



## EMSL Enclave: Open Yet Secure Computing

At the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL), staff and collaborative users from academia, industry, and other national laboratories—many who visit from other countries—must freely access EMSL data and computational systems while conducting research within the facility and remotely. However, the need for EMSL to provide open access to data and systems could expose resources across the Pacific Northwest National Laboratory (PNNL)—on whose campus EMSL resides and with whom EMSL shares many systems—to security issues, such as hacking and viruses.

To encourage open access while protecting PNNL from computational vulnerabilities, EMSL and PNNL implemented the “EMSL Enclave”—a series of firewalls that “compartmentalize” the user facility’s computer network from that of PNNL’s and the open internet.

“With this enclave, we hope that EMSL will be allowed more flexibility in its security policies without impacting PNNL security,” says Linda Connell, EMSL’s Computer and Network Services (CaNS) Technical Group Leader. “By separating our network and data from PNNL’s, we expect that any risk we accept will not expose PNNL’s data to the same risks.”

A hierarchy of access requirements was implemented to provide the EMSL and PNNL networks with appropriate levels of security while protecting them from compromise. Thus, staff and users access PNNL’s network “remotely” from their offices using the same methods they would from home. Many staff connect daily using Virtual Private Network software—which affords security by directing the user through a virtual “tunnel” into the network, and a SecurID one-time password, which provides user authentication.

The enclave provides the foundation for easier access to EMSL by creating the framework for differentiating EMSL’s computer security requirements from PNNL’s. The three-year effort involved intense concerted effort by staff from CaNS and PNNL’s Information Resources Management System and Safeguards and Security groups.

For information about the EMSL Enclave, contact Linda Connell (509-376-2375).

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