



**European University Alliance for Global Health -
Transformation through Joint Research & Innovation Action**

Deliverable 3.3
**Handbook of operational regulations of the EUGLOHRIA
Excellence Core Facility Network**



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WP3 – Establishment of an Excellence Core Facility Network (ECFN) for the sustainable shared use of research infrastructure within EUGLOHRIA

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TABLE OF CONTENTS

INTRODUCTION.....	4
EUGLOHRIA Summary	5
Overview of EUGLOH Accessible Core Facilities	9
METHODS.....	13
Methodology of creating the inventory	14
Methodology of creating common operational regulations	20
OPERATIONAL REGULATIONS ON PLATFORM USAGE MANAGEMENT	26
Website of accessible core facilities and online standard proposal scheme	27
Data management provisions	31
Suggested cost model framework	34
Suggested framework of handling IP rights.....	39
ANNEXES.....	42

INTRODUCTION

EUGLOHRIA Summary



As one of 17 selected pilot “European Universities”, the European University Alliance for Global Health (EUGLOH) pursues the mission of becoming **a world-class higher education alliance focused on global health and wellbeing**. As part of this mission, the five partner institutions forming the Alliance are striving to build a European campus to train future generations of European innovators, practitioners, experts and leaders and to establish a permanent dialogue between world-class research and innovation for global health (care, technology, management). EUGLOH unites more than 210,000 students, 23,000 academic staff, 73 faculties and schools, and 450 research groups in an active network of exchange. The universities are embedded in highly dynamic local innovation ecosystems marked by high-ranking partners from industry, research, innovation and culture. Unified in the pursuit of excellence in education, research and innovation, the alliance is guided by fundamental values such as solidarity, equality of opportunities, inclusiveness, respect for human rights and full access to welfare that form hallmarks of European identity. As part of the proposed action, EUGLOH will extend its successful long-term strategy by **proposing an ambitious agenda of institutional transformation in the areas of research and innovation** while at the same time **unlocking additional synergies** with the education dimension of its mission.

Today, as part of the implementation of the “The European University Alliance for Global Health – Transformation through Joint Research and Innovation Action” (EUGLOHRIA) proposal (January 2021 – December 2023), the Alliance will pursue the integrated mission of developing into a world-class higher education, research and innovation alliance addressing global health challenges ranging from public health and environmental protection to food security. This mission focuses on the urgent need to step up international and cross-sectoral collaboration in research and innovation in tackling Global Health Crises, especially in light of the current COVID-19 pandemic.

Based on the excellence and the breadth of inter-disciplinary expertise of the partners, the Alliance will respond to this need by pooling expertise, building cross-national research and innovation networks, promoting the next generation of global health experts and thereby contributing to the acceleration of health-related innovations.

EUGLOHRIA addresses the specific challenge and scope of the “Science with and for society” (SwafS) call “Support for the Research and Innovation Dimension of European

Universities”, as set out in the work programme 2018-2020.

Global health is at the heart of the United Nation’s Sustainable Development Goals (SDGs). The challenges humankind faces in achieving these goals are manifold and require extensive knowledge and technology transfer across borders, disciplines and sectors. As the COVID-19 pandemic has made unmistakably clear, personal well-being, as well as economic and social life, are fragile goods that need to be protected in an urgent and concerted effort. The success of this effort depends on the pooling of expertise and resources across nations and disciplines and requires the development of strategies that allow for rapid, coordinated, multi-layered and comprehensive responses in dealing with health crises in a globalised world. This is where EUGLOHRIA comes in. Building on the foundations laid in EUGLOH’s joint strategy for education, EUGLOHRIA follows a cross-disciplinary research and innovation agenda to strengthen the science-policy-society interface of global health along with a comprehensive set of core domains, that range across the future of medicine including predictive, preventive, participative and personalised medicine as well as emerging diseases; digital health and technologies for health and well-being; climate change, environmental hazards, biodiversity; social and human sciences for global health; and healthy life and well-being. The actions proposed below to implement this agenda form the basis for positioning EUGLOH as a competence centre in global health as part of its mission to become a world-class higher education, research and innovation alliance in global health. EUGLOHRIA builds on the following preconditions of its partners for the successful realisation of its agenda.

