ACTIVITY REPORT 2020

FRANCE-BIOIMAGING (FBI)
FRENCH NATIONAL RESEARCH INFRASTRUCTURE FOR BIOLOGICAL IMAGING

www.france-bioimaging.org
@FR_BioImaging
France BioImaging
MISSION

FBI is the National Infrastructure in Biology and Health (INBS) in the field of biological imaging. Our primary mission is to develop and provide access to innovative instruments and imaging technologies to scientists. France-BioImaging is a 2011 Laureate of the national Programme "Investissement d'Avenir" (PIA-ANR), and is funded under this program until 2025.

VISION

Our philosophy is to associate leading R&D research teams with service facilities. Hence, FBI is at the crossroads between molecular and cell biology, biophysics and engineering, mathematics and informatics. In 2020, this unique infrastructure gathers together 18 large biological imaging facilities and 34 R&D teams specialized in imaging. It is structured in 6 local Nodes and one transversal Node dedicated to bioimage informatics.

GOALS

France-BioImaging aims at creating the most efficient adoption of the latest advances in all technologies and methods related to microscopy, by the users of the imaging facilities. These technologies and methods, reinforced by a strong support in computational analysis, provide quantitative measures and integrative understanding of a wide range of cell and tissue activities in biological models, from the simplest, to small animals in normal and pathological situations. The trystic “Innovation, Training, Access” is the backbone of our activities. Thus, we invent and disseminate new imaging technologies, participate to national and international educational and training programs, and make them accessible to national and international users of both the academic and private sectors.

contact@france-bioimaging.org
FBI ACTIVITY REPORT 2020

THE INFRASTRUCTURE

With the integration of the new Bretagne-Loire Node in 2020, FBI is now located in 6 local and one transversal Nodes, with each its specific scientific and technological expertise (see below). FBI gathers 18 large biological imaging facilities and 34 R&D laboratories specialized in imaging. Indeed, in order to develop and provide access to innovative instruments and imaging technologies to scientists, FBI strategy is to associate leading R&D research teams with service facilities.

There are 391 people working for FBI (199 engineers/researchers in the core facilities and 192 in the R&D teams).

9 MAIN AREAS OF EXPERTISE ARE AVAILABLE WITHIN FBI

- Single Particle Tracking & Super Resolution
- Multimodal & Quantitative fluorescence Microscopies
- Cryo Electron Microscopy for Cell Biology
- Correlative Microscopy
- New Contrast & In-Depth Imaging
- Multiscale Light Sheet Imaging
- High Throughput & High Content Screening
- Probe development, Optomanipulation & Optogenetics
- BioImage Informatics, Image Processing & Data Management

2 MAIN CATEGORIES OF INSTRUMENTS (>350 SET-UPS)

Regular Light Microscopy Imaging Systems
Including regular and automated wide field microscopy, laser scanning confocal microscopes, spinning disk confocal microscopes, light sheet microscopes,…

Advanced and Innovative Imaging Systems
Including set-ups for high-resolution & single molecule tracking, electron microscopy & multimodal imaging, confocal with innovative modalities, fluorescence spectroscopy in microscopy, in depth & intra-vital imaging, high throughput & high content screening, multiplexing & intelligent imaging.

1 FBI-IMAGE ANALYSIS HUB (IPDM)
Gathering services for bioimage informatics, image processing, deep learning, data analysis, data management.
Euro-BioImaging ERIC (EuBI) is the European Research Infrastructure for Biological and Biomedical Imaging, awarded the landmark ERIC status by ESFRI and thus recognized as the implemented reference infrastructure in the imaging field. Euro-BioImaging was established as an ERIC at the end of 2019 and in 2020 it comprises 16 Member countries and 1 Observer. Euro-BioImaging is a distributed infrastructure that builds on a set of already existing national and international centres of excellence in imaging technologies: the Euro-BioImaging Nodes.

These Nodes provide physical or remote access to imaging technologies, deliver their training and support the users at all the stages of their research projects with their experienced staff.

The Nodes are jointly coordinated by the Euro-BioImaging Hub, which provides general supporting services including the management of user access, training coordination and services for image data.

France officially became a founding member of the Euro-Bioimaging research infrastructure in March 2019. France-Bioimaging has been an active collaborator in the development of the future infrastructure since its inception (2009) as well as during the preparatory phases of the Euro-BioImaging ESFRI project (2010 – 2018), and has been a “Node Candidate” of the project between 2013 and 2019. France-BioImaging was officially ratified as Euro-BioImaging French Node in 2019, opening the premises of France-BioImaging core facilities to external users for access and training activities.

