

## NMDC Newsletter

# The Microbiome Standard

-Summer 2024-

## Update from the Leadership Team

The summer has been flying by with lots of exciting activities to share and many opportunities to connect with our team at conferences, along with a new effort to support data management and reporting guidelines ([STREAMS](#)). We recently completed our harmonized ORCID authentication across all NMDC products and initiated a major transition across all NMDC systems to an [updated schema](#). With our latest BSSD Performance Metrics [report](#) and a new [webpage](#), we are happy to share details of our continued efforts to support data integration across BER facilities and resources. We also recently published, [A Practical Approach to Using the Genomic Standards Consortium MxS Reporting Standard for Comparative Genomics and Metagenomics](#), in collaboration with the Genomic Standards Consortium (GSC), with a great [blog post](#) highlighting the benefits of standards. Please read on to learn more about our team's activities and for opportunities to engage.

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## Announcements

- We discovered an issue with a subset of NEON raw metagenome reads where the data was not sorted correctly for interleaving. Impacted records have been deleted, NEON has provided sorted records, and the NMDC is working on ingesting and processing those records. For more details see NEON's [Data Announcement](#).
- We harmonized ORCID authentication across all of the NMDC products to streamline the user login process!

- The 2024 NMDC Ambassador training slides are now available to the community [here](#). These slides cover microbiome data stewardship, data management, metadata standards, and an introduction to the NMDC products.
- Our Quarter 3 DOE Biological Systems Science Division (BSSD) Performance Metrics report can be found [here](#).
- Check out our new DOE BER data integration [webpage](#)!

## New staff members join the NMDC

We welcome Natalie Winans and Samantha Obermiller to the [NMDC team](#)!



## Publications

We recently published, [A Practical Approach to Using the Genomic Standards Consortium MlxS Reporting Standard for Comparative Genomics and Metagenomics](#), in collaboration with the Genomic Standards Consortium (GSC). Read about the new publication, our partnership with the GSC, and the benefits of metadata standardization in our latest [blog post](#).

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# Releases

## Software updates

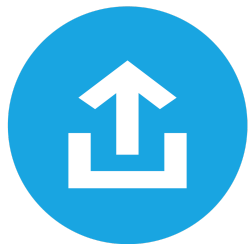
- Our team finished a round of **NMDC API user research**! Thank you to all who participated. From our interviews, 84 insights led to 18 action items to improve our documentation and accessibility of the API user interface and endpoints.
- We updated all records to **NMDC-style identifiers**. Legacy identifiers can be found in various alternative identifier fields. For more information about NMDC identifiers and alternative identifiers please see our [documentation](#).
- In our latest push to improve the resilience of the **NMDC Runtime**, we resolved 27 related tickets during the last quarter. Highlights include updates to authentication, a new endpoint which returns metadata for any identifier, and consolidation around [GitHub Container Registry](#) (GHCR) to host NMDC Runtime containers.

- The production **NMDC schema** and its Berkeley development branch have undergone several updates, including critical enhancements to increase its expressiveness and usability. Highlights for this quarter include tighter constraints on allowable values to improve data validation and reusability, expanded modeling for mass spectrometry in our development, and deprecation of code required to support legacy identifiers.



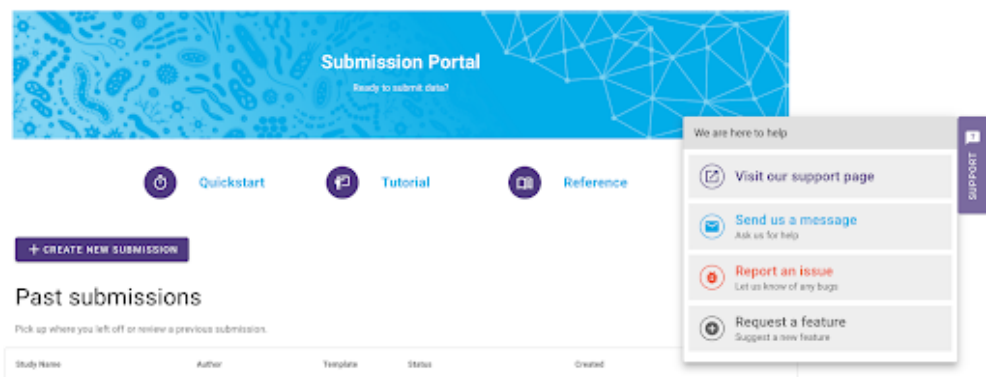
## NMDC Field Notes mobile app

- This coming quarter, we will be launching the beta version of the NMDC Field Notes metadata collection mobile app! Sign up to be a [beta-tester](#) to get a first look and provide feedback to the team.

