

CV and Additional Files: (e.g., images). Authors **must** include the abbreviated curriculum vitae (2-3 pages) of the **PI**. Abbreviated CVs of contributing co-PIs that would impact the review of Criterion 2 (team's qualifications) are *required for proposals with computational requests* and are encouraged for all other proposals. Additional supplemental information may be included if deemed necessary, but there is no guarantee that the reviewers will read it.

Preferred Start Date: _____ **Preferred End Date:** _____

Proposal Type: Select one.

- Current Call** – Submitted in response to specific annual call and available only during the timeframe of the Call. Open for one year, with 1-2 extension possible, depending on the Call. Proposals should identify the specific focus or the one that most closely matches from the Call's advertised options. See below for examples.
 - Science Theme:
 - Biological Interactions and Dynamics
 - Geochemistry/Biogeochemistry and Subsurface Science
 - Science of Interfacial Phenomena
 - Capabilities-Based
 - 900 MHz NMR
- General** – May be submitted at any time and are open for up to one year only. Only limited resources are available for these proposals.
- Rapid** – Short-term access for rapid turnaround to meet specific deadline (e.g., follow-up experiment to finalize publication; final data run on thesis, initial experiment for funding proposal preparation, etc.). Open for 30 days only. ***Must clearly state approaching deadline and detail justification.***
- Proprietary** – Research will not be publishable and may require full-cost recovery. Open for up to one year only.
- Partner** – ONLY for users with approved Letter of Intent to co-develop and co-fund a project with EMSL. Open for time determined by EMSL's Partner Panel.
- Resource Owner** – Only for PIs who own or co-own resources with EMSL. Open for one year, with two extensions possible.

Is this proposal associated with a National Science Foundation Supplemental Funding Request? Yes No
<http://www.nsf.gov/pubs/2004/nsf04025/nsf04025.htm>

Will you desire the assistance of EMSL staff in obtaining and interpreting the results? Yes No

PNNL Staff Contact: _____

Resources

Select all resources needed and enter an estimate for the time needed **for each during the first year** of the proposal. Resources are listed by Capabilities, and operate 24 hours a day/7 days a week or 10 hours a day/5 days a week. Operating hours by instrument are listed on EMSL's website (<http://www.emsl.pnl.gov/capabilities/instrumentList.jsp>).

Cell Isolation and Systems Analysis

Cell Culture

- _____ Mammalian Cell Culture
- _____ Microbial Microbioreactors – (avail. Mar. 2010)

Cell Isolation and Fractionation

- _____ Flow Cytometer: Influx
- _____ Laser Microdissection

Fluorescence Microscopy/Spectroscopy

- _____ Microscope: Confocal, Multi-Photon/FLIM Integrated – (avail. Apr. 2010)
- _____ Microscope: Fluorescence, Confocal, Real-Time – (avail. Apr. 2010)
- _____ Microscope: Fluorescence, Single Molecule
- _____ Microscope: Fluorescence, Single Molecule/Patch Clamp
- _____ Microscope: Scanning Probe – AFM Compound

- _____ Microscope: STORM

Secondary CISA Resources

- _____ Electron Microscope: Transmission, High Resolution
- _____ Electron Microscope: Dual FIB/SEM
- _____ Electron Microscope: Transmission, CRYO 2005
- _____ NMR Spectrometer: 2 Tesla Horizontal Bore Varian (Imaging)
- _____ NMR Spectrometer: 500 MHz WB Bruker (Imaging)
- _____ NMR Spectrometer: 600 MHz NB Varian LC-NMR System – metabolomics cryoprobe (Liquids)

Transcriptomics

- _____ Sequencers – (avail. Apr. 2010)

Computing

Data File Storage

- _____ Computing: Data File Storage (NWfs)

Graphics

- _____ Computing: SGI 16-processor Graphics Server (NWWvisus)

Small Clusters

- _____ Computing: NW-ICE
- _____ Computing: Spokane cluster

Super Computing

- _____ Computing: Chinook (HP 2310-Node Linux Cluster)

