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| **Short description of CMI laboratory including country where the laboratory is based** | **Contact details of CMI expert** | **Resources available in the CMI laboratory** | **Correlation software that is used and potential software applications:** | **Recommended protocols** | **Open to host STSMs** | **Open for VM** | **Additional comments** |
| Quantitative phase imaging/fluorescence microscopy, Brno, Czech republic | horak@imc.cas.cz | Reactor and devices for synthesis of imaging agents | None | / | Yes | Yes | / |
| Werner Siemens Imaging Center, Germany | Dr Julia Mannheim | Preclinical imaging: PET, (hyperpolarized) MR, PET/MR, CT, SPECT, optical imaging, intravital microscopy, *ex vivo* microscopy, autoradiography, gamma-counter. | Inveon Research Workplace (coregistration and quantitative analysis of multimodality preclinical imaging data) pmod (coregistration, quantitative analysis & kinetic modeling of multimodality preclinical imaging data) matlab spm self-written software (matlab, python, c) for image analysis. | / | Yes | Yes |  / |
| Portable Microscopy, point of care microscopy to use in microfluidic chambers/ microfluidic chips. Computational Microscopy for Digital Inline Holography, Fourier Psychography. Lab located in Albania. Epoka University. (Dr. Arban Uka) | auka@epoka.edu.al | Optical table, CMOS of different properties, LED arrays for programmable illumination, Laser sources for programmable illumination, high resolution objectives. | Adapting single shot brightfield microscopy to Fourier Psychography. | / | Yes | Yes | / |
| Quantitative phase imaging/fluorescence microscopy, Brno, Czech republic | Jaromír Gumulec, Faculty of Medicine, Masaryk University, Kamenice 5, Brno, Czech republic, j.gumulec@med.muni.cz | Coherrence controlled holographic microscope (Telight QPHASE), Optical diffraction tomography (Nanolive 3DCX) + AFM and confocal on core facilities | quantitative phase imaging + fluorescence microscopy. viscoelasticity measurement (10.1101/2021.08.05.455201), deep-learning-based cell death classification (10.1038/s41598-020-58474-w) | 2D culture preferably in ibidi dish eventually with microfluidics according to 10.1101/2021.08.05.45520. | Yes | Maybe | / |
| Our lab studies mechanisms of membrane remodeling in the context of viral infection, trafficking, cell communication and cell-to-cell fusion. We are based at the Weizmann Institute of Science in Israel | Ori Avinoam Tel: +972-8-934-2971 ori.avinoam@weizmann.ac.il | We have access to several transmission and scanning electron microscopes including a Tecnai G2 F20 (200kV, FEG), a Talos Arctica (200kV, FEG), a Titan Krios (300kV, FEG), and a Crossbeam 550 (for FIB-SEM) through the EM unit at WIS, which also offers access to cryo-fluorescence microscopes and sample preparation equipment including a Cryo-CLEM system, a high pressure freezer, an automatic freeze substitution (AFS-2 and a microtome(UC-7) from Leica. | Icy and custom Matlab scripts for image transformation. Amira for segmentation. | In section CLEM of cell monolayers, drosophila salivary gland, and C. elegans. | Yes | Yes | / |
| Biomedical Imaging Algorithms group, Department of Cybernetics, Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic | Jan Kybic <kybic@fel.cvut.cz> | Computing clusters (both CPU and GPU). | Various in house software. | / | Yes | Maybe | We do image processing and analysis but not the imaging itself. |
| The Bordeaux Imaging Center is one of the 7 nodes of France Bioimaging (FBI). The BIC includes three hubs (light microscopy, electron microscopy and plant imaging), and has three main activities: service, training and development. We are 28 engineers covering these activities. | Mónica Fernández Monreal, CLEM activity coordinator. | Confocal, multiphoton, light sheet, superresolution techniques (TIRF, SMLM, STED, AiryScan2), FRET, FLIM, live imaging, wide field, High Content Screening, Transmission EM, Scanning EM, SBF-SEM, Cryo-SEM, Cryo-fixation (HPF, plunge freezing), cryo-sectioning, freeze substitution, EDX, STEM. | ICY (EC-CLEM)- correlation of light and electron microscopy Zeiss (Atlas, Shuttle and find) for AT SerialEM- Transfer of coordinates between cryo-light microscopy to automatize CryoEM tomography acquisition Imaris- Correlation of light and electron microscopy | In Resin FLuorescence, Array Tomography, CryoCLEM | Yes | Yes | / |