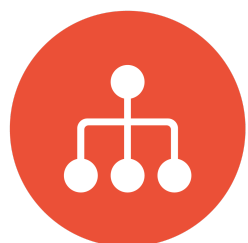


## Updates to the NMDC Submission Portal

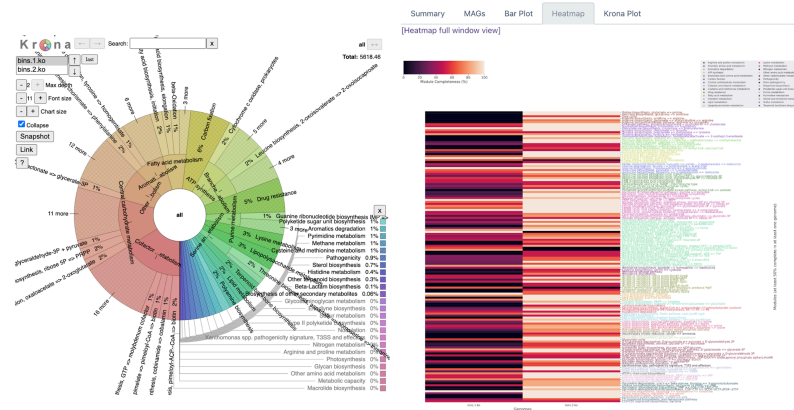
- The hydrocarbon resources - fluids swabs, hydrocarbon resources - cores, and miscellaneous natural or artificial environment templates are now available for download via our Submission Portal.
- Beginning August 1st, the Submission Portal will provide an easy way to contact the NMDC team for questions, feature requests, and bug reports! See below for a sneak peak.



## Workflow updates in NMDC EDGE



- Check out the new output visualizations for the metagenome workflow available in NMDC EDGE!



## New data in the NMDC Data Portal

- This quarter we retracted sequencing and workflow records impacted by the issues with NEON raw data.
- 444 metagenome annotations were added for four studies.

For usability feedback, errors, or questions on all NMDC products and software, please contact us through [support@microbiomedata.org](mailto:support@microbiomedata.org).

## Events

### ASM Microbe 2024:

- NMDC Program Lead Emiley Eloë-Fadrosh presented during the ASM [President's Forum](#)
- We hosted a [mini-conference](#) entitled *Microbial Data and Tools without Borders: Advancing an Open Science Ecosystem*







We hosted a workshop and presented at the [ASPB's Plant Biology 2024](#) conference in Honolulu, HI. Thank you to the conference and session organizers for the opportunities!

The NMDC Ambassadors have already hosted amazing events! Keep an eye out for upcoming Ambassador events on our [website](#) and on social media

- We co-hosted an [NSURP](#) workshop with two NMDC Ambassadors, Kacie Kajihara and Alejandro De Santiago!

NMDC team members helped to run a workshop entitled *Microbiome Data Management in Action* which brought together 50 key decision makers in microbiome science to discuss the future of microbiome data management

- This workshop has led to the development of the Standards for Technical Research in Environmental and host-Associated Microbiome Studies (STREAMS) guidelines for environmental, non-human host, and synthetic microbiomes, leveraging the successes and framework of the STORMS guidelines for human microbiome research. Reach out to the workshop team at [streamsmicrobiome@gmail.com](mailto:streamsmicrobiome@gmail.com) or visit the [website](#) to get involved in the development of STREAMS!

We presented at the *Sequencing to Function: Analysis and Application for the Future (SFA<sup>2</sup>F)* meeting

- We also co-hosted a workshop there with 2024 Ambassador Buck Hanson



## Upcoming Events

- [ESIP meeting](#) July 22-26 in Asheville, NC
- [Plant Health 2024](#) July 27-30 in Memphis, Tennessee
  - We will be hosting a workshop Saturday, July 27th from 8AM - 12PM CDT
  - Learn more about our workshop here: [Advancing Microbiome, Systems Biology Research, and Education Through User-Friendly Online Bioinformatic Platforms](#)
- Genomic Standards Consortium [Annual Meeting](#) August 5-9 in Tucson, Arizona
  - We will be presenting a [workshop](#) *MlxS implementation in the NMDC and improving adoption* on Wednesday, August 7th, 2024 from 3:30PM - 5:30PM
- [ISME19](#) August 18-23 in Cape Town, South Africa
  - Three NMDC Ambassadors will be attending and presenting at the *From Reads to Function* [workshop](#)

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## 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 interested in developing standard guidelines for environmental, non-human host, and/or synthetic microbiome data management best practices? Reach out to the STREAMS team at [streamsmicrobiome@gmail.com](mailto:streamsmicrobiome@gmail.com) or visit the [website](#) to get involved in the development of STREAMS!

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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