

Pictured: Ethan Welty (left) accepting the WDS Data Stewardship Award from David Castle (right), Chair of the Scientific Committee

To do in 2024

☐ Delphi study to identify the top 10 value-added benefits that data repositories provide to the international research ecosystem. Collect narratives from data repositories to further illustrate these values

☐ Demonstrate values via data usage from the PID graph, trialing tools emerged within efforts like the Open Global Data Citation Corpus

☐ Relaunching prize in 2024 with feedback from both IPO, ITO, and members

3 Provide global leadership and agenda setting

a. WDS members, ITO, IPO, and SC serving in leadership positions in relevant organizations that are setting priorities, developing standards, and creating roadmaps

- ✓ Five staff members on a total of 31 committees *

b. WDS and CODATA can collaborate on shared objectives and initiatives, and as affiliated bodies of the ISC, can jointly support the ISC's mission and action plans

- ✓ Served as co-organizer and panelist at towards a FAIRer World: Implementing the UNESCO Recommendation on Open Science to address global challenges held at UNESCO, Paris and virtual, 29 March 2023
- ✓ Spoke to CODATA Executive Committee meeting 30 March 2023
- ✓ Reyna Jenkyns and Meredith Goins spoke at CODATA/WDS Plenary during International Data Week 2023
- ✓ Cosponsored SciDataCon with CODATA. Held in conjunction with International Data Week (2022 and 2023)

c. Enhancing workforce capacity and skills development through education and training opportunities that meet the scientific and technical needs of repositories and more broadly in response to research communities

- ✓ 8 webinars with 196 live attendees **

* To see details of committee membership, see pages 11-12
** To see details of all webinars, see page 13

3 Provide global leadership and agenda setting

d. Supporting Early Career Researchers (ECR) through the WDS Data Stewardship Award and the ECR Network

✓ Awarded WDS Data Stewardship Award to Ethan Welty

✓ Added a new ECR Co-chair, Claire Rye

✓ Launched ECR Network membership portal (GlueUp)

- Integrated blog room, virtual community for ECRs to share posts, files, and updates, with 116 members
- Launched and published 12 ECR network newsletters reaching 96 recipients
- Launched WDS ECR Network presence on LinkedIn

e. Promoting open science and encouraging adherence to the WDS Data Sharing principles as seen in the WDS Bylaws to current and potential users, the media, and the public

✓ Media mentions:

- Meredith Goins and Karen Payne spoke with Tatiana Der Avedissian, World Ocean Initiative led by The Economist on 8 July 2023 to discuss the economic value of ocean data
- Meredith Goins spoke with Austrian news channel ORF TV on 25 October 2023 to discuss importance of International Data Week
- Four scientific articles of interest
  - WDS Member Atmospheric Radiation Measurement (ARM) had an article written about them which stated that their data management earned them a WDS membership (https://www.newswise.com/doescience/arm-plans-upgrades-as-it-marks-30-years-of-collecting-atmospheric-data/?article_id=772426)
  - Scientific Committee Chair David Castle co-authored an article on standardization across Canadian provinces for health data (https://paherald.sk.ca/new-health-funding-requires-commitment-to-improved-health-data-but-is-it-enough/)
  - Un-affiliated author expressed the need for open data sharing infrastructure, cited WDS as a success (https://eos.org/opinions/we-need-a-better-way-to-share-earth-observations)

3 Provide global leadership and agenda setting

- ○ Scientific Committee member Hugh Shanahan co-authored article on open science geographic restrictions (https://www.researchprofessionalnews.com/rr-news-europe-views-of-europe-2023-9-open-science-is-more-open-in-some-places-than-others/)

✓ 33 presentations with 1,810 in-person and online views and 489 downloads ***

f. Offering member training and guidance on becoming a trustworthy repository and adopting new technologies

✓ Post training opportunities in our newsletter and on GlueUp

✓ Regular meetings with CoreTrustSeal leadership through every other month meetings and occasional webinars

