

NMDC Newsletter

The Microbiome Standard

-Fall 2024-

Update from the Leadership Team

Last week, our team gathered in Richland, Washington for our annual retreat and spent time reflecting on our accomplishments this past year and planning for the year ahead. We successfully completed our [overhaul](#) of the NMDC schema, paving the way for more kinds of workflows, processes, and experimental parameters. This past quarter, we completed the NMDC's [FY24](#) reporting for the BSSD Performance Metrics. We are also excited to share our latest publication focused on the architecture and functionality of [NMDC EDGE](#) and our new [Science Stories](#) blog. We invite you to read on to learn more about our activities and for opportunities to engage with the NMDC team.



Announcements

There is still time to provide feedback and be included as a co-author on the [STREAMS guidelines](#) for data management and publication of environmental, synthetic, and non-human host-associated microbiome research! Review version 2 of the guidelines [here](#) and provide your feedback in the [Google form](#) or as a comment in the spreadsheet. Check out the [preprint of the STREAMS workshop report](#) and our latest [blog post](#) for more information. Please provide your feedback on version 2 by **November 20th**.

Check out the [Science Stories](#) in our blog to hear about researchers' experiences with the NMDC!

A #jobs-and-opportunities Slack channel is now available in the [NMDC Community Slack](#). Check it out and share any opportunities!

We recently created a new [example notebook](#) which uses Van Krevelen plots to explore Natural Organic Matter (NOM) data. Take a look at our updated example [notebooks](#) in R and Python for examples on how to use our API to ask and answer questions with the NMDC's data.

Publications

We are excited to share our latest publication: [Standardized and accessible multi-omics bioinformatics workflows through the NMDC EDGE resource](#).

New staff members join the NMDC

We welcome Samantha Miller, Cristina Stone Pedraza, and Amit Rupani to the [NMDC team](#)!



Releases

Software updates

- The NMDC had a busy few months preparing downstream dependencies for major changes in our schema. We are happy to announce that in October we

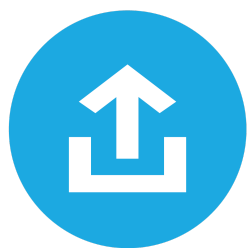
released new major versions of our schema, API, and nmhc-server, which backs our Submission and Data Portals. Our schema is now on [version 11](#). The new slots and classes in our LinkML schema provide the information about how a sample is processed, extracted, or prepped for an instrument, how that instrument is run and the data is generated.

- The NMDC's runtime API is now on [version 2](#). We are also happy to report our first submission to NCBI using this code for the [EcoFab 2.0 Ring Trial](#).
- The NMDC's server code is now on [version 1](#) and includes backend and frontend updates for upstream schema changes, indexing for performance improvements for faceted search, backend changes to support expanded functional search, and the ability to sort Submission Portal entries.

NMDC Field Notes mobile app



- Beta testing is open! Visit the [NMDC Field Notes](#) webpage to learn more about the app and how to download the beta version.
- We are working on incorporating your beta testing feedback! We are currently looking into sample duplication options and implementing bug fixes for missing ENVO ontologies. We are also fixing an error that trapped users in the app tour.



Updates to the NMDC Submission Portal

- Submissions are now sortable!
- The funding source for submissions has been updated to have more structure and better reflect the schema.
- Multiple sample types are now allowed in one submission.

Workflow updates in NMDC EDGE



- As mentioned above, we published an [article](#) in the *Computational and Structural Biotechnology Journal* announcing the NMDC EDGE resource!
- The NMDC metatranscriptome workflow is updated and running on NMDC EDGE.
- The metagenome pipeline and associated workflows have been updated to version 1.0.

New data in the NMDC Data Portal



- This quarter we added 140 samples for the [EcoFAB 2.0 Root Microbiome Ring Trial](#), a study which utilized synthetic bacterial communities to study root microbiome recruitment and exudate composition of the model grass *Brachypodium distachyon*. After completing our efforts to update all records to NMDC-style identifiers in the previous quarter, we also reanalyzed 52 metaproteomics datasets and 502 datasets through our metagenome annotation workflow. We also processed 172 datasets through our read-based taxonomy workflow.

For usability feedback, errors, or questions on all NMDC products and software, please contact us through support@microbiomedata.org.

Events

Read about our summer conference experiences in our latest [blog post](#).

Plant Health 2024 in Memphis, Tennessee

- NMDC team member Leah Johnson hosted the [Advancing Microbiome, Systems Biology Research, and Education Through User-Friendly Online Bioinformatic Platforms](#) workshop with KBase on Saturday, July 27th.



Genomic Standards Consortium [Annual Meeting](#) in Tucson, Arizona

- NMDC team members Montana Smith, Lee Ann McCue, and Emiley Eloef-Fadrosh presented a [workshop](#) “MIXS implementation in the NMDC and improving adoption” on Wednesday, August 7th.

JGI User Meeting in Walnut Creek, CA

- NMDC Ambassadors Daniela Betacurt-Anzola, Zach Burcham, and Becca Maher hosted a workshop exploring microbiome data stewardship, FAIR data, and microbiome data standards.



[ISME19](#) in Cape Town, South Africa

- NMDC Ambassadors Iyanu Oduwole, Emilie Skoog, and Kent Pham presented at the 'From Reads to Function' [workshop](#)

The NMDC Ambassadors have had a busy summer hosting amazing events! Keep an eye out for upcoming Ambassador events on our [website](#) and on social media

Upcoming Events

- October 31-November 2: [NDiSTEM 2024](#) in Phoenix, AZ
 - NMDC team members Francie Rodriguez and Leah Johnson will be attending. Leah will be giving a talk on Friday, November 1st. Come say hello if you're attending!
- November 3-6: CMiC in San Diego, CA
 - NMDC Ambassadors Michael Sieler and Winston Anthony will be leading a workshop titled [Mastering Metadata: Utilizing NMDC Resources for Microbiome Research Reproducibility](#) on November 3rd from 9:00-12:00pm PST.
- November 10-13: [ASA, CSSA, SSSA Annual Meeting: AI Innovations for a Changing Climate](#) in San Antonio, TX
 - NMDC Ambassador Patrick Sorensen will be hosting a [workshop](#)
- November 15-17: ASMCUE in Pittsburgh, PA
 - NMDC team member Julia Kelliher will be [presenting the Environmental Microbiome Certificate Program](#) that the NMDC is developing for undergraduate researchers
- December 9-13: [AGU](#) in Washington, DC
 - The NMDC will be hosting a panel discussion focused on how data standards can unlock new research opportunities

Opportunities

The International Microbiome and Multi-Omics Standards Alliance ([IMMSA](#)) will host a series of discussions on data reuse throughout 2024. To learn more and join the conversation, sign up [here](#)!

Are you passionate about FAIR microbiome data and are interested in being more engaged with the NMDC? [Apply](#) to join our [Champions program](#)!

Register for the 2024 Microbes and Social Equity [Speaker Series](#) that includes presentations the last Friday of every month!

Would you like to help us create intuitive, user-friendly, and community-driven products? Explore our current call and sign up for user research on our [website](#).

Connect with us on [Instagram](#), [X](#), and [LinkedIn](#)!



[Check out our 2023 Annual Report!](#)

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