



KBbase

PREDICTIVE BIOLOGY

DOE Systems Biology Knowledgebase

Introduction to KBbase Australian BioCommons Webinar

Ellen Dow, PhD

Elisha Wood-Charlson, PhD



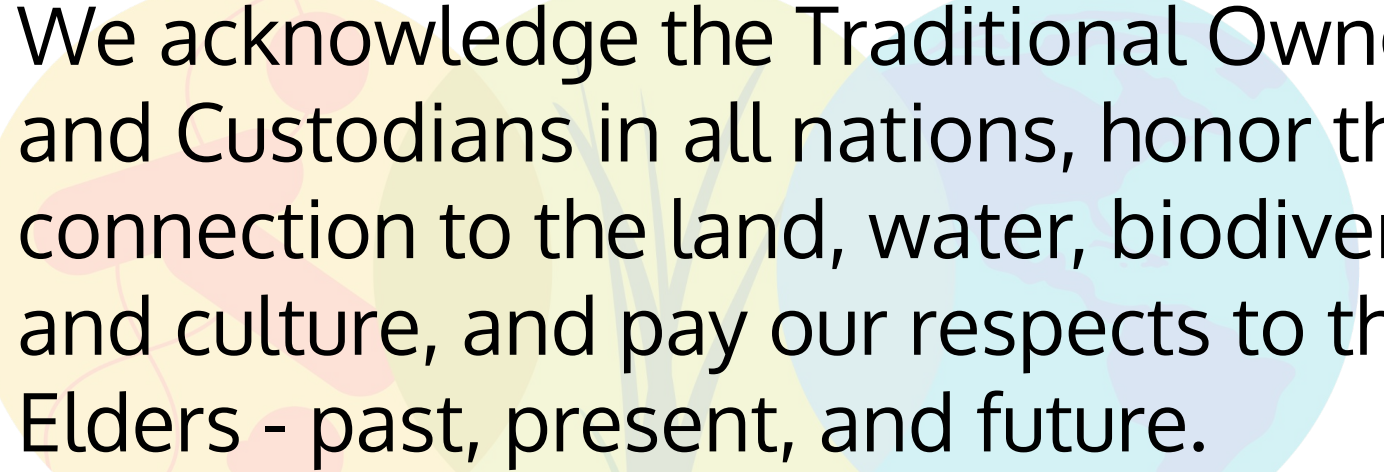
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INTEGRATION and
MODELING *for*
PREDICTIVE BIOLOGY



We acknowledge the Traditional Owners and Custodians in all nations, honor their connection to the land, water, biodiversity, and culture, and pay our respects to their Elders - past, present, and future.

The land we work on is the ancestral and unceded territory of the Ohlone People (Bay Area, CA)



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Agenda

Ellen Dow, PhD

- What is KBase?
- Tour of the platform
- Creating a workflow
- Sharing your work

Elisha Wood-Charlson, PhD

- Publishing
- FAIR data principles and data management resources
- Q&A



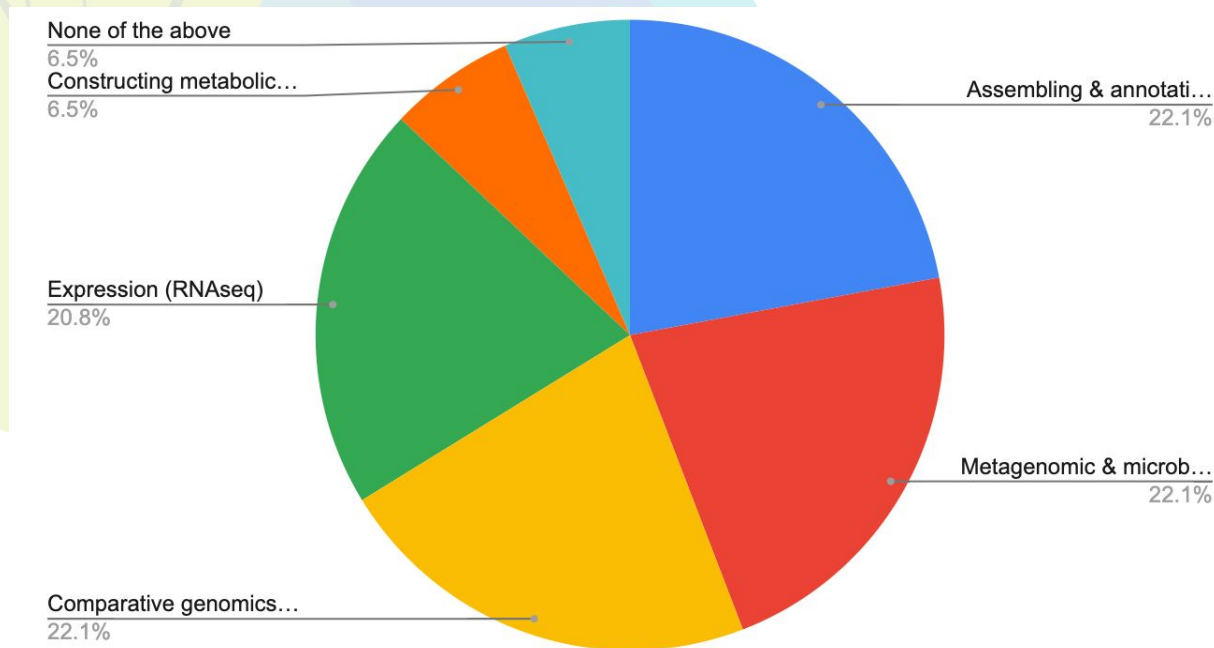
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Which data analysis workflow(s) do you use regularly?

