



U.S. DEPARTMENT OF
ENERGY

EMSL and ORCID Integration

A presentation for the ORCID-Library Carpentry Webinar

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Deputy for User Services

May 16, 2019



Scientific Innovation Through Integration

EMSL Usage System (EUS) is ‘one-stop shop’ to manage people, projects

- Role-based management tool
 - automated workflows and notifications
- Manages people, project lifecycles, usage and data
 - User Portal
 - Admin
 - Instrument Scheduling and use (ERS)
 - Data repository and release



User Portal is ‘one-stop shop’ for users



- ORCID integration tied into My Profile in 2017
- Authentication required for
 - New account creation
 - Proposal submission

The screenshot shows the EMSL User Portal homepage. At the top, there's a navigation bar with the EMSL logo, the title "USER PORTAL", and a welcome message "Welcome admin". Below the navigation is a sidebar titled "QUICK LINKS" containing links to "My Profile", "Submit a Proposal", "Schedule an Experiment", "Submit a Sample", "Search my Data", "Publications", "Provide Feedback", and "Sign out". The main content area features several cards and sections:

- A green "Announcements" card with buttons for "Summary Required", "Orcid® Info Needed", and "Training Due".
- A white "Proposals / Projects" card with a document icon.
- A yellow "Publications" card with a book icon.
- A red "Training" card with a person icon and a red exclamation mark.
- A white "Get Data" card with a magnifying glass icon.
- A white "Schedule Experiments" card with a calendar icon.
- A white "Sample Status" card with three flask icons.
- A white "Reviews" card with a thumbs up and thumbs down icon and a red number "6".
- A "Science" section featuring a circular diagram with molecules and three "carousel items": "First carousel item" (labeled "Read more..."), "Second carousel item" (labeled "Read more..."), and "Third carousel item" (labeled "Read more...").

At the bottom, there are links for "Contact Us", "Terms & Conditions", "Privacy", "Frequently Asked Questions", and an email address "emsl@pnnl.gov | 509.371.6003".

Authentication and permission steps to integrate ORCID



1

First name * Last name *
Middle name * No middle name
Citizenship*

ORCID® record Permissions*

User records are associated with ORCID IDs. Answering the question below will redirect you to the ORCID website so we can retrieve your ORCID ID. In addition, selecting "Yes" will authorize us to post non-proprietary EMSL user research awards, as well as other professional service activities to your ORCID record. If you wish, you may opt out of these automatic updates by selecting "No" now, or at any time in the future (see Help box for more details).

Do you authorize EMSL to post all non-proprietary project awards and/or other professional service to your ORCID record?

Yes No What is this?

ORCID ID* No ORCID ID retrieved

Your email address is required to log in to the User Portal, and will be used to send you a temporary password for your first login.

Email Address *

Institution *

Type of Institution *

Creating this account will also add your name to EMSL Announcements, which provide alerts and news items related to the user program. Users may unsubscribe at any time using the link in the EMSL Announcement.

[Create User](#) or [Cancel](#)

2



Courtney Testaccount8
<https://sandbox.orcid.org/0000-0002-9354-9099>

(Not You)

Environmental Molecular Sciences Laboratory (EMSL)

has asked for the following access to your ORCID Record



Read your information with visibility set to Trusted Parties
Add/update your research activities (works, affiliations, etc)

This application will not be able to see your ORCID password or any other information in your ORCID record with visibility set to Only me. You can manage permission granted to this and other Trusted Organizations in your account settings.

Authorize

Deny

3

First name * Last name *

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Do you authorize EMSL to post all non-proprietary project awards and/or other professional service to your ORCID record?

Yes No What is this?

ORCID ID* <https://orcid.org/0000-0002-9354-9099>

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[Create User](#) or [Cancel](#)



Data management includes ORCID integration

- Data management policies release data manually by team or automatically based on timer
- Publicly released data available for multi-faceted search with DOI minting via OSTI for downloaded data
- Requires Portal registration/log-in **with ORCID iD**

The screenshot shows the EMSL Data Management for Science portal. At the top, there's a green header bar with the EMSL logo and the text "DATA MANAGEMENT FOR SCIENCE". Below the header, a navigation bar includes "Main Search Page" and "Anonymous Stranger". A search bar says "Search Datasets". On the left, a sidebar has sections for "Dataset", "Institution" (selected, showing "University of Oklahoma" checked), "Instruments", "Instrument Groups", "People", "Projects", and "In-Depth Metadata". The main content area shows a search result for "University of Oklahoma" with 16 results found. It lists two datasets:

