



U.S. Department of Energy



Office of Science



The Excitement Never Ends!

ERSD 2007 Spring PI Meeting

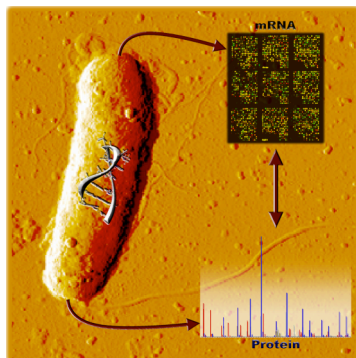
*J. Michael Kuperberg
Acting Division Director
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DOE, Office of Science, OBER*



Environmental Remediation Sciences Division (~\$90M)

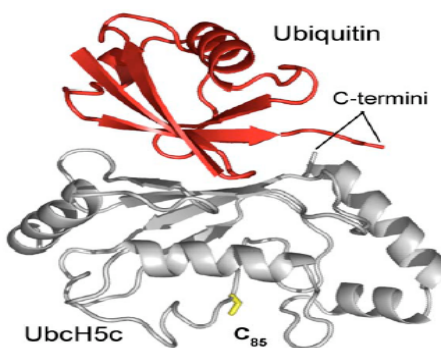


**Fundamental research for DOE environmental problems.
Supports a research program and a national scientific user facility:**



Environmental Remediation Sciences Program \$44M

- Processes that control contaminant mobility in subsurface
- Focus on DOE-relevant metals and radionuclides



Environmental Molecular Sciences Laboratory (EMSL) \$36M

The William R. Wiley Environmental Molecular Sciences Laboratory (EMSL), a U.S. Department of Energy national scientific user facility located at Pacific Northwest National Laboratory (PNNL) in Richland, Washington provides integrated experimental and computational resources for discovery and technological innovation in the environmental molecular sciences to support the needs of DOE and the nation.



What you have accomplished this year



- John Zachara – Pacific Northwest National Laboratory
 - 2007 DOE E.O. Lawrence Award (April 2007)
- Dave Clark, Dave Janecky and Leonard Land – LANL
 - Physics Today - Science based cleanup of Rocky Flats
- Wei-Min Wu et al. - Stanford
 - ES&T (x2) - Pilot-scale in situ bioremediation of uranium
- Brian Spalding, Dave Watson – ORNL
 - ES&T - Measurement of dissolved gases
- Tommy Phelps – ORNL/Allison Campbell - EMSL
 - R&D 100 Awards NanoFermentation/Surface-induced mineralization
- J Liu, A Brown, X Meng, D Cropek, J Istok, D Watson, Y Lu – UIUC
 - PNAS – DNA-based uranium sensor
- Yuri Gorby, et al. – PNNL/Venter Institute
 - PNAS - Electrically conductive bacterial nanowires
- J Chen, Susan Hubbard, J Peterson, K Williams, M Fioren, Phil Jardine, Dave Watson
 - Water Resources Research - Joint hydrogeophysical inversion approach applied to a contaminated fractured aquifer
- M Fields, C Bagwell, S Carroll, T Yan, X Liu, D Watson, P Jardine, C Criddle, T Hazen & J Zhou
 - ES&T - Phylogenetic and Functional Biomakers (ORNL FRC)
- Terry Hazen-LBNL, Martin Keller-ORNL, et al., AEM May 06
 - AEM - Environmental Whole-Genome Amplification
- Derek Lovley et al., AEM Feb 06
 - Characterization of metabolism in *Geobacter*



What EMSL has accomplished this year



- Former EMSL Director, Jean Futrell awarded 2007 ACS Award for Outstanding Achievement in Mass Spectrometry
- Grand Challenges
 - Washington University's Himadri Pakrasi & PNNL's Dave Koppenaal – Membrane biology of proteins in cyanobacterium
 - PNNL's John Zachara & Jim Fredrickson – Microbe-mineral interface and electron transfer
- "Canned nuclear waste cooks its container"
(Ian Farnan et al., Cambridge University, Nature News 1/10/07)

What ERSD has accomplished this year



- Made the first awards in the Environmental Remediation Sciences Program (06-12)
- Awarded three Integrated Field Challenge projects (06-16)
- Posted the 07-18 solicitation for FY 2008 funding



Staff



- Todd Anderson
- Paul Bayer
- Roland Hirsch (shared with Life Science)
- Arthur Katz (shared with Life Sciences)
- Mike Kuperberg
- Kim Laing (say hello on Wednesday)
- David Lesmes
- Teresa Fryberger resigned
- Judy Nusbaum retired
- Secretary position to be filled



Performance Monitoring



- Long-term measure
 - “By 2015, provide sufficient scientific understanding such that DOE sites would be able to incorporate coupled physical, chemical and biological processes into decision making for environmental remediation and long-term stewardship”
- Annual Target
 - FY 2007: Implement a field-oriented, integrated experimental research program to quantify coupled processes that control reactive transport of at least one key DOE contaminant
- Quarterly Milestones



BER Scientific Focus Areas



**You Can't Ignore the
800 Pound Gorilla**



What do SFA's mean?



- University-lead research is not affected
 - ERSD will continue annual solicitations
 - ERSD will maintain a roughly equal program at universities and labs
 - University-lead proposals may still include national lab collaborators
- National labs will be funded in a manner that is more consistent with their missions



FY 2007 Solicitations



- **ER07-18 Environmental Remediation Sciences Program**

to support innovative, fundamental research investigating the coupled physical, chemical, and biological processes affecting the transport of subsurface contaminants at DOE sites.

Applications should address hypothesis-driven research to define the key physical, chemical, and biological processes influencing the form and mobility of DOE contaminants in the subsurface. Research projects should aim to provide the scientific basis for the development of new remediation concepts or strategies for the long term stewardship of contaminated sites across the DOE complex.



FAQ's



- Is BER funding a “good old boy’s club”?
- Must universities collaborate with labs to get funded?
- Is ERSD only funding field research?
- Must my research be directly related to DOE mission needs?



ERSD budget outlook



	FY 2007	FY 2008 (request)
ERSP	\$43.8M	\$47.8M
EMSL Ops	\$35.6M	\$36.2M
EMSL Capital	\$5.5M	\$6.4M



What's next?



- Review and fund 07-18 proposals
- Work with national labs to implement the new SFA protocol
- Committee of Visitors (Fall, 2007)
- Plans for future PI meetings
 - Spring meetings
 - Fall workshops TBA
 - Spring 2008 meeting TBA – same timeframe



What can you do?



- Communicate – we like to talk to you!
- Great science! (that advances DOE's mission in environmental remediation)
- Notify us of your accomplishments
 - Publications, awards, Nobel prizes
- Acknowledge your funding source
- Consider EMSL & other DOE User Facilities in your research plan



Thank you!