- Assembling & annotating microbial genomes
- Metagenomic & microbiome community analysis
- Comparative genomics, including phylogenetic analysis
- Expression (RNAseq)
- Constructing metabolic models from individual and microbial communities



Others? Please put in chat!



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KBase YouTube for tutorial webinars

- Assembling & annotating microbial genomes
 - [Introduction to Genome Analysis in KBase Webinar - 30 March 2020](#)
- Metagenomic & microbiome community analysis
 - [Microbiome Fractionation by Genome Extraction Webinar - 20 May 2020](#)
 - [Using Metagenomes to Discover Novel Microbial Lineages in KBase Webinar - 17 June 2020](#)
- Comparative genomics, including phylogenetic analysis
 - [Phylogenomics in KBase Webinar - 22 April 2020](#)
- Expression (RNAseq)
 - [Functional Genomics in KBase Webinar - 8 April 2020](#)
- Constructing metabolic models from individual and microbial communities
 - [Introduction to Metabolic Modeling in KBase Webinar - 1 April 2020](#)
 - [Advanced Metabolic Modeling in KBase Webinar - 11 March 2020](#)
 - [Microbiome Metabolic Modeling in KBase Webinar - 15 April 2020](#)



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Demo at
narrative.kbase.us



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Publishing in KBase (examples)

- A genomic catalog of Earth's microbiomes ([pub link](#))
 - Static Narrative: <https://kbase.us/n/53247/64/>; <https://doi.org/10.25982/53247.64/1670777>
- American Society for Microbiology - Microbiology Resource Announcement
 - Template Narrative: <https://narrative.kbase.us/narrative/94027>
 - Larkinella Example Narrative: <https://narrative.kbase.us/narrative/54100>
 - Static Narrative: <https://kbase.us/n/54100/27/>
 - [Publication link](#)
- Guide to Markdown in KBase: <https://narrative.kbase.us/narrative/69716>