✓ Co-chair RDA/WDS Certification of Digital Repositories Interest Group

✓ WDS Repository Sustainability Summit, 20-21 July 2023, University of Tennessee

To do in 2024

☐ Relaunching Data Stewardship Award prize in 2024 with feedback from both IPO, ITO, and members

☐ Coordinate quality assessments with WDS member repositories by evaluating member records in re3data, conducting a workshop to support the completion of attributes, and training on new re3data schema updates then analyze results, produce visualization, and present adoption at an RDA plenary

4 Enhance access, quality, and accessibility of data worldwide

a. Developing a work plan to identify key issues around trust in data

- ✓ Discussed cyber security challenges and opportunities as the focus during the Members Forum feedback session

- ✓ Working with ORCID to highlight PIDS as a security measure

- ✓ Developed a survey regarding Indigenous data governance practices at data repositories

b. Creating a framework to address and respond to issues of repository and data security

c. Developing a repository-centric approach to trustworthiness for inclusion in each member's value proposition

- ✓ Co-chair RDA/WDS TRUST Principles Outreach and Adoption Working Group

d. Developing a roadmap for a global research commons, in conjunction with partners within and outside of WDS

- ✓ Three relevant presentations

  - CJ Woodford presented on the RDA GORC project at the International Symposium on Open Science Clouds, Beijing, China, September 2023. https://wds-ito.org/ito-at-isosc2023/

  - Dominik Bednarczyk presented at the International Seminar on Biodata and AI, September 2023. https://wds-ito.org/ito-at-isba2023/

  - Dominik Bednarczyk presented virtually at BioDigiCon on Adopting Equity in Research and Data, September 2023. https://db.cngb.org/isba/

4 Enhance access, quality, and accessibility of data worldwide

✓ Two relevant publications

- Woodford, C. J., Treloar, A., Leggott, M., Payne, K., Jones, S., Lopez Albacete, J., Madalli, D., Genova, F., Dharmawardena, K., Chibhira, N., Åkerström, W., Macneil, R., Nurnberger, A., Pfeiffenberger, H., Tanifuji, M., Zhang, Q., Jones, N., Sesink, L., & Wood-Charlson, E. (2023). The Global Open Research Commons International Model, Version 1 (Version 1). Research Data Alliance. https://doi.org/10.15497/RDA00099

- Payne, K., Corrie, B., Crawley, F., Harrower, N., Macneil, R., Sansone, S.-A., Treloar, A., Woodford, C. J., & Nyberg Åkerström, W. (2023). The Global Open Research Commons International Model Report, Version 1 (Version 1). Research Data Alliance. https://doi.org/10.15497/RDA00097

To do in 2024

☐ Assist members in assessing their AI readiness using ESIP Data Readiness cluster Checklist through WDS workshop and contribution of findings to ESIP cluster

Committee Membership

Organization	Committee Name	Role(s)
American Library Association	Core Awards & Scholarship Coordination Committee	Vice Chair[1]
Arctic Data Committee	Polar Semantics and Vocabularies	Administrator[3]
Arctic Data Committee/Southern Ocean Observing System/International Arctic Science Committee	Polar to Global Data Interoperability Hackathon	Co-chair[3]
Arctic Data Committee/Sustaining Arctic Observing Networks	Roadmap for Arctic Observing and Data Systems	Member[3]
Canadian Consortium for Arctic Data Interoperability		Project lead[3]
Committee on Data of the ISC (CODATA)	US National Committee	Member[1]
	Open Science Commons Executives Roundtable	Member[2]
	Canada CODATA Committee	Member[2]
	International Symposium on Open Science Clouds Working Group	Member[4]
CoreTrustSeal	Board	Member[2]
DataCite Canada	Consortium Governing Committee	Member[2]
Digital Research Alliance of Canada	Data Repositories Expert Group	Member[2]
	Discovery Metadata Expert Group	Member[3]
Earth Science Information Partners (ESIP)	Science-on-schema.org Cluster	Member[3]
	Semantic harmonization of crospher (ENVO & SWEET crosswalks)	Member[3]