Reinforcing synergies within the network, the institutional transformation agenda presented here will develop and deploy strategies to:

- ⇒ accelerate scientific development regarding urgent research questions in global health crises;
- ⇒ spark academia-business partnerships;
- ⇒ foster research-based and knowledge-driven decision-making and exchange;
- ⇒ integrate its research, innovation and education measures;

in an effort to address and integrate all aspects of the knowledge square in global health (education, research, innovation, civil society).

To this end, EUGLOHRIA draws on its members’ extensive expert knowledge, cutting-edge research facilities as well as regional innovation ecosystems. The concept at hand

takes into account individual research excellence, country-specific conditions and complementary approaches in order to yield interoperable and coherent results.

In a joint action of pooling expertise, platforms, data, and resources, EUGLOHRIA envisages expanding on and complementing EUGLOH's education agenda by adding comprehensive research and innovation actions.

Links between EUGLOH and EUGLOHRIA will be strongly enhanced by sharing and cross-fertilizing research experience and top-notch research infrastructures, thus multiplying the potential of research-based education and its impact. Furthermore, EUGLOHRIA adds to EUGLOH a fortified multi-stakeholder approach to empower innovation and entrepreneurship-based learning and foster societal exchange. Conversely, EUGLOHRIA benefits from well and holistically trained young scientists to fully exploit the consortium's global health potential.

In summary, the scientific collaboration, the shared use of the partners' infrastructure, and the exchange of diverse unique knowledge will contribute to solving global health problems. The access to their available equipment and a closer connection to some of the largest research facilities in Europe including medical, biological and physical institutes make a powerful transnational network in the spirit of collaborative research.

Overview of EUGLOHRIA Accessible Core Facilities

The European University Alliance for Global Health - Transformation through Joint Research & Innovation Action (EUGLOHRIA) includes 5 universities:

- 1) University of Paris-Saclay
- 2) University of Lund
- 3) University of Szeged
- 4) University of Porto
- 5) Ludwig-Maximilians-Universität München



These long-established, well-equipped, highly experienced research and teaching units are committed to pursuing the integrated mission of developing into a world-class higher education, research and innovation alliance addressing global health challenges ranging from public health and environmental protection to food security. This mission focuses on the urgent need to enhance international and cross-sectoral collaboration in research and innovation in tackling Global Health Crises, especially in light of the current COVID-19 pandemic. In this context, partners' research infrastructures in the field of global health have been assessed and accessible Excellence Core Facilities (ECFs) have been identified with the aim of consolidating research capacity, fostering scientific collaboration and creating synergies in research and innovation.

Based on the results of the survey carried out for the creation of the White Book of EUGLOH Excellence Core Facilities (see deliverable D3.1), the 5 partner universities operate more than 700 different research platforms under the umbrella of the alliance, clustered around 97 identified Excellence Core Facilities. These platforms are associated with and under the responsibility of more than 200 distinct institutes and/or research units.

The ongoing research at these platforms covers fields in the domains of Life Sciences and Health (~62%), and Science and Engineering (~36%). The platforms associated with the Science and Engineering domain spread over 8 distinct sectors. The two most dominant sectors, Chemistry and Physics of Waves and Matter, represent 75% of the platforms associated with the domain. The results of the survey demonstrate strong interdisciplinary relationships in Life Sciences, especially those connected to Chemistry, serving as a powerful interface area for global health research.

The figure below highlights for the whole alliance and via two word-clouds, the major typologies and expertise areas associated to the platforms of the Alliance.

The alliance will harness these unique features through collaborative potential creating transnational research and innovation networks for tackling Global Health Crises, especially in light of the current COVID19-pandemic.

