



NMDC Workshop: Linking MlxS standards, Environment Ontology, & GAZ

21-24 October 2019

717 Potter Street, Berkeley, CA

LBNL Organizers: Emiley Eloie-Fadrosh, Kjersten Fagnan, Chris Mungall, Elisha Wood-Charlson

External Organizers: Bonnie Hurwitz (Univ of Arizona), Lynn Schriml (Univ of Maryland)

Workshop Objectives

The goals of the workshop are to explore ideas, create an action plan, and begin developing **interoperable standards** prototypes that lower the barrier for scientists to produce well annotated metadata records. The focus will be to 1) outline a plan with coordinated development tasks that expand and enhance the MlxS standards and the EnvO and GAZ ontologies, 2) explore approaches to improve community adoption and compliance of standards, and 3) create materials for follow-on community engagement activities aimed at collecting feedback and identifying additional community needs.

Targeted outcomes

- Recommendations and action items for ontology/standards groups and database platforms
- Training materials and rubric for conference workshops, outreach events
- Additional network contacts, key players, and stakeholders in communities not current reaching or represented at this workshop
- Key use cases for the NMDC pilot

Agenda - Part 1

Day 1: Monday, 21 Oct 2019

15:00 Welcome - Introduction to workshop goals and objectives

Presenters: Elisha Wood-Charlson, Emiley Eloë-Fadrosh

15:30 Tool Box Dialogue workshop (3 hrs) - <http://tdi.msu.edu>

All participants will engage in the **Toolbox Dialogue Initiative** (TDI) exercise (O'Rourke and Crowley, 2013), which includes a structured dialogue approach that aims to increase mutual understanding, establish an alignment of expectations, and build mechanisms for conflict resolution.

18:30 Networking dinner (provided)

Day 2: Tuesday, 22 Oct 2019

09:00 Welcome

Group exercise, safety, and logistics

Presenter: Elisha Wood-Charlson

Goals and objectives

Presenter: Emiley Eloë-Fadrosh

09:15 Standards and ontologies - current practices, implementation, and what success enables

Presenter: Lynn Schriml

09:30 Introduction to MixS, EnvO, and GAZ

Presenter: Lynn Schriml

09:45 Current stage of NMDC ontology efforts

Presenter: Chris Mungall

10:00 Lessons learned and where we need to go

NCBI	Anji Johnston
GOLD, IMG/M	TBK Reddy

10:30 Break & AM Refreshments

10:45 Lessons learned and where we need to go (continued)

CyVerse, iMicrobe	Bonnie Hurwitz
EBI	Lorna Richardson (analysis and metadata)
	Josie Burgin (data submission)
Qiita	Justin Shaffer
MicrobiomeDB	Jie Zheng

12:00 Lunch (working lunch - provided)

13:00 Community perspective
What works (wins and best practices) or doesn't work (gaps and challenges)

13:30 Breakout groups

- New areas that need development (led by Lynn Schriml)
- Current barriers to adoption and compliance (led by Elisha Wood-Charlson)
- Communities of users - from exemplar to uninitiated (led by Luke Thompson)
- Use case development - from sample to data products (led by Joan Damerow)
- What does success look like? (led by Emiley Eloie-Fadrosch)
- Technology/infrastructure (led by Bonnie Hurwitz)

14:30 Break & PM Refreshments

14:45 Group reports

15:45 Open discussion

16:45 Group homework!

- Based on today's information, discuss challenges, gaps, and possible strategies for success in different domain areas. What are the key data descriptors that your community needs to ask the important questions?
- Each group should have a representative "expert" for science, ontology, technical, and community

17:00 Breakout group working dinner (off-site, not provided)

Day 3: Wednesday, 23 Oct 2019

09:00 Group reports

10:00 Open discussion on the pros and cons, with time for spontaneous ideas

10:30 Break & AM Refreshments

10:45 Deciding on a path forward

- Remainder of workshop
- 1 month
- 3 months
- 12 months

12:00 Close of Workshop Part 1
Lunch (provided)

Agenda - Part 2

Day 3 (continued)

13:00 Introduction to Part 2: Goals and objectives

Lead: Elisha Wood-Charlson

13:15 Group activities (refreshments at 15:00)

- **Ontology usage in MlxS standards:** Identify terms where ontologies could replace controlled vocabularies, areas needed for expansion and/or enhancement
- **Improving compliance:** Establish best practices and tools to streamline and simplify labeling, indexing, and updating
- **Enhancement Jamboree:** Review data sets submitted by workshop attendees, SRA, IMG, etc. Identify who and what is needed for compliance as recommendations for targeted outreach
- **Outreach and Education:** Develop process for announcing release and updates. Create training materials for outreach activities.

17:00 Adjourn for dinner (not provided)

Day 4: Thursday, 24 Oct 2019

09:00 Group reports

10:00 Discuss next steps and continue hackathon (refreshments at 10:30)

12:00 Lunch (provided)

13:00 Discuss workshop report strategy (topics, leads, timeline)

14:00 Continue hackathon (refreshments at 15:00)

16:00 Finalize action items, next steps

17:00 Close of workshop