1 Meredith Goins   2 Reyna Jenkyns   3 Chantelle Verhey   4 CJ Woodford   5 Daniela Santos Oliveira

Committee Membership

Organization	Committee Name	Role(s)
International Arctic Science Committee	Arctic Data Committee	Co-chair[3]
	Polar Assets Observing Working Group	Member[3]
Oak Ridge National Laboratory	Library Advisory Committee	Chair[1]
Ocean Tracking Network	International Data Management Committee	Member[2]
re3data	Working Group	Member[1]
Research Data Alliance (RDA)	RDA/WDS Certification of Digital Repositories Interest Group	Co-chair[1]
	RDA/WDS TRUST Principles and Adoption Working Group	Co-chair[1] Member[4]
	Global Open Research Commons International Model Working Group	Co-chair[4]
	US Steering Committee	Member[1]
	RDA Data Repository Attributes Working Group	Member[1, 4]
	Organizational Assembly	Member[1, 5]
	Research Metadata Schemas	Member[3]
	Global Open Research Commons Interest Group	Member[4]
Scientific Committee on Antarctic Research	Standing Committee Antarctic Data Management	Member[3]
Southern Ocean Observing System	Data Management Scientific Committee	Member[3]
UNESCO	Data Policies in Times of Crisis Working Group	Member[1, 5]

1 Meredith Goins   2 Reyna Jenkyns   3 Chantelle Verhey   4 CJ Woodford   5 Daniela Santos Oliveira

Webinars

- **28 February 2023 Webinar**: Data Experts on Career Development: Open Session with Claudia Medeiros – 48 attendees
- **14 March 2023 Webinar**: Research Analysis: WDS Members and Canadian CTS Cohort Needs Assessment – 37 attendees
- **20 April 2023 Webinar**: CoreTrustSeal and World Data System: Partners Advocating for Data Repositories–Getting to Know CTS and WDS – 9 attendees
- **17 May 2023 Webinar**: Data Experts on Career Development: Open Session with David Castle – 36 attendees
- **23 August 2023 Webinar**: Roaring into the Future of Research, A Conversation with the Research Organization Registry's Amanda French – 12 attendees
- **5 September 2023 Webinar**: Data Experts on Career Development: Perspectives on Data Management Across Time, Disciplines, and Research Environments with Bruce Wilson: AM session – 24 attendees, PM session – 9 attendees
- **14 November 2023 Webinar**: Applying the CARE Principles to Ecology and Biodiversity Research with Maui Hudson – 17 attendees
- **26 February 2024 Webinar**: Rising Stars: A Webinar on Early Career Researchers' Conference Experiences in Data - 4 attendees

Presentations

- Goins, M. (2023, December 14) Moving Us Towards TRUST: The Next Steps in Outreach and Adoption [Conference presentation]. American Geophysical Union Fall Meeting, San Francisco, CA. https://doi.org/10.5281/zenodo.10459920
- Jenkyns, R., Goins, M., Verhey, C., Buttigieg, P.L., Witt, M. (2023, December 13) WDS Town Hall for Scientific Data Repositories [Panel]. American Geophysical Union Fall Meeting, San Francisco, CA. https://doi.org/10.5281/zenodo.10463205
- Goins, M. (2023, December 13) Advancing Data Stewardship: Join the WDS and Contribute to Scientific Data Excellence. International Symposium on Data Science 2023. Science Council of Japan, Tokyo, Japan, hybrid. https://doi.org/10.5281/zenodo.10837998
- Castle, D. (2023, December 15) The Action Plan and Priorities of the World Data System. International Symposium on Data Science 2023. Science Council of Japan, Tokyo, Japan, hybrid.
- Goins, M., Lin, D., Lindlar, M. (2023, October 26) RDA/WDS Certification of Digital Repositories Interest Group: TRUST Principles and Repository Certification Landscape. International Data Week, Salzburg, Austria.
- Goins, M., Jenkyns, R., Hodson, S. (2023, October 25) CODATA/WDS Organizational Plenary Session. International Data Week, Salzburg, Austria.
- Goins, M. (2023, October 24) Inclusivity in Open Science. International Data Week, Salzburg, Austria. Plenary organizer.

