

# Enhancing the Value of National Labs



## *Collaborations in the Livermore Valley Open Campus*

### **Pioneering New Models for the National Labs**

To maintain their capabilities and relevance within the 21st century global context, many programs within the national security labs will require new work models and structures that capture early innovation of the national science technology and engineering community, bring home world-class capabilities for mission enhancement, and attract a strong pipeline of candidates—all while appropriately safeguarding national security functions, expertise, and resources. The vision of the Livermore Valley Open Campus is to facilitate and realize these models and structures to help strengthen the national ST&E base, a top goal cited in the May 2011 NNSA Strategic Plan.

The Livermore Valley Open Campus (LVOC)—a joint initiative of NNSA, Lawrence Livermore National Laboratory (LLNL), and Sandia National Laboratories (SNL)—helps achieve these objectives by promoting greater collaboration between the scientists at the national security labs and their partners in industry and academia.

### **Already Making a Difference**

LVOC is not just a concept. There is currently over 200,000 square feet of occupied office and lab space in the Open Campus with tailored operations, including customized access controls, separate and open IT and communications, and streamlined visitor processes, that facilitate partnerships with external organizations. These collaborations are already making a difference across numerous sectors, including the energy arena.

For example, Sandia's Combustion Research Facility (CRF)—now part of LVOC—has long demonstrated the power of leveraging the labs' world-class resources and expertise with external capabilities. The CRF's contributions are perhaps best summarized by a top U.S. auto industry executive, who asserted that every engine being made today is cleaner and more efficient due to the work done at the CRF.

The High Performance Computing Innovation Center (HPCIC), launched in 2011 in the northern LVOC area at LLNL, encourages partnerships to develop robust tools and codes in complex energy and infrastructure systems, manufacturing, cyber security, biosecurity, and big data analytics. Since its inception, HPCIC has partnered with companies such as IBM, Intel, Cisco, Baker Hughes, and GE Research on far-reaching efforts.



## Advancing Sustainable Energy Use

Several LVOC initiatives are advancing more efficient and sustainable energy use:

- HPCIC is playing a role in a California Public Utilities initiative to partner LLNL researchers with state energy utilities to develop new codes for a more robust grid.
- Scientists from GE Research worked with LLNL scientists and HPCIC computing platforms to assess LLNL's geoscience simulation capabilities for advancing GE's oil and gas research.
- Baker Hughes scientists are working with LLNL at the LVOC on a multi-year geoscience and manufacturing research project.
- Sandia researchers sponsored by the Office of Energy Efficiency and Renewable Energy (EERE) are working Cool Earth Solar to make solar technology competitive. The five-year agreement involves testing numerous units of Cool Earth's CPV technology on a dedicated LVOC field.
- In 2014, SNL will stand up the H2FIRST program in LVOC. Supported by EERE and in partnership with NREL and 20 industrial players, H2FIRST will help resolve technical issues to promote positive refueling experiences for fuel cell vehicle customers.

[www.sandia.gov](http://www.sandia.gov)

[www.llnl.gov](http://www.llnl.gov)

## A Venue for Visitors

Since its opening, LVOC has welcomed more than 8,500 visitors engaged in research and development, as well as numerous other activities:

- A meeting to inform potential commercialization partners about the Sandia Cooler, an innovative heat transfer technology
- The kickoff event of the 2014 CleanTech Open Competition
- The biannual Advanced Engine Combustion Meeting, a key event for an EERE-supported lab-industry group
- A meeting of the Secretary of Energy Advisory Board with public participation
- The U.S.-Japan Renewable Energy Policy Business Roundtable

## Learn More

Immediate plans for LVOC call for the development of two facilities—Collaboration in Research and Engineering for Advanced Technology and Education (CREATE) and a permanent home for HPCIC—specifically designed to foster enhanced collaborations in energy and other fields. These representatives welcome your questions about the future of LVOC and progress toward building

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