Access to Euro-BioImaging French node services takes place through the Euro-BioImaging web portal at www.eurobioimaging.eu. This portal should be used by all national and international users from outside FBI's perimeter.

In November 2020, the new France-BioImaging Bretagne-Loire Node was officially included in Euro-BioImaging perimeter.
PARTNER OF GLOBAL BIOIMAGING NETWORK

Global BioImaging (GBI) is an international network of imaging infrastructures and communities, which was initiated in 2015 by a European funded project. Recognizing that scientific, technical and data challenges are universal rather than restricted by geographical boundaries, it brings together imaging facility operators and technical staff, scientists, managers and science policy officers from around the globe, to network, exchange experiences and build capacity internationally. It provides a unique opportunity for international discussion and cooperation to tackle the practical challenges as well as the strategic questions linked to operating open access infrastructures for cutting edge imaging technologies in life sciences.

Today, GBI gathers ten National Communities on top of the European Consortium represented by the ERIC-EuBI.

In the previous phase (2015-2018), France-BioImaging actively participated to the Work Package 3 “Training Courses for Facility staff”, which aimed at publishing international recommendations for imaging facility staff training. Since 2019, France-BioImaging is involved in the Working Group on training, whose aim is to build and structure GBI training resource.

France-BioImaging is also actively participating in the GBI societal impact of imaging infrastructures working group, whose work led to the publication in 2020 of a white paper on International recommendation for measuring imaging core facility impact: Key Performance and Social Economic Indicators.
BORDEAUX NODE

• Super Resolution
• 3D Tomography correlative microcopy
• Neuroscience
• Plant physiology

1 Core facility: Bordeaux Imaging Center
8 R&D Teams

2020 HIGHLIGHTS


• The BIC organized the 4th NEUBIAS conference (300 participants over 6 days, www.neubias.org). NEUBIAS brings together life-scientists, bioimage analysts, microscopists, and image analysis developers from Europe and international partner countries in Australia, Singapore, Brazil and the USA

• The BIC acquired a microscope allowing several acquisition modalities (widefield, confocal and airy scan) and combining high throughput.
Bretagne-Loire Node

- Microscopy for preclinical research
- Cancer Research
- Regenerative Medicine
- Physiopathology

4 Core facilities: H2P2 - MicroPICell – Mric – APEX
5 R&D Teams

2020 HIGHLIGHTS

- Technology transfer on the Mric platform: installation of the RIM prototype (super-resolved imaging using random illumination) – (T. Mangeat, developed on the basis of a collaboration with the Fresnel Institute, Marseille and LS2N, Nantes).

- Development of multiplexed technologies by multiplex OPAL methods and confocal spectral imaging (MicroPICell) and automatic cycles (CODEX system on MicroPICell with labex IGO and Cell Dive system on H2P2).

- Development and availability on the MicroPICell platform of a home-made system in collaboration with the start-up Kaer labs allowing serial section imaging of unlabeled samples and correlation of histological sections with the 3D volume.
ILE DE FRANCE-SUD NODE

- In vivo in toto 3D+t imaging
- Non-linear contrasts
- Developmental biology
- Plant cell biology

2 Core facilities: BioEmergences - Imagerie GIF
2 R&D Teams

2020 HIGHLIGHTS

- Advances in multiphoton light-sheet microscopy for fast and deep imaging on the Morphoscope platform.
- Spatiotemporal pattern of activation and division events in neural stem cells by Two-photon intravital imaging on the Morphoscope Platform.
- Optimization of the axial localization and resolution in super resolution approaches by the Nano-Bio Imagerie group.
- A new workflow involving automated high-speed acquisition in confocal microscopy mode for multimodal approaches of symbiosis processes.
MARSEILLE NODE

- Multimodal Imaging
- New contrasts
- Immunology
- Developmental biology

1 Core facility: PICsL
3 R&D Teams

2020 HIGHLIGHTS

- A laser-based assay for wound healing and quantitative imaging reveal a link between tissue repair and immune response