Deposition/Microfabrication

Ion/Molecular Beam Spectrometry

- _____ Ion Accelerator, Beam Lines, and End Stations
- _____ Liquid-Beam Source
- _____ Surface Dynamics/Ion Deposition System

Microfabrication

- _____ Electron Microscope: Dual FIB/SEM
- _____ Microfabrication Laboratory (Clean Room)
- _____ Microfabrication: Deep Reactive Ion Etching System – (avail. Jun. 2010)
- _____ Microfabrication: Mask Aligner – (avail. Jun. 2010)
- _____ Microfabrication: Nanoimprinter – (avail. Apr. 2010)

Thin Film Deposition

- _____ Deposition: Molecular Beam Epitaxy #1
- _____ Deposition: Molecular Beam Epitaxy #2
- _____ Deposition: Pulsed Laser Deposition System
- _____ Deposition: Sputter Deposition System – (avail. Oct. 2010)
- _____ Mass-Selected Ion Deposition System – Electro spray Source

Mass Spectrometry

Aerosol Particle Characterization

- _____ Mass Spectrometer: Aerosol - time-of-flight, high resolution
- _____ Mass Spectrometer: Linear Ion Trap Quadrupole (LTQ) Orbitrap MS - for environmental research
- _____ Mass Spectrometer: Proton Transfer Reaction (PTRMS)
- _____ Mass Spectrometer: Single Particle (SPLAT II)
- _____ Mass-Selected Ion Deposition System – Electrospray Source

Imaging

- _____ Mass Spectrometer: MALDI FTICR – (avail. Jan. 2011)
- _____ Mass Spectrometer: MALDI-TOF – (avail. Jan. 2011)

Ion Surface

- _____ Analytical: Inductively Coupled Plasma-Mass Spec (ICP-MS)
- _____ Mass Spectrometer: FT-ICR 6 T (Ion Surface Collisions)

- _____ Mass Spectrometer: Isotope Ratio
- _____ Mass Spectrometer: Time of Flight Secondary Ion (ToF SIMS) - 1997
- _____ Mass Spectrometer: Time of Flight Secondary Ion (ToF SIMS) – 2007

Proteomics/Biological

- _____ Mass Spectrometer: Fourier Transform Ion Cyclotron Resonance
- _____ Mass Spectrometer: Ion Mobility Time of Flight
- _____ Mass Spectrometer: Linear Ion Trap (LTQ)
- _____ Mass Spectrometer: Orbitrap
- _____ Mass Spectrometer: Triple Quadrupole

Microscopy

Aerosol Particle Characterization

- _____ Electron Microscope: Scanning, Environmental, Field Emission (FEI)
- _____ Mass Spectrometer: Single Particle (SPLAT II)

Electron

- _____ Electron Microprobe – (avail. May 2010)
- _____ Electron Microscope: Photoemission (PEEM)
- _____ Electron Microscope: Transmission, High Resolution
- _____ Electron Microscope: Dual FIB/SEM
- _____ Electron Microscope: Dual FIB/SEM, environmental – (avail. May 2010)
- _____ Electron Microscope: Transmission, Aberration Corrected – (avail. Oct. 2010)
- _____ Electron Microscope: Transmission, CRYO 2005

Ion

- _____ Microscope: Helium Ion – (avail. May 2010)
- _____ Spectrometer: Atom Probe – (avail. May 2010)

Optical

- _____ Mammalian Cell Culture
- _____ Microscope: Fluorescence, Single-Molecule

- _____ Microscope: Fluorescence, Single-Molecule / Patch Clamp
- _____ Microscope: Raman Confocal
- _____ NMR Spectrometer: 500 MHz WB Bruker (Imaging)
- _____ Spectrometer: Fluorescence, Cryogenic
- _____ Spectrometer: FTIR - standard
- _____ Spectroscopy: Fluorescence, Time-resolved