| The laboratory is located in Milan, Italy (Università degli Studi di Milano) and we are involved in investigations about neurodevelopment and neurodegenerative disorders in preclinical models of human diseases (cell culture and animal, i.e. zebrafish and mouse). To this aim we take advantage of imaging techniques (optical/fluorescence/confocal and electron microscopic) as well as biochemical and molecular biology assays. The team is composed of a PI, one post-doc, two PhD students and several undergraduate Bachelor and Master students | maura.francolini@unimi.it te. +390250316977 | Instrumentation for Imaging is available at the University Imaging Platform (Unitech NoLimits)-https://www.unimi.it/en/research/places-organizations-and-infrastructures/unitech/nolimits-unitech | None | We had a broad list of protocols for imaging applications that we will be happy to share upon request | Yes | Yes | / |
| Laboratory for Bone Biomechanics, Institute for Biomechanics, ETH Zurich, Switzerland. Our CMI work focuses on mechanobiology in bone adaptation and regeneration. We aim to advance our Local in vivo Environment (LivE) imaging protocol to correlate tissue-level strains from FEA and morphometry to cell-scale and spatial transcriptomics data. | Prof. Dr Ralph Müller, ram@ethz.ch | Time-lapsed in vivo micro-CT images of mouse vertebrae and femurs; end-point ex vivo histological images of the mice; Single cell data from spatial omics tools (protein labels or RNAseq) | In-house Python pipelines to perform 2D-3D correlation of histological and micro-CT images. Applications: identify and track relevant pathways involved in bone adaptation and regeneration in mouse models (with special focus on ageing). | / | Yes | Yes | Slack workspace for a "closer" interaction among participants (group leaders, ECIs of each lab). |
| The lab is located in Jena, Germany. We have unique comprehensive Raman and infrared spectroscopic infrastructure, and extensive experience in bioanalytical applications. Further techniques such as multiphoton microscopy and force microscopy are available are available at partner labs within the institute. | Christoph Krafft, christoph.krafft@leibniz-ipht.de | The lab is equipped with Raman microspectrometers with excitation wavelengths between 458 and 1064 nm, and infrared microspectrometers with thermal source excitation and FT-based-detection, tunable quantum cascade laser excitation (900-1800 cm-1) with single channel detection, and tunable quantum cascade laser excitation (1000-1800, 2800-3000 cm-1) with optical photothermal detection. All systems offer imaging functionalities down to the diffraction limit. | Former and current co-workers developed toolboxes running under Matlab, R (HyperSpec available at Github), and also Python. The codes can be adapted to several data formats. The department "Photonic Data Science" at IPHT offers further resources including artificial intelligence and machine learning concepts. | General protocols were published by the IR and Raman community (e.g. doi:10.1038/nprot.2016.03). Sample preparation is minimal such as unstained cryosections of tissues, tissues biopsies covered by a substrate, dried cells or cells in buffer/media with or without fixation. | Depends on pandemic situation | Maybe | The head of the department Spectroscopy/Imaging Jürgen Popp can also be contacted: juergen.popp@leibniz-ipht.de |