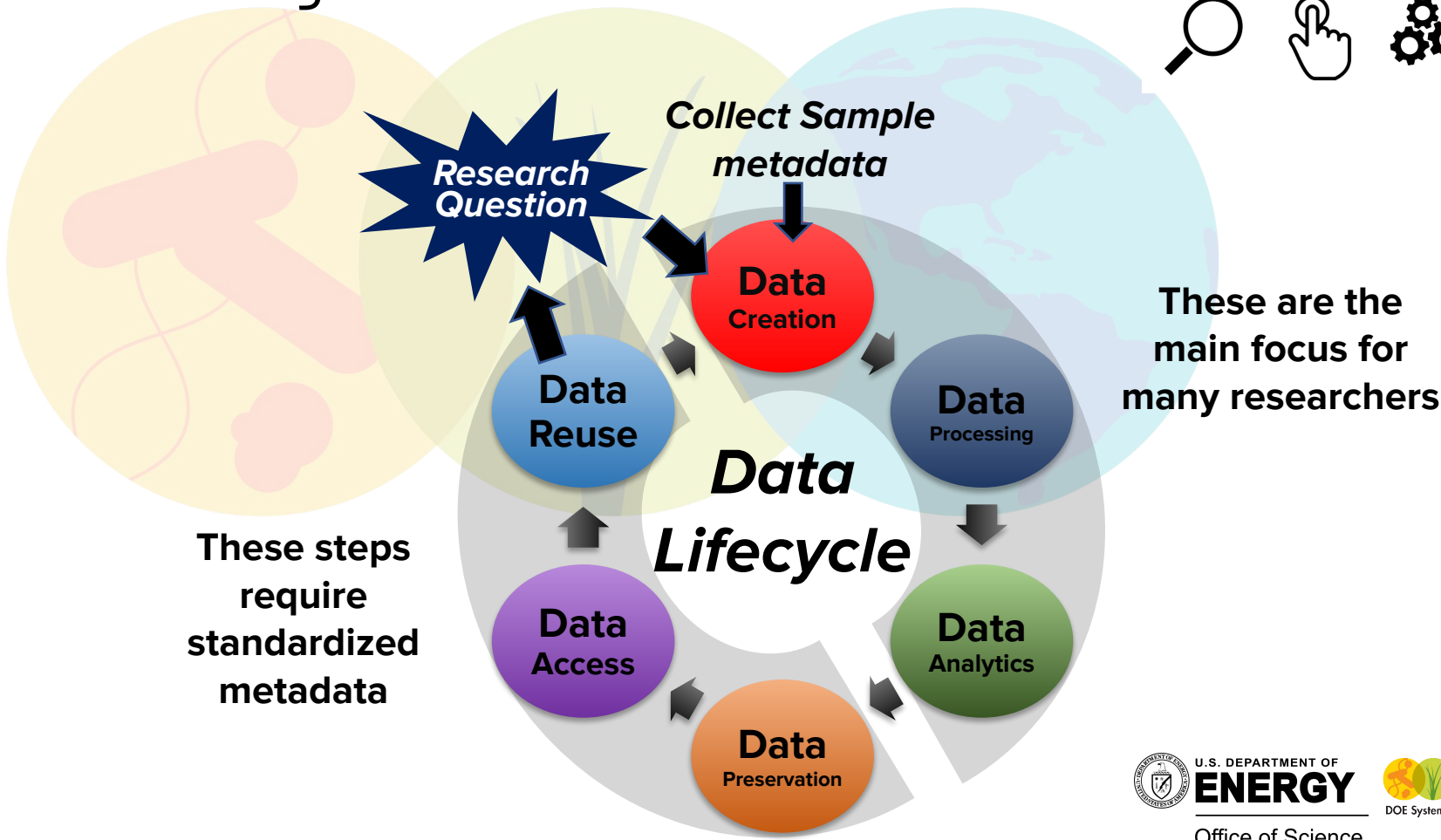
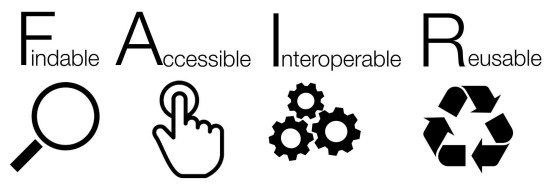


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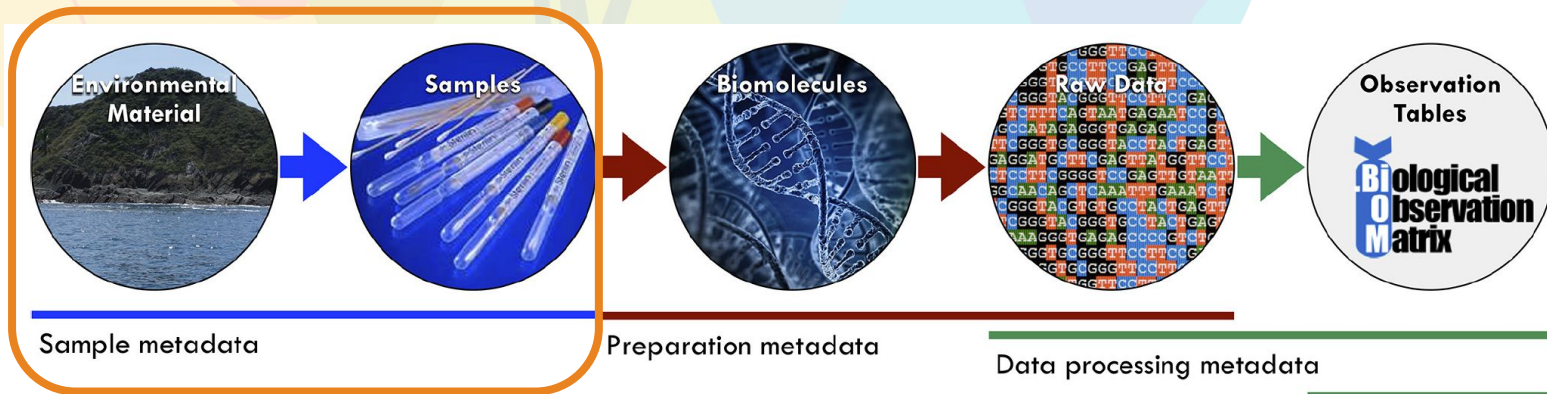
Data Management Best Practices