- Technological transfer: development/transfer of an original instrumentation (RIM: Random illumination Microscopy) on the Luminy site allowing super-resolved fluorescence imaging. This method originally developed at the Fresnel Institute and recently validated by the Integrative Biology Center of Toulouse has advantages over structured illumination and Airy scan techniques to access super-resolved fluorescence imaging in scattering media.
MONTPELLIER NODE

- Functional super-resolution
- High-throughput microscopies
- Genome organization
- Gene expression

3 Core facilities: IPAM IGF - MRI - PIBBS MARS&AFM
3 R&D Teams

2020 HIGHLIGHTS

- We combined live embryo light-sheet imaging, advanced image analysis and mathematical modelling to suggest that the spatial range of cell-cell communication defines the scale of embryonic reproducibility
  - Contact area-dependent cell communication and the morphological invariance of ascidian embryogenesis, Léo Guignard et al., Science (2020) 369, eaar5663.

- By using cellular in vivo imaging, this international study has unveiled the potential of monomeric nanobodies in molecular tumor imaging and targeted cancer therapies.

- A step-by-step protocol for Hi-M, Hi-M, a technology that enables the sequential labeling, 3D imaging and localization of multiple genomic DNA loci within whole, intact Drosophila embryos,
PARIS CENTRE NODE

- 3D CLEM
- High Content Screening
- Preclinical imaging
- Optogenetics & Biosensors
- Cell biology
- Host-Pathogens
- Cancer Research

6 Core facilities: IMACHEM IBENS - IMAG’IC - IMAGOSEINE - PICT - UTeChS PBI - UTeChS UBI

10 R&D Teams

2020 HIGHLIGHTS

- Demonstration of the relevance of Speed OPIOM (Out-of-Phase Imaging after Optical Modulation) for remote imaging of RSFPs (Reversibly Photoswitchable Fluorescent Proteins) in the context of plant phenotyping.
- Establishment of a new pipeline to study rare cellular events occurring in the mammary gland, by combining orthotopic transplantation of mammary organoids with the uDISCO organ size reduction and clearing method.
- Example of combination of light microscopy, conventional EM; immune EM and electron tomography to decipher a complex cellular biomechanical signaling.
- Application of micropatterning, traction force microscopy, quantitative live cell imaging and modeling to a cellular and multicellular biological question.
IPDM-BIOIMAGE INFORMATICS NODE

- Bioimage informatics
- Data management
- Software plateforms
- Very large data management & Mining
- AI and data visualization

1 Service: Image Analysis HUB

3 IPDM-Core R&D Teams
10 IPDM-associated R&D Teams

2020 HIGHLIGHTS

- Development of a Roadmap for data management and analysis around 3 key challenges: (1) Image data management; (2) Artificial intelligence (AI) and image analysis; (3) Visualization of high-dimensional image datasets. 7.5 engineers will be hired in 2021/2022 to implement this roadmap.
4 FBI STRUCTURES CARRY OUT THE TECHNOLOGICAL WATCH

- Industrial committee (15 private sector companies)
- Technological Watch committee (GdR Imabio, RIME, RTMFM)
- Internal user committee
- External user committee

8 WORKING GROUPS STIMULATE SCIENTIFIC ANIMATION AND COLLABORATIONS

- WG1a: Single molecule tracking & Super resolution
- WG1b: Multiscale light sheet imaging
- WG1c: Multiscale & correlative microscopy
- WG1d: New contrast & in-depth imaging
- WG2: High throughput & high content screening
- WG3: Probe development, Optomanipulation & Optogenetics
- WG4: Bioimage informatics, image processing & data management
- WG5: Preclinical and intravital microscopy (in creation)
In 2020, FBI appointed 2 mission officers for “Data management” and, with WG-IPDM, built a roadmap for data management with the recruitment of 7.5 engineers planned for 2021/2022.

In 2020, the WG1b of FBI generated a roadmap to develop next-generation Light Sheet Microscopy. It targets selected key issues such as multiphoton-LSM for large specimens, high speed/high resolution resolution LSM, long-term 3D single molecule tracking (soSPIM-MFM), and high-throughput screening of medium-sized multicellular objects (soSPIM-HCS).

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**PROMOTING TECHNOLOGY TRANSFER**

- Appointment of a "Tech Transfer" mission officer
- Preparation of the 2021 Internal call for "Technology transfer from R&D teams to facilities" (mature technologies; 5 funded projects) and of the 2022 outreaching call: "Novel technologies addressing external user needs" (immature technologies needing further developments).
- These actions are part of a long-term strategy for the infrastructure.