| The Advanced Light and Electron Microscopy BioImaging Center (ALEMBIC) is located at the San Raffaele scientific institute (Milan, Italy). ALEMBIC offers a wide range of imaging technologies and expertise in the field of light and electron microscopy. For details see https://research.hsr.it/en/core-facilities/alembic.html. | Andrea Raimondi ALEMBIC, Experimental Imaging Center, IRCCS San Raffaele Scientific Institute, DIBIT-1, S2 B4A (Room 22), Via Olgettina 58, 20132 Milano, ITALY Phone: +39 02 2643 6445 mail: raimondi.andrea@hsr.it | Equipment for EM sample preparation at RT or low temperature. Ultramicrotomes for RT or cryo sectioning. A 120 kV TEM (Talos L120C) equipped with a tomography holder correlated with tomography (tomography, FEI) and large scale acquisition (MAPS, FEI) softwares. Dedicate PC for image analysis. | We use as correlation software ICY ec-CLEM, Imagej Bigwarp, and IMOD program utilities mainly to align EM to fluorescence images. | We master two types of correlative approaches: 1) pre-embedding CLEM of cultures cells grown on gridded coverslips. 2) CLEM of cryostast or Tokuyasu frozen sections from tissues | Depends on pandemic situation | Yes | We are currently developing additional CLEM approaches based on section CLEM and/or multiplex imaging. We are willing to collaborate with network participants interested in these approaches. |
| The µNEURO Research Centre of Excellence at the University of Antwerp, Belgium combines experts in fundamental, preclinical and clinical research on neurological diseases and quantitative multimodal imaging and analysis experts. The µNEURO consortium includes the Antwerp Centre for Advanced Microscopy, the Bio-imaging Lab (preclinical MRI), the Molecular Imaging Center Antwerp (preclinical and clinical PET/SPECT), and imec-Vision Lab (image reconstruction, processing and analysis methods). One of our central aims is to develop and integrate multi-scale and multi-modal interrogation methods, with a focus on neuro-imaging. More information on our website: https://www.uantwerpen.be/en/research-groups/muneuro/ | Dr. Liesbeth Vanherp, Liesbeth.vanherp@uantwerpen.beResearch manager µNEURO | Antwerp Centre for Advanced microscopy: 2D and 3D fluorescence imaging (widefield and confocal), Whole organ(oid) imaging (light sheet), Live cell and functional imaging (spinning disk), High-throughput imaging (automated widefield), Virtual pathology (slide scanning), Photomanipulation and–ablation, Laser microdissection and spatial molecular interrogation, Ultrastructural and topographical imaging (TEM and SEM). More info: https://www.uantwerpen.be/en/research-groups/celw/acam/ Bio-imaging Lab: four MRI systems for preclinical research (2 7T, 9.4T, 4.7T), bioluminescence imaging and electrophysiology. More info: https://www.uantwerpen.be/en/research-groups/bio-imaging-lab/ Molecular Imaging Center Antwerp: 2 preclinical PET/CT, 1 preclinical PET/SPECT/CT, HPLC, Gamma counter, autoradiography, cyclotron and hot cell units, access to clinical scanners. More info: https://www.uantwerpen.be/en/research-groups/mica/ Imec-Vision Lab: development of novel image reconstruction, processing and analysis methods, applied in the domain of Magnetic Resonance Imaging and computed tomography. More info: https://visielab.uantwerpen.be/ | Our consortium is interested in integration of big image datasets acquired with different modalities, and in tackling challenges associated with registration, correlation and visualisation. Examples of the broad range of previous work include:\*Cross-modal imaging registration of MRI and light sheet imaging of cleared mouse brains (using Allen Brain Atlas and Elastix) https://doi.org/10.1016/j.nbd.2020.105011 \*Coregistration of preclinical PET and MRI for spatial normalization (using PMOD) https://doi.org/10.1371/journal.pone.0206613 \*High-throughput analysis of synaptic activity in Electrically Stimulated Neuronal Cultures using fluorescence microscopy (using in-house Stimulated Synapse Segmentation Tool (S3T)) https://doi.org/10.1007/s12021-021-09536-5 \*Combining the information of fMRI and light sheet microscopy of the mouse brain to study the effects of DREADDs https://doi.org/10.1016/j.neuroimage.2020.117088 \*Automated brain region annotation for brain tissue slices (in-house tool SliceMap): https://doi.org/10.1093/bioinformatics/btx658 \*Coregistration of diffusion tensor and diffusion kurtosis MRI and immunohistochemistry in the mouse brain: https://doi.org/10.1186/s13195-017-0329-8 | Broad range, see previous question for examples | Depends on pandemic situation | Maybe | / |