Genomic Standards Consortium

Minimum Information about any (x) Sequence (MIxS) - Environmental Packages

- Standards for describing microbiome samples from diverse environments (e.g., plant, soil, sediment, water, host-associated - human, plant, etc.)
- Includes a list of metadata descriptors for each parameter/field



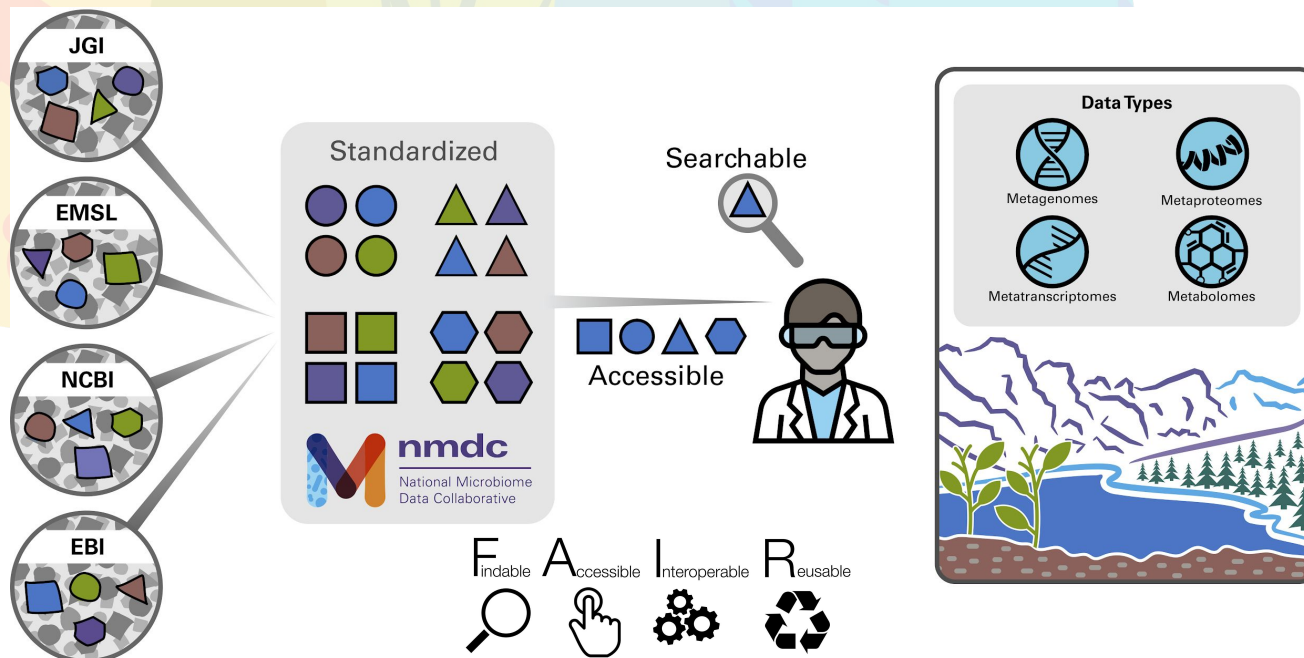
From: **Introduction to Metadata and Ontologies: Everything You Always Wanted to Know About Metadata and Ontologies (But Were Afraid to Ask)** DOI: [10.25979/1607365](https://doi.org/10.25979/1607365)

National Microbiome Data Collaborative (NMDC)

Provide a gateway to FAIR multi-omics microbiome data by leveraging best practices for data curation and processing - microbiomedata.org



National Microbiome
Data Collaborative





Thank you! Q&A?



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