

12 years with Light Sheet Microscopy in core imaging facilities on Dresden campus

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Light Sheet Microscopy made great progress during last 15 years. We can now see its transition from the hands of developers to the hands of “ordinary” scientists who work in the field of biomedical research. Core imaging facilities can, in our opinion, play great role in supporting such transition. In our talk we will share the lessons which we learned during last 12 years when we have been bringing light sheet microscopy technology to users of core imaging facilities on Dresden campus. We will reflect the perspective of core imaging facilities who provide open access to broad range of imaging technologies to hundreds of users per year.

Our light sheet story started in 2006, when the first Zeiss light sheet “concept” system got installed in the multi user environment of the core Light Microscopy Facility (LMF) of the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) in Dresden (Germany). And then our journey continued with the first Z.1 system (Zeiss) which was installed in January 2013. This system was used around 9.500 hours during first two years of its operation. Facing the capacity limits of this system, we installed second Z.1.system in March 2015 (modified also for imaging of cleared samples). Total usage of both Z.1 systems from January 2015 till June 2018 reached circa 15 300 hours reflecting popularity of this technology among our users.

Two Z.1. setups at the MPI-CBG got complemented by the Ultramicroscope setup (LaVision Biotech Germany) which was installed at the core imaging facility of our partner institute on Dresden campus – Center of Molecular and Cellular Bioengineering (CMCB) in 2014. In 2017 the MPI-CBG established new Advanced Imaging Facility which provides users with an access to home-built lattice light sheet setup. All four light sheet setups are now available (together with other imaging technologies) via Biopolis Dresden Imaging Platform (www.biodip.de) to more then 600 users on Dresden campus and beyond.

Affiliation

Biopolis Dresden Imaging Platform, BioDIP Dresden, www.biodip.de

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