- Dataset:** 1494769
Project: Systematic Characterization of Protein Glycosylation of Bacteria Cell Surface Proteins (#45394)
Abstract: The overall goal of this proposal is to develop an integrated top-down and bottom-up approach for bacterial glycoprotein profiling assisted by accurate glycan structure identification, which will be applied to study bacterial glycosylations. This platform will combine multiple cutting-edge "omics" techniques (proteomics, glycomics, and bioinformatics) uniquely provided by EMSL: (1) state-of-the-art instrumentation (FTMS, including high field FTICR MS, high resolution
- Dataset:** 1494545
Project: Systematic Characterization of Protein Glycosylation of Bacteria Cell Surface Proteins (#45394)
Abstract: The overall goal of this proposal is to develop an integrated top-down and bottom-up approach for bacterial glycoprotein profiling assisted by accurate glycan structure identification, which will be applied to study bacterial glycosylations. This platform will combine multiple cutting-edge "omics" techniques (proteomics, glycomics, and bioinformatics) uniquely provided by EMSL: (1) state-of-the-art instrumentation (FTMS, including high field FTICR MS, high resolution

For each dataset, there are "Display full abstract", "Instrument: Mass Spectrometer: Orbitrap (#34127)", "View Files", and "Download Files" buttons.

With ORCID API 3.0, automated award push to research resources



- System timer verifies permission token to post and searches daily to automatically push new award information to ORCID for PI and co-PIs
- Also adds user facilities as “infrastructure”
- ORCID record includes URL to EMSL website

Tullis Onstott
ORCID iD
https://orcid.org/0000-0002-2898-3374

Print view

Research resources (1 of 1)

Detecting Seismically-Sustained Deep Subsurface CH₄-cycling Chemolithoautotrophic Microbial Communities Using Multi-Omic Analyses and NanoSIMS
2017-10-01 to 2019-09-30
DOI: 10.25582/v01.proj.2017.49952
OTHER-ID: Project ID 503562

Environmental Molecular Sciences Laboratory (Richland, WA, US)
Organization identifiers
GRID: grid.436923.9
Environmental Molecular Sciences Laboratory: Richland, Washington, US
<http://www.emsl.pnl.gov/emsweb/>
Other organization identifiers provided by GRID
ISNI: 0000 0004 0373 6523
ORGREF: 19642725
WIKIDATA: Q5381141
WIKIPEDIA_URL: https://en.wikipedia.org/wiki/Environmental_Molecular_Sciences_Laboratory (preferred)

Joint Genome Institute (Walnut Creek, CA, US)
Organization identifiers
GRID: grid.451309.a
Joint Genome Institute: Walnut Creek, California, US
<http://jgi.doe.gov/>
Other organization identifiers provided by GRID
ISNI: 0000 0004 0449 479X
WIKIDATA: Q3183039
WIKIPEDIA_URL: https://en.wikipedia.org/wiki/Joint_Genome_Institute (preferred)

Added	Last modified
2019-04-19	2019-04-19

Resource item	Type	Actions
EMSL Facility	infrastructures	<input type="checkbox"/> show details
Joint Genome Institute	infrastructures	<input type="checkbox"/> show details

Award ties to EMSL website with proposal abstract and PI



- Accepted proposals posted nightly with abstract, PI information
- URL includes DOI prefix/infix with full DOI minting by October 2019 via OSTI

The screenshot shows the EMSL website with a proposal abstract. The URL in the address bar is <https://www.emsl.pnnl.gov/emslweb/10.25582/proj.2017.49952>. The page title is "Detecting Seismically-Sustained Deep Subsurface CH4-cycling Chemolithoautotrophic Microbial Communities Using Multi-Omic". The abstract discusses the specific objective of the proposed JGI/EMSL project, mentioning the goal to delineate syntrophic chemolithoautotrophic microbial communities in deep subsurface fault zones. It details the hypothesis that H2 pulses released during seismic activity are rapidly consumed by hydrogenotrophic methanogens and sulfate reducing bacteria (SRB), and how ASOB (anaerobic sulfide oxidizing bacteria) utilize H2 as an electron donor during these pulses. The abstract also mentions the use of isotopic analyses (e.g., Delta13CH3D and Delta12CH2D2) to predict mixing between clumped and biogenic CH4 isotopic signatures. The text concludes with a hypothesis about syntrophic interactions between microbial clades.