Scanning Probes

- _____ Geochemistry AFM
- _____ Microscope: Scanning Probe – AFM Compound
- _____ Microscope: Scanning Probe – AFM, Bioscope
- _____ Microscope: Scanning Probe, DI Nanoscope IIIa Multimode
- _____ Microscope: Scanning Probe – Dynamic Force
- _____ Microscope: Scanning Probe, IRs-SNOM – (avail. Aug. 2011)
- _____ Microscope: Scanning Probe, STM/AFM, Low Temperature, UHV – (avail. Jan. 2011)
- _____ Microscope: Scanning Probe - STM/AFM, PicoSPM
- _____ Microscope: Scanning Probe, Variable Temperature
- _____ Microscope: Scanning Probe, Variable Temperature UHV

NMR and EPR

EPR

- _____ EPR Spectrometer Pulsed/CW (X-band, 9.5 GHz)
- _____ EPR Spectrometer: High Field (W-band, 95 GHz) – (avail. Apr. 2011)

High-Resolution Liquids

- _____ NMR Spectrometer: 600 MHz NB Varian Inova (Liquids)
- _____ NMR Spectrometer: 600 MHz NB Varian Inova – Cryoprobe (Liquids)
- _____ NMR Spectrometer: 600 MHz NB Varian LC-NMR System - metabolomics cryoprobe (Liquids)
- _____ NMR Spectrometer: 750 MHz NB (17.6 Tesla) Varian
- _____ NMR Spectrometer: 750 MHz (17.6 Tesla) WB Bruker – (avail. Apr. 2011)
- _____ NMR Spectrometer: 800 MHz (18.8 Tesla) Varian Cryoprobe (liquids)
- _____ NMR Spectrometer: 900 MHz (21.1 Tesla) Varian

Imaging

- _____ NMR Spectrometer: 2 Tesla Horizontal Bore Varian (Imaging)
- _____ NMR Spectrometer: 500 MHz WB Bruker (Imaging)
- _____ NMR Spectrometer: 750 MHz (17.6 Tesla) WB Bruker – (avail. Apr. 2011)

Radiological

- _____ NMR Spectrometer: 300 MHz WB Tecmag Discovery (radioactive samples)

Solid-State

- _____ NMR Spectrometer: 300 MHz WB Varian (Solids)
- _____ NMR Spectrometer: 300 MHz WB Tecmag Discovery (radioactive samples)
- _____ NMR Spectrometer: 500 MHz WB Varian (solids)
- _____ NMR Spectrometer: 750 MHz NB (17.6 Tesla) Varian
- _____ NMR Spectrometer: 750 MHz (17.6 Tesla) WB Bruker – (avail. Apr. 2011)
- _____ NMR Spectrometer: 850 MHz (20 Tesla) WB Varian (Solids) – (avail. Apr. 2011)
- _____ NMR Spectrometer: 900 MHz (21.1 Tesla) Varian

Spectroscopy/Diffraction

Electron

- _____ Catalysis: UHV Model Catalysts, High Pressure
- _____ Electron and Photon Stimulated Desorption (BES 2)
- _____ Electron Spectrometer: XPS Imaging – (avail. Oct. 2010)
- _____ Electron Spectrometer: Auger/Scanning Auger
- _____ Electron Spectrometer: HREELS, UHV Surface Chemistry
- _____ Electron Spectrometer: Scanning Multiprobe Surface Analysis System - Versaprobe
- _____ Electron Spectrometer: XPS High Resolution (Quantum)
- _____ Electron Spectrometer: XPS with laser interface
- _____ Photoelectron Spectrometer – Low Temperature

Fluorescence

- _____ Spectrometer: Fluorimeter
- _____ Spectrometer: Fluorescence, Cryogenic
- _____ Spectrometer: Fluorescence, Picosecond
- _____ Spectrometer: Fluorescence, Time-resolved

Infrared

- _____ Atmospheric Pressure Reactor System
- _____ Energetic Processes (Surfaces/Solids) Instrumentation w/Lasers
- _____ Spectrometer: FTIR – standard
- _____ Spectrometer: FTIR – HR