| The BioSciences Screening scientific platform, located at i3S - Institute for Research and Innovation in Health, Porto, Portugal, provides to the internal and external scientific community and industry, state of the art instruments and competence to solve challenging (biological) questions with high throughput and high content technologies. Highly qualified scientists with expertise on project evaluation, assay development, liquid handling, automated microscopy, multimode microplate readers, image and data analysis, work with project teams to successfully run medium-to-high throughput screens. Examples are genetic and chemical screens for the purpose of target and/or drug discovery. The platform facilitates access to genetic and compounds screening libraries and is actively establishing collaborations in order to receive and expand its own libraries. The BioSciences Screening platform is part of and coordinates the PT-OPENSCREEN - a nationwide network of chemistry and biology institutes providing compound synthesis and cell and biochemical assays for screening, compound optimization and follow-up activity studies. Furthermore, is part of the PPBI - Portuguese Platform of BioImaging and several COST actions.  | André Maia, PhD - Head - andre.maia@i3s.up.pt Rua Alfredo Allen, 208 | 4200-135 Porto, Portugal Floor 0 | Lab 008 S3 Telf: +351 226 074 981 | INCELL Analyzer 2000 Synergy 2 Janus Automated Workstation Multidrop Combi ALPS 50 Thermo Sealer Cell culture facility (exclusive for the platform) | High-Content image analysis software: Cell Profiler, INCELL Investigator | / | Yes | Yes | We are in the process of acquiring a high-throughput screening workstation including a state-of-art confocal high-content microscope coupled with an automated incubator. Soon these equipment will be also available and can be added to the platform portfolio.  |
| Benoît Zuber's lab, Institute of Anatomy, University of Bern | Benoît Zuber | time-resolved plunge freezing, high pressure freezing, freeze-substitution, CEMOVIS, cryo-FIB-SEM, SBF-SEM, cryo-fluorescence microscopy, x-ray microscopy | Mostly done manually (identify regions of interest in LM and find them in EM) | / | No | No | / |
| The laboratory GEPEA (UMR CNRS 6144) from the University of Nantes-France; is a large joined research unit with the CNRS; it has received an A+ rating, the highest rate delivered only for French top-level laboratories. The business core of GEPEA is the scientific research in bioprocess engineering applied to microalgae and on food engineering. The TEAM-LRSY of GEPEA based in the city of la Roche sur Yon (north west of France) who would like participate to CMI database has a long-term expertise in biosensors applied in environmental and agrifood fields. The team has solid scientific skills in optical and non-invasive imaging techniques, and in multivariate statistics necessary for the comprehension and the exploitation of generated data. | Antony Ali ASSAF, Enseignant–chercheur, section 31 Université de Nantes UMR CNRS GEPEA 6144 CBAC Campus de la Courtaisière IUT de La Roche sur Yon, Dep: Génie Biologique 18, Bd Gaston Defferre CS 50020 85035 La Roche sur Yon Cedex FRANCE 02.53.80.41.57 ali.assaf1@univ-nantes.fr | Confocal System With CARS Imaging: Leica TCS SP8 CARS (CARS = Coherent Anti-Stokes Raman Scattering) + confocal Raman microscopy | LAS X Life Science, Matlab | / | Yes  | Maybe | / |