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**KEY DATA (2020)**

- 3 Patents (41 patents registered since 2011)
- 10 collaboration contracts with companies
- 2 start up creations (YMETRY, AVATR MEDICAL)
- 2011-2020: 65 Tech transfers from a R&D team to a facility; 27 Tech transfers to industry.
IN 2020

- 53 Initial training courses (bachelors, masters)
- 19 Institutional trainings
- 19 organizations or co-organizations of events (symposium, conference, webinar)
- 7 financial participations for events (national & international thematic school, congress, workshop)
- FBI Bordeaux Node organized the 4th NeuBIAS Conference and two training schools in Biolmaging Analysis (one aimed at early career investigators and the other at bioimage analysts).

COVID-19 IMPACT ON TRAINING ACTIVITIES

The COVID-19 pandemic and the resulting restrictions impacted many processes, in particular training activities. Several France-Biolmaging Nodes transitioned their training courses into remote and virtual formats. This was the case for the training on Light Sheet Fluorescence Microscopy led by the corresponding Working Group (WG1b).

This training should have been an on-site training with practical courses and technical demonstrations, but it had to be cancelled. The instructors instead organized the first France-Biolmaging online training (held in 2021) and for this, prepared several videos and online training resources on Light-Sheet Fluorescence Microscopy.

ONGOING: FBI TRAINING PASSPORT

In 2019, France-Biolmaging launched the construction of a "Training Passport", to propose a streamlined, integrated and progressive training portfolio, with theoretical and practical modules, based on the extensive resources already available and, importantly, allowing recognition, validation and accreditation.

The Training Passport is a tool to train the next generation of scientists in life science imaging, teach and train users on emerging technologies and ensure an up-to-date training for imaging facility staff. The construction of the Training Passport is a collaborative work led by the FBI WG-Core facility staff and gathering members of professional networks (Sfµ, RIME, RTMFM, GDR IMABIO) and of FBI Industrial Committee.

In 2020, a mission officer “Training” was appointed to coordinate the development and implementation of the Training Passport.
ACCESS

For FBI users, access is via local reservation tools (in 2021, OpenIRIS will be deployed on pilot sites and then made available to interested facilities).

For external users, access is via the Euro-BioImaging web portal: https://www.eurobioimaging.eu/service

In 2020, 10 external users were registered via the EuBI web portal.

FBI facilitates the use of its infrastructure and access to high technology by offering external users a waiver of facility costs (up to 750€/week).

In 2020, co-authors of publications citing FBI came from 24 foreign countries on 4 continents.

For private companies, a single contact (contact@france-bioimagonig.org) is at their disposal to answer their requests.

THE WG "CORE FACILITY" AND THE MISSION OFFICER "FACILITY INTEGRATION & E-MANAGEMENT" WORK TOGETHER TO DEVELOP TOOLS TO IMPROVE FACILITY SERVICES.

NUMBER OF PUBLICATIONS ACKNOWLEDGING FBI BY COUNTRY OF CO-AUTHORS

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SOCIAL IMPACT

Highlights on how the imaging technologies and image analysis tools available on FBI nodes have been used to answer timely research questions, including COVID, degenerative diseases, virus and parasite research, and also plant biology.

COVID-19

CONSEQUENCES OF SARS-COV-2 INFECTION ON CELL FUNCTION AND THE ANTIVIRAL ROLE OF INNATE IMMUNITY

Innate immunity is the fastest growing component of the immune system, and its role in SARS-CoV-2 infections remains poorly characterized. A few hours after infection, the body emits an alarm signal (interferon) that allows cells not yet infected to produce antiviral proteins. This phenomenon takes place well before the production of neutralizing antibodies. At the Institut Pasteur UtechS Photonic BioImaging (UPBI) facility, researchers from Institut Pasteur and CNRS have studied the consequences of SARS-CoV-2 infection on cell function and the antiviral role of innate immunity. They show, using real-time video-microscopy, that infected cells in culture can fuse with neighboring cells and die after forming giant cells composed of tens of cells, called “syncytia”. However, interferon counteracts this phenomenon by inducing cellular proteins that prevent the fusion of infected cells. These results demonstrate the antiviral effect of innate immunity.