- _____ Transient Kinetic Analysis (TKA)

Ion/Molecular Beam Spectrometry

- _____ Ion Accelerator, Beam Lines, and End Stations
- _____ Surface Dynamics/Ion Deposition System
- _____ Microscope: Helium Ion – (avail. May 2010)
- _____ Molecular Beam Kinetics
- _____ Spectrometer: Atom Probe – (avail. May 2010)

Mössbauer

- _____ Spectrometer: Mössbauer

Optical

- _____ Spectrometer: Circular Dichroism
- _____ Spectrometer: Stopped-Flow, Absorbance, BioLOGIC SFM-400
- _____ Spectrometer: Sum Frequency/Second Harmonic Generation, Picosecond, Surface Spectroscopy – (avail. Nov. 2010)
- _____ Spectrometer: Sum Frequency/Second Harmonic Generation, Femto-Picosecond, High Resolution, Ultrafast Dynamics – (avail. Nov. 2010)

Raman

- _____ Spectrometer: Raman, Dispersive
- _____ Spectrometer: Raman, Confocal
- _____ Spectrometer: Raman, Fourier-Transform

_____ Spectrometer: Raman/Epifluorescence, Inverted Confocal – (avail. Jan. 2011)

_____ X-ray Diffraction: Microbeam

_____ X-ray Diffraction: Single Crystal

_____ X-ray Diffraction: Special Applications

_____ X-ray Diffraction: Computed X-ray Tomography – (avail. Jan. 2011)

X-ray Diffractometers

_____ X-ray Diffraction: Four-Circle

_____ X-ray Diffraction: General Purpose

Subsurface Flow and Transport

Analytical

_____ Analytical: Chromatograph: Ion

_____ Analytical: Chromatograph: Gas/Mass Spec System 2005

_____ Analytical: Chromatograph: Liquid

_____ Analytical: Inductively Coupled Plasma-Mass Spec (ICP-MS)

_____ Analytical: Total Organic Carbon Analyzer (TOC)

Flow Cells

_____ SFTEL: Flow Cell

_____ SFTEL: Hydraulic Property Apparati

_____ SFTE: Pore Scale Micromodels – (avail. Oct. 2010)

PART 3. LOGISTICS

Funding Agencies:

DOE requires that we report on the subject discipline of all proposals. Select all funding agencies associated with your proposed research.

- Department of Defense
- DOE, Office of Advanced Scientific Computing Research
- DOE, Office of Biological & Environmental Research
- DOE, Office of Environmental Management
- DOE, Office of Nonproliferation & National Security
- DOE, Other: _____
- Environmental Protection Agency
- Foreign Government Agency
- Industry, Foreign
- LDRD, Other National Lab
- LDRD, PNNL
- National Aeronautics and Space Administration
- National Institutes of Health
- National Science Foundation
- Nuclear Regulatory Commission
- Other U.S. Government Agency: _____
- University, Foreign
- University, U.S.
- Other (please specify): _____

Work Package # (required for PNNL employees only to verify if work is government or private): _____

Materials & Equipment

Will your research involve the use of human blood, tissues, DNA, cells, cell lines, or human biological samples in any form? Yes No

Does your work involve the use of live animals? Yes No

Will you be bringing or sending any chemicals to the EMSL facility? Yes No

Will you be bringing or sending any samples to the EMSL facility? Yes No

Do any of your samples contain bound or unbound engineered nanoparticles? Yes No

Do any of your samples contain radioactive isotopes? Yes No

Note: Do not ship any equipment, chemicals or samples to EMSL/PNNL without first coordinating with your host or the User Support Office, (509) 371-6003. Samples will not be accepted without a Sample Submission Form. In addition to EMSL regulations, users are responsible for adhering to all Department of Transportation regulations.

User Equipment: If you intend to bring equipment to EMSL, including computers that will need to connect to the PNNL network, please list them here.

Comments: If you have any additional needs or comments regarding the proposal or the process, please enter them here:
