



Biographical Statement **Professor Mike Dunne**

Mike Dunne is an international leader in the field of high power lasers, with substantial experience in the design, construction, operation and exploitation of a wide variety of photon science research facilities. His personal research focuses on the development and application of high power lasers to high energy-density science and laboratory astrophysics.

Mike is currently the Director of the Linac Coherent Light Source (LCLS), an internationally leading user research facility, operated by Stanford University on behalf of the US Department of Energy. He is Associate Laboratory Director for the SLAC National Accelerator Laboratory, and a full Professor of Photon Science at Stanford University.

LCLS represents a revolution in x-ray science. The x-rays produced by LCLS are a billion times brighter than can be produced by conventional sources, such as a synchrotron, and are delivered in ultrafast bursts - typically a few tens of femtoseconds (10^{-15} seconds). This opens up transformational opportunities for the study of structural biology, quantum materials, ultrafast chemistry, and novel states of matter. Since its initial operation in 2009, LCLS has enabled a remarkable series of studies, via its ability to provide atomic resolution information, with freeze-frame ‘movies’ of how atomic, chemical and biological systems evolve on ultrafast timescales.

From 2010-2014, Mike was the Director for Laser Fusion Energy at the Lawrence Livermore National Laboratory (LLNL). His role was to ensure full advantage is taken of the National Ignition Facility (NIF), a \$3.5 billion investment designed to demonstrate net fusion energy production. At LLNL, Mike also held the role of Program Director for high average power laser development.

Previously, Mike was the International Project Leader for the European project ‘HiPER’. He created a consortium of 26 institutions across 10 countries to develop one of the few giga-Euro scale facility opportunities accepted onto the “European roadmap” of future research infrastructures (ESFRI).

Mike held the post of Director of the United Kingdom’s Central Laser Facility (CLF) from 2005-2010, working for the Science and Technology Facilities Council where he secured a number of significant advances, including the Astra-Gemini two-beam Petawatt laser and the Artemis ultra-fast X-ray science facility. The CLF is home to the world's most intense laser facilities, with science programmes ranging from biomedical research and ultrafast material science, to the pursuit of a new generation of miniaturized particle accelerators. In 2008 he took on additional responsibility as Director of the Photon Science Department, developing coupled laser and accelerator facilities; pursuit of next-generation Free Electron Laser sources; and oversight of the final phase of the UK’s Synchrotron Radiation Source (SRS). This entailed senior management of a staff of ~150 people at both the Rutherford Appleton Laboratory and the Daresbury Laboratory.

Prior to this he worked for the UK Government at AWE Aldermaston, leading their plasma science research group. He played a major role in establishing the scope and mission of AWE’s new “ORION” laser facility (~250 M\$) to preserve the UK’s national capability in this important area of strategic deterrence. From there he moved into a position developing the organization’s strategy and assessment of the overall national technical capability to meet the demands of future missions.

Mike obtained his doctorate in laser fusion and laboratory astrophysics research from Imperial College, London. He has received a number of international awards and is the author of over 180 technical papers, 11 patent applications, 60 invited talks, and over 80 press/media reports for the general public.