Buchrieser J. et al., EMBO J (2020), Syncytia formation by SARS-CoV-2 infected cells.
doi.org/10.15252/embj.2020106267

HEPATITIS B VIRUS

INNOVATIVE IMAGING APPROACH TO INVESTIGATE DYNAMICS OF VIRUS PARTICLE ASSEMBLY

Chronic infection by hepatitis B virus (HBV) is a major public health problem with more than 250 millions of people chronically infected worldwide who have a high risk to develop cirrhosis and hepatocellular carcinoma. That is why novel methodologies are being developed to study different aspects of the virus life cycle. MRic facility in Rennes worked with researchers from the University of Tours and developed a dedicated methodology to investigate one of the core elements of the HBV virus - the HBV capsid - in infected cells. This methodology combines fluorescence lifetime imaging microscopy (FLIM)/Förster resonance energy transfer (FRET), fluorescence correlation spectroscopy (FCS) and transmission electron microscopy approaches and offers an innovative way to investigate HBV capsid formation.

doi.org/10.1016/j.jmb.2020.04.026

Hepatitis B virus. Computer illustration by Louise Hughes showing the structure of the protein coat (capsid) surrounding a hepatitis B virus (HBV) particle (virus). HBV particles (virions) consist of an outer lipid (fatty) envelope and an icosahedral protein core (capsid) enclosing DNA (deoxyribonucleic acid), the genetic material of the virus.
**PARASITOLOGY**

**A NEW QUANTITATIVE INSIGHT INTO MALARIA PARASITE INVASION IN ANOPHELES MOSQUITOES**

Human malaria is a vector-borne human infectious disease caused by protozoan parasites of Plasmodium species. It is widespread in tropical and subtropical regions, including parts of the Americas, Asia, and Africa. Malaria-causing Plasmodium parasites are transmitted by Anopheles mosquitoes. Among more than 400 of known Anopheles species, only 40 are vectors of human malaria. A collaborative work between the Paris Centre, Bretagne-Loire and IPDM Nodes provides a new quantitative insight into malaria parasite invasion in African and Indian Anopheles species and proposes that the mosquito complement-like system contributes to the species-specific dynamics of Plasmodium invasion. They used transgenic mosquitoes of two Anopheles species infected with Plasmodium parasite to track parasite passage through the mosquito tissues at high spatial resolution.


doi.org/10.1371/journal.ppat.1008739.g001

**ALZHEIMER’S DISEASE**

**HIGH-DENSITY SINGLE PARTICLE TRACKING ALLOWS BETTER UNDERSTANDING OF ENZYME MECHANISMS LINKED TO THE ALZHEIMER’S DISEASE**

γ-secretase enzyme is essential for many biological processes and its dysregulation is linked to disease, including cancer and Alzheimer’s disease. Therefore, understanding the regulation of its activity is of major importance to improve drug design and develop novel therapeutics. While its structure is atomically resolved, γ-secretase localization in the membrane in situ relies mostly on biochemical data. Researchers from the VIB-KU Leuven Center for Brain and Disease collaborated with the Bordeaux Node to study γ-secretase distribution and dynamics in the membrane using super-resolution microscopy. This study will pave the way for better characterizing of the distribution, associations and dynamics of γ-secretase in the synapse to give a much more detailed insight on the molecular mechanisms driving the Alzheimer’s disease.


doi.org/10.7554/eLife.56679
In the course of their growth and development, plants have to constantly perceive and react to their environment. This phenomenon is particularly fascinating in the case of the root system which, throughout the life of the plant, explores the different soil horizons. This is achieved in root cells by the coordination of complex combinatorial signaling networks. To better understand these networks, a researcher from Montpellier SupAgro used the super resolution and single particle tracking microscopes available on the PIIBBS facility to image the mechanisms tacking place in living root cells. Through a collaboration with the group of Marcelo Nollmann, the data acquisition procedures were adapted and improved to take into account the specificity of this cell type. Dedicated softwares for data analyses were developed as well. These approaches were applied to decipher the dynamics and assembly of proteins at the plant plasma membrane.

