Facilities Integrating Collaborations for User Science (FICUS) Program

Aditi Sengupta, PhD
Project Manager
EMSL User Program Services
FICUS
Facilities Integrating Collaborations for User Science
• **Partner**: Atmospheric Radiation Measurement (ARM)

• Collaborative research with both EMSL and ARM integrating expertise and capabilities

• **Submission process**
  • Letter of Intent (LOI)
  • Full Proposal

• **Call will open**: Jan’ 25

• **Review process**
  • Internal: alignment and technical feasibility
    • Comments shared with peer reviewers
  • External
    • Review comments shared with submitters

• **Project length**
  • 24 months

• **FY25**: 11 LOI and full proposal submissions
FICUS EMSL-JGI based call

- **Partners**: Advanced Photon Source (APS), Center for Structural Molecular Biology (CSMB), Joint Genome Institute (JGI), and National Ecological Observation Network (NEON)

- Collaborative research with at least two partners

- **Submission process**
  - Letter of Intent
  - Full Proposal

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- **Review process**
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FY25 FICUS EMSL-JGI Call: LOI breakdown

61 LOI submissions

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<tr>
<th>Facility</th>
<th>LOIs</th>
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Environmental Molecular Sciences Laboratory (EMSL)

Department of Energy (DOE), Office of Science Biological and Environmental Research (BER) Program

- 150+ world-class instruments
- 680+ users worldwide
- 250+ active user projects
Joint Genome Institute (JGI)

Contact: Tanja Woyke
(TWoyke@lbl.gov)
Atmospheric Radiation Measurement User Facility

Measurements of clouds, aerosols, precipitation, radiation, surface properties, and the atmospheric state since 1992

Support for process studies and model and satellite development

Network of three fixed-location and three mobile observatories

Piloted and uncrewed aerial measurement platforms

Extensive data management infrastructure; data freely available

Large-eddy simulation (LES) model simulations and analysis tools

Support for field campaigns ranging from guest instruments to facility deployments

Users: 1,113
Campaigns: 90
Publications: 156
Sci./Nat./PNAS: 8

Contact: Jim Mather
(Jim.Mather@pnnl.gov)
eBERlight at Advanced Photon Source

Crystallography (LS-CAT)
- 21-ID-D
- 21-ID-F
- 21-ID-G

X-ray tomography
- 2-BM
- 7-BM
- 32-ID-B
- 32-ID-C

X-ray microscopy
- 2-ID-D/BNP
- 2-ID-E
- 8-BM
- ISN
- Ptychoprobe

Sample preparation
Cryolab at APS
Lab infrastructure in bldg. 203

Computing
Argonne Leadership Computing Facility

Contact:
eBERlight@anl.gov

Sample preparation characterization
Center for Nanoscale Materials

X-ray absorption spectroscopy
- 9-BM
- 20-BM
- 25-ID-C
- 25-ID-D

Small-angle X-ray scattering
- 12-ID-B
- 12-ID-C
- 12-BM

Molecular biology
Advanced Protein Characterization Facility (Sector 84)

Microfluidics
Advanced Protein Characterization Facility

Argonne National Laboratory
APS
Biomacromolecules and complexes

- Protein-protein
- Protein-nucleic acid

Biomembranes

- Lipid assemblies in vitro
- Intact membranes in vivo

Length-scales from 1 – 500 nm
- Measurements under physiologically relevant conditions

Complex systems

- Nanoplastics in soil
- Lignocellulose formation and breakdown

Contact: Hugh O’Neill
(oneillhm@ornl.gov)
National Ecological Observation Network

DATA PRODUCTS

- Over 81 FIELD SITES
  - 47 terrestrial
  - 34 aquatic

- 180 DATA PRODUCTS

- Automated instruments
- Observational sampling
- Airborne remote sensing

Contact: Michael SanClements
(msanclements@battelleecology.org)
Opportunities and Challenges

- Encourages community to propose novel ways for facilities to work together
- Coordinating experimental schedules and datasets expedites results
- Focus on advancing DOE missions in bioenergy and environment
- Expansion of user base to be inclusive and diverse
Questions?
emsl@pnnl.gov