In addition to the outstanding excellence and interdisciplinary expertise of the partners, all universities have extensive experience in the management of national and cross-national research infrastructure initiatives. For example, the alliance coordinates and manages some of the largest projects in Europe (e.g., the largest epidemiological cohort CONSTANCES).

METHODS

Methodology of creating the first inventory

EUGLOHRIA's transformation agenda draws on three Horizon 2020 transformation modules outlined in section 1.1 (joint research & innovation agenda; sharing infrastructures & resources; promoting academia-business cooperation) and will be implemented as part of three substantive interconnected work packages (WP2, WP3, WP4), supported through efficient management structures (WP1) and effective dissemination measures (WP5). The work packages of EUGLOHRIA are designed to lay the foundation and ensure tangible progress for EUGLOH's mission to become a world-class higher education, research and innovation alliance in global health:

Sharing research infrastructures:

Mediated by digitalization and technological innovation, the global science system is characterized by advanced research technologies and (data) infrastructures that are developed at an increased pace requiring continuous investments and specialized knowledge by research institutions in order to build and maintain them.

At the same time, infrastructure capabilities form the foundation of and furnish unprecedented possibilities regarding the basic scientific understanding of processes related to health and disease and the development of medical and other innovations in tackling global health issues. They constitute hubs in developing cross-disciplinary collaborations on complex research questions in global health and in educating and upskilling the next generation of scientists, data professionals and health practitioners. In complementing its activities in WP2, as part of WP3 (Establishment of an Excellence Core Facility Network (ECFN) for the sustainable shared use of research infrastructure within EUGLOH), EUGLOHRIA will therefore inventory and identify specific requirements and resources to develop an action plan towards sharing research infrastructures in global health.

All partners have excellent research platforms and networks of technological platforms, high-expertise research infrastructures, both in life and medical sciences as well as in physics and engineering. These platforms and infrastructures gather key-equipments and expertises mandatory for high-quality research and all partners have extensive experience in the management of national and cross-national research infrastructure initiatives, part of which partners are also involved in or coordinate European Infrastructure Consortia (ERICs).

For example, Lund University is closely related to the largest ERIC on the European Strategy Forum of Research Infrastructures (ESFRI) Roadmap, the European Spallation Source, is part of EATRIS-ERIC, coordinates the national Research Infrastructure BioMS and is part of several national Research Infrastructure consortia including Protein Production Sweden, InfraVis, Chemical Biology Consortium Sweden and Science for Life Laboratories (SciLifeLab); University Paris-Saclay manages France's largest epidemiological cohort CONSTANCES; University of Porto is part of the ESFRIs EUROBIOIMAGING and EU-OPENSREEN, and coordinates the national infrastructures PPBI – Portuguese Platform of Bioimaging and PT-OPENSREEN – infrastructure for Chemical Biology and Genetics; University of Szeged is both scientifically and organizationally closely related to ELI-ALPS, an advanced internationally accessible laser facility; Ludwig-Maximilians-Universität München's Biomedical Center constitutes one of the largest research infrastructures in basic life science research in Germany.

In order to harness this collaborative potential across the Alliance, institutional research infrastructures in global health have been surveyed and core facilities for shared use identified, also with respect to starting points for unison engagement in pandemics resilience (WP2). In this process, legal and regulatory barriers will be analysed and addressed and operational rules for shared infrastructure use elaborated. On this basis, the Alliance aims to establish a Network of Excellence Core Facilities (ECFN) as part of which shared access to the core facilities in the network will be implemented. The network's establishment will be assessed by carrying out pilot studies on use cases from the different partners. The administrative framework and service spectrum of ERICs will serve as benchmarks in paving the way for the shared Excellence Core Facilities envisaged in EUGLOHRIA. EUGLOH education activities (e.g. joint schools on research practices and intra-alliance internships at core facilities) complement these activities very well. With its effort to promote joint infrastructures and databases, EUGLOHRIA ultimately aims at contributing to the perspective of European Strategy Forum of Research Infrastructures (ESFRI) on sectoral, multi-level research infrastructure development.

