

## SwissFEL Photonics: "Pump Laser Workshop"



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### **Laser Responsible - Talk 1: Lasers in FEL science: bringing ultrafast optical to ultrafast x-ray experimental stations**

*Friday 16 November 2012 14:00 (30 minutes)*

After only three years of user operations at LCLS, the optical laser systems have evolved in many key ways. We will discuss this evolution paying close attention to stability of the lasers and components and the importance of redundancy. We will list a couple of positive and negative experiences with system components and relate that to what should be available on day one. These experiences not only show how redundancy promotes rapid trouble-shooting but also how it promotes the research and development that is increasingly needed for cutting edge optical technology. The bleeding edge of laser technology must then be immediately engineered into a stable solution on experiments and this requires a healthy fraction of engineering driven staff to focus on the "D" in R&D. We will see how some of the current R&D efforts at LCLS are pushing the frontier of optical technology and see that some staff must be driven by "big-questions" in science so that the "R" in R&D is driven by legitimate xFEL science. It is a question of management style whether these R&D efforts are leveraged to promote academic vision which in turn alleviates burnout and promotes not only staff retention but staff development.

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