| Dept. Physics, Mathematics and Biophysics, Lithuanian University of Health Sciences. Biomedical signal and image analysis group develops custom algorithms for multimodal biomedical image processing. | algimantas.krisciukaitis@lsmuni.lt; robertas.petrolis@lsmuni.lt | Local computation resources (AMD Ryzen Threadripper 3970X 32-Core Processor 3.70 GHz with GPU - AMD Radeon RX 6700 XT), access to Lithuanian computational clusters. | Experience in elaboration of custom biomedical image processing algorithms based on multivariate analysis and deep learning, oriented to multimodal imaging. | / | Depends on pandemic situation | Yes | / |
| Centre for Ultrastructural Imaging, King's Collge London, UK please visit https://cui.kcl.ac.uk/ for details | Pedro Machado pedro.machado@kcl.ac.uk | TEM and SEM room temperature and cryo, SBF-SEM, cryo FIB-SEM | ec-CLEM, ORS Dragonfly | In resin/on-section CLEM, Luini method, etc. We can support CLEM workflows from room temperature to cryo. | Depends on pandemic situation | Yes | I suggest that people interested in multimodal imaging of cells and tissues in which one of the modalities is EM to join this community: https://join.slack.com/t/emofcelltissueorg/shared\_invite/zt-sjbxgis1-fW7mQk2m0DUuJQmz\_f7kJQ |
| I am working in Pasteur Institut, Paris - France. I'm in The Cell Biology and Infection department. I 'm autonomous user of the electron microscopy platform of the Intitut.  | Christine Girard-Blanc : girardbc@pasteur.fr - Research engineer | Cellular biology and immunofluorescence - Tokuyasu cryosectioning for immunolabeling - Micropatterning on Primo for cryo-electron tomography - Cryofixation on Vitrobot and Leica EMGP - Cellular correlative light and electron microscopy at room temperature and in cryo conditions - Data aquisition on TFS Glacios cryo-electron microscope for single particle and cryo-tomography | Serial EM - Midas | / | No | Maybe | / |
| cell culture labo | jacques.mazzega@univ-grenoble-alpes.fr | microscopes, cell culture equipment | zeiss software | fiduciary point | Yes | Yes | / |
| Core Facility Preclincal Molecular Imaging, Department of Nuclear Medicine, Hannover Medical School, Hannover, Germany.  | bankstahl.jens@mh-hannover.de | Preclinical PET/CT, SPECT/CT, Autoradiography up to biosafety level 2. | PMOD, Siemens IRW,  | / | Yes | Yes | / |
| The MicroPICell platform in Nantes, France, offers a complete integrated offer in cell and tissue imaging to the entire scientific community in the Loire Valley but also outside, whether academic or industrial. Services range from sample preparation to advanced light microscopy observation and image data management and analysis services. | perrine.paul-gilloteaux@univ-nantes.fr | Soft tissue sample preparation, multiplexing (codex and opal), super resolution by SIM, HREM (serial block face microtome on paraffin or cryostat ), MEB, microdissector with IA automation, confocal, ionic measurements, virtual slide scanning, HCS, holotomography (cellular field of view no staining), OCT and D-FFoct, correlation software expertise | ec-clem (manual or automated) , construction of complex correlate workflows, error estimation | / | Depends on pandemic situatuation | Yes | part of France Bio Imaging and Eurobioimaging node |
| Imaging of viruses by light microscopy is essential to uncover the nature of known and emerging viruses in the search for new ways to treat viral diseases and to deepen understanding of virus-host interactions. At the Langevin Institute, ESPCI Paris, we recently developed a new multimodal microscopy method that combines the advantages of common channel interferometry and fluorescence microscopy. With this tool, we are able to identify, quantify and characterize, discriminate most of the nanoparticles present in complex biological solutions containing viruses, prokaryotic and eukaryotic vesicles and other biotic agents. | Claude.Boccara@espci.fr, houda.bey@espci.fr | Instrumentation for Imaging | Matlab scripts  | We had a broad list of protocols for imaging applications that we will be happy to share upon reques | Yes | Yes | Yes |