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### **Helping Teachers Teach Plasma Physics<sup>1</sup>**

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Lawrence Livermore National Laboratory's E/O program in Fusion Science and Plasma Physics now includes both 'pre-service' as well as 'in-service' high school science teacher professional development activities. Teachers are instructed and mentored by 'master teachers' and LLNL plasma researchers working in concert. The Fusion/Plasma E/O program exploits a unique science education partnership that exists between LLNL's Science Education Program and the UC Davis Edward Teller Education Center. For 'in-service' teachers, the Fusion & Astrophysics Teacher Research Academy (TRA) has four levels of workshops that are designed to give in-service high school science teachers experience in promoting and conducting research, most notably in the field of plasma spectroscopy. Participating teachers in all four TRA levels may earn up to ten units of graduate credit from Cal-State University East Bay, and may apply these units toward a Masters of Science in Education. For 'pre-service' teachers, the Science Teacher and Researcher (STAR) program, as a partnership with the California State University System, includes attracting undergraduate science majors to teaching careers by allowing them to pursue professional identities as both a research scientist as well as a science teacher. Participating 'pre-service' STAR students are provided research internships at LLNL and work closely with the 'in-service' TRA teachers. Results from the continuum 'pre-service' to 'in-service' science teacher professional development programs will be presented.

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