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**FBI ACTIVITY REPORT 2020**

**PLANT BIOLOGY**

**DECIPHERING PLANT GROWTH AND DEVELOPMENT USING SINGLE PARTICLE TRACKING AND SUPERRESOLUTION IMAGING ON ROOT CELLS**

In the course of their growth and development, plants have to constantly perceive and react to their environment. This phenomenon is particularly fascinating in the case of the root system which, throughout the life of the plant, explores the different soil horizons. This is achieved in root cells by the coordination of complex combinatorial signaling networks. To better understand these networks, a researcher from Montpellier SupAgro used the super resolution and single particle tracking microscopes available on the PIIBBS facility to image the mechanisms tacking place in living root cells. Through a collaboration with the group of Marcelo Nollmann, the data acquisition procedures were adapted and improved to take into account the specificity of this cell type. Dedicated softwares for data analyses were developed as well. These approaches were applied to decipher the dynamics and assembly of proteins at the plant plasma membrane.

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**INFECTIOLOGY**

**REOVIRUS INTRACELLULAR RELEASE MECHANISM IS ELUCIDATED IN 3D WITH COMBINED CRYO-IMAGING**

Imaging of biological matter across resolution scales entails the challenge of preserving the direct and unambiguous correlation of subject features from the macroscopic to the microscopic level. A collaborative project between the Paris Centre and Bretagne Loire Nodes and the Diamond Lightsource UK developed an integrated, user-friendly platform for 3D correlative imaging of cells infected with the reovirus. This platform combined cryo-SIM (cryo-structured illumination microscopy), which allows super-resolution fluorescence imaging in cryo-samples, with soft X-ray tomography. Combining these methods allowed researchers to investigate the release pathway of the virus from its host cell.


doi.org/10.1016/j.cell.2020.05.051

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**Tracking reovirus endosomal trafficking and escape. Image from Kounatidis I., et al., Cell (2020)**

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**Smokvanska et al., Curr Biol. (2020), A Plasma Membrane Nanodomain Ensures Signal Specificity during Osmotic Signaling in Plants**

doi.org/10.1016/j.cub.2020.09.013
In 2020, the Executive Board appointed 7 Mission officers:
- R&D Tech transfer
- Facility Integration & e-management
- Needs of users outside of FBI perimeter
- Training
- Structuring of the Parisian nodes
- Inter-infrastructure relations
- Image data management

12 meetings of the Executive Board

Preparation of the 2021 SAB meeting (including reviewing applications for 7 new core facilities and 18 new R&D teams)

**KEY INDICATORS OF ACTIVITIES (2020)**

- Publications: 138 (Staff), 430 (Users), 3.6% published in journal with IF>30
- Projects processed: 2410
- Data produced: 3367 TB

FBI is funded by the Programme d'Investissements d'Avenir (PIA) since 2012 (grant Agence Nationale de la Recherche, number ANR-10-INBS-04, 26M€). Successfully evaluated in 2019 by the ANR, the additional funding (3,2M€) allows the development of new projects for the 2020-2024 period. The main funding actions planned are:

- Support for external user access to FBI core facilities: 290 k€
- Working groups, meetings, technology workshops: 850 k€
- Training activities: 275 k€
- Data management & image analysis: 430 k€
- Technology transfer: 770 k€
COMMUNICATION & OUTREACH

In 2020, FBI worked on a new communication plan and started to use new communication tools in order to broaden its outreach.

FRANCE BIOIMAGING WEBSITE

12,351 views and 30 posts in 2020
Our strategy focused on creating content for the website – in particular “News” posts- and attracting visitors, primarily using social media and our newsletter to increase traffic.

LAUNCH OF FBI TWITTER ACCOUNT @FR_BIOIMAGING

Twitter has been an important addition to our communication strategy. We use Twitter to interact with FBI facilities, members and partners, other national and international research infrastructures, give visibility to imaging scientists, to our Nodes, and advertise our services and activities. Our main objective in 2020 was to boost the information flow between the infrastructure and the broad bio-imaging national and international community and make France BioImaging’s initiatives known. The activity of France BioImaging also grew thanks to EuroBioImaging’s participation in promoting EuBI French Node and its community.

LAUNCH OF A NEW VERSION OF THE FBI NEWSLETTER

The France BioImaging newsletter is now a monthly publication. In 2020, topics included presenting the infrastructure and its services, like the external user access, but also news from our facilities and the research and development being undertaken in our Nodes. It participates directly in the promotion of our members’ expertise and of the core facility staff’s & researchers’ work. We also announced the launch of our new Twitter account and the France BioImaging 6th Annual Meeting (2021). The newsletter successfully drove more traffic to our website.

All past newsletters are available here.
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For more information about FBI please contact:
contact@france-bioimaging.org

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