

BioImaging advanced and hands-on trainings: FBIAT, FBI-Tech Trainings

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ABSTRACT: France BioImaging (FBI) is a National Infrastructure in Biological Imaging whose activity is based on the tryptych “Innovation-Training-Access”. **Our Rational is based on the need and however lack of efficient training/teaching over the last decade** in the revolutionary field of Biological imaging. While involved in the participation to other national and international training activities, FBI also aimed at developing innovative concepts in order to insure as much as possible the transfer of knowledge to a broad scientific community.

Among examples, FBIAT (France BioImaging Advanced Training) is an advanced-intermediate hands-on Training course on applications of imaging to biological questions, co-organized by FBI with its genuine partner, the GDR MIV. One of the main objectives of FBIAT is to provide insights on how key biological questions can be addressed with advanced imaging techniques. The FBIAT course is organized in 5 to 7 “modules” addressing these issues. Participants choose between those modules. Plenary lectures introduce the theory of specific techniques and how these approaches can solve selected biologically-relevant questions (corresponding to the modules). They are completed by hands-on/experimental sessions in small groups, providing a complete view of the experimental flow, from sample preparation to data analysis. Short presentation of the “results” obtained during the module” by the participants at the end of the training (completed by a e-survey) allow to evaluate the quality of the modules but also what participants really learn from the overall course. Thus, FBIAT is not only a one week course on innovative imaging techniques, but additionally aims at training people on how to build an experimental strategy that uses these techniques, to address a specific biological problem.

FBIAT or other workshops of this kind will not be sufficient if one want to train new experts on more advanced techniques. We will present other examples and more “in depth” type of trainings organized around advanced or emerging technology/methodology and critically based on hands-on (i.e. the FBI-CLEM Correlative Light Electron Microscopy; Photonic super-resolution; Data Analysis...). These trainings (2 or 3 sessions/1 week/year; 10 selected participants) are linked to FBIAT specific “modules”, for which it exists a strong demand of the scientific community. This “FBI-TechTrainings” are meant to recapitulate regularly the more advanced approaches in the diverse fields of biological imaging.

This training workflow, from introduction to innovative technologies up to dedicated and intensive practical course on a targeted approach, constitutes the backbone of the portfolio proposed in the frame of the FBI educational and vocational program. By providing access to top lecturers and training structures, we are open to an international audience. We consider applications from Core F Engineers, PhD students, post-docs, staff scientists and young PIs. The content and modalities of the last FBIAT and “FBI-Tech” courses will be presented. In both cases, we took advantage of the Imaging Core Facilities belonging to FBI and in both types of training we associate industrial partners, from both large companies and SMEs. They are often solicited as trainers.