Allows for multiple organization involvement in awards



- Award push shows example of a shared award by two organizations
- Able to identify organizations in specific order vs. alpha order

Tullis Onstott

ORCID ID
<https://orcid.org/0000-0002-2898-3374>

[Print view](#)

Research resources (1 of 1)

Detecting Seismically-Sustained Deep Subsurface CH₄-cycling Chemolithoautotrophic Microbial Communities Using Multi-Omic Analyses and NanoSIMS
2017-10-01 to 2019-09-30
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GRID: grid.451309.a
Joint Genome Institute: Walnut Creek, California, US
<http://jgi.doe.gov/>
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ISNI: 0000 0004 0449 479X
WIKIDATA: Q3183039
WIKIPEDIA_URL: https://en.wikipedia.org/wiki/Joint_Genome_Institute (preferred)

Added	Last modified
2019-04-19	2019-04-19

Resource item	Type	Actions
EMSL Facility	infrastructures	<input checked="" type="checkbox"/> show details
Joint Genome Institute	infrastructures	<input checked="" type="checkbox"/> show details

Partner tables define associations with unique partner identifiers



	PARTNER_PROPOSAL_MAP_ID	PROPOSAL_ID	PARTNER_PROPOSAL_ID	PARTNER_ID	URL
<input type="checkbox"/>	1	50356	504270	1	NULL
<input type="checkbox"/>	2	50358	504273	1	NULL
<input type="checkbox"/>	3	50365	504298	1	NULL
<input type="checkbox"/>	4	50370	504291	1	NULL
<input type="checkbox"/>	5	50380	504279	1	NULL
<input type="checkbox"/>	6	50381	504306	1	NULL
<input type="checkbox"/>	7	50384	504272	1	NULL
<input type="checkbox"/>	8	50386	504277	1	NULL
<input type="checkbox"/>	9	50395	504305	1	NULL

Between EMSL's ID and call

	PARTNER_CALL_MAP_ID	CALL_ID	PARTNER_ID	LOCATION_ID	PRIMARY	PROPOSAL_URL_FORMAT	PARTNER_OBJECT_IDENTIFIER_FORMAT	PARTNER_OBJECT_IDENTIFIER_TYPE
<input type="checkbox"/>	1	184	1	1	Y	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id
<input type="checkbox"/>	2	185	1	1	Y	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id
<input type="checkbox"/>	3	186	1	1	Y	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id
<input type="checkbox"/>	4	166	1	1	N	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id
<input type="checkbox"/>	5	167	1	1	N	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id
<input type="checkbox"/>	6	168	1	1	N	https://genome.jgi.doe.gov/portal/	Project ID <PARTNER_PROPOSAL_ID>	other-id

Between call and partners

	LOCATION_ID	POINT_OF_CONTACT	NAME	PARTNER_ID	CITY	STATE	ZIP
<input type="checkbox"/>	1	53383	Joint Genome Institute	1	Walnut Creek	CA	94598
<input type="checkbox"/>	2	53383	Joint Genome Institute	1	Berkeley	CA	94720

Between partners and locations

	PARTNER_ID	NAME	POINT_OF_CONTACT	IDENTIFIER	IDENTIFIER_TYPE	URL
<input type="checkbox"/>	1	Joint Genome Institute	49094	qnd.451309.a	GRID	https://jgi.doe.gov/

With unique identifiers for partners

In FY 2019, began pushing specific resources used



- Expanded push to team members with recorded use on specific resources
- Identified as equipment
- URL directs to EMSL
- Goal: Publications will reference data, ‘funders’ and specific resources for improved impact tracking
- Note: ORCID’s “find/replace” schema (vs. “update”) means larger data push

Resource item	Type	Actions
EMSL Facility	infrastructures	<input checked="" type="checkbox"/> show details
Joint Genome Institute	infrastructures	<input checked="" type="checkbox"/> show details
Confocal, FLIM & Multi-Photon Fluorescence Microscope	equipment	<input type="checkbox"/> hide details
URI: https://www.emsl.pnnl.gov/emslweb/10.25582/inst.34121		
Environmental Molecular Sciences Laboratory (Richland, WA, US)		
Organization identifiers		
GRID: grid.436923.9		
Environmental Molecular Sciences Laboratory: Richland, Washington, US		
http://www.emsl.pnnl.gov/emslweb/		
Other organization identifiers provided by GRID		
ISNI: 0000 0004 0373 6523		
ORGREF: 19642725		
WIKIDATA: Q5381141		
WIKIPEDIA_URL: https://en.wikipedia.org/wiki/Environmental_Molecular_Sciences_Laboratory (preferred)		
STORM/PALM - Super Resolution Fluorescence Microscope	equipment	<input checked="" type="checkbox"/> show details
NanoSIMS	equipment	<input checked="" type="checkbox"/> show details

Source: Environmental Molecular Sciences Laboratory (EMSL)

★ Preferred source



URL points to EMSL's website for instrument details

- URL includes EMSL prefix and infix
- Instrument pages point back to projects and associated publications

The screenshot shows a web browser displaying the EMSL website. The URL in the address bar is <https://www.emsl.pnnl.gov/emslweb/10.25582/inst.34121>. The page content is as follows:

Environmental Molecular Sciences Laboratory
A DOE Office of Science User Facility