- Crawley, F.P., Murray, V., Ekmekci, E., Basbug, B., Goins, M., Peršić, A. (2023, October 25) Guidance on Data Policy and Open Science in Times of Crisis, part of the UNESCO Open Science Toolkit panelist. International Data Week, Salzburg, Austria.
- Pfeiffenberger, H., Crawley, F.P., Basbug, B., Goins, M., Cambon-Thomsen, A., Ekmekci, E. (2023, October 23) Reliability as an issue of (scientific) data policy. Panelist. International Data Week, Salzburg, Austria.
- Goins, M. (2023, October 22). World Data System Members Forum 2023. Zenodo. https://doi.org/10.5281/zenodo.10406070
- Hudson, M. (2023, November 15). Applying the CARE Principles to Ecology and Biodiversity Research. Zenodo. https://doi.org/10.5281/zenodo.10137727
- Goins, M. (2023, September 27). World Data System Sustainability Summit 2023: Outcomes and Lessons Learned. iPRES lightning talk, Champaign-Urbana, IL Zenodo. https://doi.org/10.5281/zenodo.8383658
- Goins, M. (2023, September 26). Why TRUST matters and how you can get involved. iPRES lightning talk, Champaign-Urbana, IL Zenodo. https://doi.org/10.5281/zenodo.8380688
- Goins, M. (2023, September 26). The World Data System, repository certification & sustainability. US-UK Science Forum on Research Access to Data 12-13 September 2023, Washington DC Zenodo. https://doi.org/10.5281/zenodo.8380651

Presentations

- Goins, M. (2023). WDS: A Trusted Community of Excellence. Poster presentation, Society of Scholarly Publishers 2023 Annual Meeting, Portland, OR Zenodo. https://doi.org/10.5281/zenodo.8309755
- French, A. (2023, August 23). Roaring Into the Future of Research. Zenodo. https://doi.org/10.5281/zenodo.8277585
- Goins, M. (2023, August 2). Lessons from the World Data System Repository Sustainability Summit. Zenodo. https://doi.org/10.5281/zenodo.8208593
- Halbert, M., Chandramouliswaran, I., Cooke, M., & Albers, C. (2023, August 2). The Funder's Point of View. Zenodo. https://doi.org/10.5281/zenodo.8208580
- Frame, M., Correa, P., Koskela, R., & Prakash, G. (2023, August 2). Peers Speaking to Peers on Finding Sustainability. Zenodo. https://doi.org/10.5281/zenodo.8208560

- Peršić, A. (2023, August 2). The Role of Repositories in the Context of the Global Transformation Towards Open Science. Zenodo. https://doi.org/10.5281/zenodo.8208523
- Goins, M. (2023, June 21). WDS Members and Canadian CoreTrustSeal Cohort Needs Assessment. Zenodo. https://doi.org/10.5281/zenodo.8071108
- Lee, C., Gonzalez, S., & Payne, K. (2023, March 16). Research Analysis: WDS Members and Canadian CTS Cohort Needs Assessment. Zenodo. https://doi.org/10.5281/zenodo.7741299
- Lee, C., Gonzalez, S., & Payne, K. (2023). World Data System and Canadian CoreTrustSeal Cohort Members Needs Assessment - Reviewer Instrument and Supplemental Information. Zenodo. https://doi.org/10.5281/zenodo.7738214

RDA P21 presenters left to right: Dawei Lin, Robert R. Downs, Meredith Goins, Micky Lindlar, Hervé L'Hours, Devan Ray Donaldson

In-person attendees to International Symposium on Data Science 2023 (DSWS-2023) held 11-15 December 2023, Science Council of Japan

WDS International Program Office c/o WDS-IPO @ UT-ORII

1 Bethel Valley Road Building 5100, Room 272
MS 6173
Oak Ridge, TN 37831

Tel. +1-865-368-7980

wds-ipo@utk.edu worlddatasystem.org
https://linktr.ee/wds_ipo