

**SURA Board of Trustees Meeting  
October 20-21, 2009**

**Technology and Development Highlights  
April – October 2009  
Russell Moy**

**Terahertz Symposium (June 10-12):** SURA's sixth annual Terahertz Symposium was held at the AAAS building in Washington. This year's symposium consisted of over two dozen presentations and was supported in part by five paying sponsors and exhibitors, registrations fees, and CD sales. Attendees represented seven countries. Jefferson Lab was both a sponsor and presenter at the Symposium. The Jefferson Lab interest in terahertz technologies comes from the JLab free electron laser facility's capability to generate higher power terahertz beams than those which are available from other sources. Terahertz beams are non-ionizing and have potential for industrial and medical imaging and for concealed weapons detection. At least in theory, terahertz beams may also find application in 'stand off' spectroscopy for applications such as remote detection of explosives.

**ONR/Raytheon Free Electron Laser Program (July 15):** Jerry Draayer and Russell Moy met with Raytheon engineers, Newport News Mayor Joe Frank, and other city officials on July 15 regarding the possible establishment of a Raytheon engineering activity for a Navy-funded free electron laser (FEL) that is proximate to the Jefferson Lab. Local and state incentive opportunities for the Raytheon activity were discussed at the meeting and in subsequent communications. This meeting was part of an ongoing discussion that began in March between SURA and Raytheon to locate a Raytheon FEL facility in Virginia.

Raytheon and Boeing were selected for Phase Ia funding (from five bidders) by the Office of Naval Research to design and build a 100 kW-class prototype of a design scalable to 1 MW. If selected for subsequent funding, Boeing intends to locate its activities in an existing facility in Washington State. The Jefferson Lab is an essential partner in the Navy program and it is SURA's interest to retain FEL and accelerator engineering expertise in Virginia and to exploit synergies resulting from closely-located JLab and industrial FEL engineering activities.

In September, SURA was advised by Jefferson Lab staff that Raytheon decided to establish engineering and laboratory FEL facilities outside of Virginia if selected for subsequent funding. This was confirmed informally by Raytheon, but we have not received official notification. A meeting is scheduled with the Newport News Economic Development Authority and Raytheon for mid-October.

**DOE/Jefferson Lab Technology Transfer (July 30/October 9):** Energy Secretary Chu and a Congressional Committee (see HR 111-203) have clearly stated the need to enhance the extent and effectiveness of technology transfer capabilities of DOE National Laboratories. Jerry Draayer, Russell Moy, and Elizabeth Lawson met with General John Gordon (retired, and former Undersecretary of Energy and NNSA Administrator) to hear a SURA-requested presentation on JLab technology transfer opportunities from senior Lab officials. Gen. Gordon chairs the JSA Operations Committee and also has significant experience and connections with homeland security applications and other disciplines that could provide new opportunities for JLab and SURA.

Lab officials will develop and present proposals for enhanced technology transfer functions. It is our intention to use these materials to inform potential industrial partners of JLab technology capabilities.

On October 9, senior Jefferson Lab managers, SURA, and CSC participated in a conference call with the director of physical sciences and IP specialists at UTEK, a technology and innovation broker specializing in providing corporate technology developers and university and private incubators with access to the innovations of public and private academic research organizations. UTEK has several technology specialties, including medical imaging devices, that coincide with some of the subject matter of the Jefferson Lab intellectual property portfolio.

**SURA Energy Workshop (August 11-12):** Representatives from eight SURA Member universities participated in the SURA Energy Workshop in Atlanta to identify potential energy research collaborations. The meeting included summaries of the energy research and facilities at the Member institutions and invited presentations from the Biofuels Center of North Carolina, the Institute on the Environment at the University of Minnesota, and the DOE Bioenergy Science Center at the Oak Ridge National Lab. The participants determined there are potential opportunities for collaboration in hybrid energy systems and in bioenergy. Discussion leaders for these two potential opportunities have completed their notes from the session and have circulated them for further discussion.

**Savannah River National Laboratory (August 13):** Unlike other DOE national laboratories, there is no dedicated contract for the Management and Operations of the Savannah River National Laboratory (SRNL). Rather, SRNL is operated as a “defined work activity” in the M&O contract for the Savannah River Site (SRS) between Savannah River Nuclear Solutions, LLC and the Department of Energy. In addition to SRNL, the 310 square mile SRS includes facilities for tritium and nuclear materials processing, nuclear material storage, radioactive liquid waste disposal, and other activities related to legacy nuclear programs. There are approximately 900 SRNL employees of 10,500 total employees at SRS.

SRNL is the “Corporate Laboratory” for the DOE’s Environmental Management assistant secretariat and the majority of its funding comes from EM and DOE’s National Nuclear Security Administration. The M&O contract requires that SRNL diversify its customer base and increase funding so that it can be operated as an entity independent of SRS in

the future. SRNL is also contractually obligated to conduct math, science, and education programs. SRNL has a number of ongoing research activities, including programs in sophisticated atmospheric modeling, computational sciences, and bioenergy.

On August 13, Jerry Draayer and Russell Moy met with the M&O contractor for SRS and the SRNL Director and Deputy Director to explore potential opportunities for collaboration. Some of the SRNL research activities could complement existing SURA and JLab research programs. There may also be opportunities for collaboration with the education, technology transfer, and outreach requirements in the M&O contract and with the Savannah River Ecology Laboratory, a research unit of the University of Georgia located at the Savannah River Site.

The Savannah River Site is undergoing extensive changes to the senior management of Savannah River Nuclear Solutions, the M&O contractor (including the replacement of its president on August 31). Some of these changes are apparently related to controversies over the management of recovery act funding, safety incidents, and labor relations issues at the site as a whole. The Savannah River National Laboratory has not been linked to the publicly reported problems at SRS.