HOME | **ABOUT** ▾ | **SCIENCE** ▾ | **CAPABILITIES** ▾ | **FOR USERS** ▾ | **NEWS** ▾

Confocal, FLIM & Multi-Photon Fluorescence Microscope

This microscopy system integrates seamlessly nonlinear two-photon excitation, laser-scanning confocal microscopy, and fluorescence lifetime imaging (FLIM) in one fully automated upright configuration. Nonlinear two-photon excitation allows minimally invasive and deep-penetrating, high-resolution 3-D imaging of living systems. The FLIM supports quantitative fluorescence resonance energy transfer (FRET) for investigating molecular interaction dynamics in live cells. The system also includes differential interference contrast imaging (DIC) to provide cellular context to the fluorescence information.

In addition, the system includes a multi-spectral fluorescence detection unit (QUASAR), which can separate the fluorescent signals emitted from the sample into 32 distinct channels based on wavelengths or colors. This system is used, for example, to identify distinct cell populations in complex microbial communities by their distinct combination of endogenous pigments (i.e. ratio of chlorophyll A or C and phycocyanin).

Figure caption: Study the spatial relationships between autotrophs and heterotrophs using fluorescence *in situ* hybridization (FISH). The filamentous cyanobacteria are detected by their endogenous chlorophyll (red), and the heterotrophs are detected by a specific FISH probe targeting *Algoriphagus marincola* (yellow). DNA is shown in blue.

Instrument ID: 34121
Availability: 10 hours a day, 5 days a week

Quick Specs Science Contact Science Highlights Publications Projects

Resolution: lateral 240 nm, axial 600 nm

Image acquisition rate: 5 frames per Seconds (at 512*512 pixels size)

By early FY 2020, push professional service and positions to recognize contributions to user program



▼ Invited positions and distinctions (1)		Sort	▼ Membership and service (2)		Sort
Environmental Molecular Sciences Laboratory: Richland, WA 2012-05-01 to 2013-04-30 William R. Wiley Distinguished Research Fellow Invited position			Environmental Molecular Sciences Laboratory: Richland, WA 2016-07-01 to 2019-06-30 Member, User Executive Committee Service		
Organization identifiers Ringgold: 130367 Environmental Molecular Sciences Laboratory: Richland, WA, US			Organization identifiers Ringgold: 130367 Environmental Molecular Sciences Laboratory: Richland, WA, US		

Invited distinctions:

- Joint appointments
- EMSL fellowships

Professional service:

- Proposal reviewers
- Workshop participants
- Visiting Scientists
- Advisory committee members

EMSL GitHub provides sample model and JSON document



- Sample model representing a proposal object that could be pushed to a user's ORCID record via the API v3.0
- OrcidJsonDocTest.java for simple example how to populate and generate a valid JSON document to push to ORCID

Branch: develop | [orcid_model](#) / [src](#) / [com](#) / [example](#) /

ntenney Add example source code and ORCID model

Add example source code and ORCID model

150 lines (118 sloc) | 5.29 KB

Raw Blame History

```
1 import com.example.*;
2 import com.google.gson.Gson;
3
4 import java.util.ArrayList;
5
6 public class OrcidJsonDocTest{
7     public static OrcidDate buildDate(String yearString, String monthString, String dayString){
8         OrcidDate orcidDate = new OrcidDate();
9
10        orcidDate.setYear(newStringValue(yearString));
11        orcidDate.setMonth(newStringValue(monthString));
12        orcidDate.setDay(newStringValue(dayString));
13
14        return orcidDate;
15    }
16
17    public static Title buildTitle(String titleString){
18        Title title = new Title();
19        title.setTitle(newStringValue(titleString));
20        return title;
21    }
22
23    public static ExternalId buildExternalId(String externalIdType, String externalIdValue, String externalIdUrlString){
24        ExternalId externalId = new ExternalId();
25
26        externalId.setExternalIdType(externalIdType);
27        externalId.setExternalIdValue(externalIdValue);
28        if(externalIdUrlString != null)
29            externalId.setExternalIdUrl(newStringValue(externalIdUrlString));
30        else
31    }
```

https://github.com/PNNL-EMSL/orcid_model



Additional specs and contacts

- Technical specs for the EUS system (new version underway):
 - Java (1.7)
 - Spring ORM
 - Quartz timer
 - JSF (Java Server Faces)
 - JSP/Servlets
 - JQuery
 - Apache Commons
 - Tomcat 7
- Contacts:
 - EUS software and design: Nathan Tenney (Nathan.Tenney@pnnl.gov)
 - EMSL User Program: Terry Law (terry.law@pnnl.gov) or Courtney Carpenter (Courtney.carpenter@pnnl.gov)

Questions?



www.emsl.pnnl.gov