For optimal development of the EUGLOHRIA consortium and, having in mind, the most efficient possible future coupling with the data generated by other WPs, notably the WP2's deliverable 2.1 (Inventory of COVID-19 and pandemics-related research and partners'

expertise on pandemics), the Alliance decided to compile all individual platforms of each EUGLOHRIA partner in a single excel file. As such, data were collected at each site and sent on a regular base to the WP3 coordinator. Moreover, it has been decided that the file will be considered a “living” database and will be modified and updated during the EUGLOHRIA project duration. At any given time, the data included within the file may also be extracted, and this was first done on June 17, 2021. The resulting text file (word file) could be considered as a first snapshot / full picture of the EUGLOHRIA consortium landscape in terms of platforms/infrastructures, also permitting the preparation of a White Book as the deliverable 3.1, with notably a one-page standardized description of each platform. Last, the term “platform” has been defined by the consortium as “any open facility with specialized resources that provide access to instruments, technologies, registries and databases, sample collections, services and expert consultation for R&D purposes”.

The data collected within the excel database have been classified into three sections:

Section I: general information:

In this section, descriptive information about the platform such as its name, location, belonging institution, contact person as well as the cluster or associated research infrastructure can be found. The full list of collected items in this first section includes:

- ⇒ Name of the platform
- ⇒ Belonging unit or Institution (administrative attachment)
- ⇒ Physical location of the platform (if different than the belonging unit or Institution)
- ⇒ Mailing address
- ⇒ Contact person (surname, name)
- ⇒ Phone
- ⇒ Email
- ⇒ Website #1
- ⇒ Website #2 (if relevant)
- ⇒ Cluster or associated research infrastructure if identified (toward an ECF)
- ⇒ Partner (EUGLOHRIA)
- ⇒ ID number

Section II: About the facility:

This section compiles selected data about the platform, such as keywords describing its activities but also certifications (if relevant) and key-equipment. We have decided to use keywords because they are more informative than lines of text describing a platform. In addition, a limited number of keywords are much easier to handle than paragraph(s) in an excel database. Additionally, a short list of keywords is a rather “compact” way of describing a platform and will certainly facilitate the homogeneity between the platform description within the consortium.

The full list of collected items in this second section includes:

- ⇒ Key-words associated with the platform
- ⇒ Certification (ISO), if any
- ⇒ National certification, if any
- ⇒ Agency labelling, if any
- ⇒ Associated national or European / International infrastructure, if any
- ⇒ Key equipment

Section III: Domain/ sector:

Finally, information permitting a sorting and classification of the platforms has also been collected, with the aim of a strict and homogeneous description (closed list of items) of the platforms and associated ECFs within the consortium. The full list of collected items in this third and last second section includes:

- ⇒ Expertise areas
- ⇒ Principal domain
- ⇒ Primary sector
- ⇒ Typologies (up to three)
- ⇒ Strategic areas of innovation

WP3 : PLATFORMS ASSOCIATED TO EUGLOHRIA PARTNERS (UPSACLAY - LU - USZ - UPorto - LMU)

*Please check the "Notes" for a classification about the expected content for each item.
Collection of illustrations of the platforms is postponed and the user goal of the white book, generated indeed, the one-page format per platform may not allow the space for an illustration, also, from experience, collecting such illustrations at a correct format and inserting them in a file is time consuming.*



Section I : General information										Section II : About the facility					Section III : Domain / Sector							
Name of the platform	Belonging unit or Institution (administrative attachment)	Physical location of the platform (if different than the belonging unit or Institution)	Mailing address	Contact person (surname, name)	Phone	Email	Website #1 (if relevant)	Website #2 (if relevant)	Cluster or associated research infrastructure # identified (toward an ECF ?)	Partner (EUGLOHRIA)	ID number	Key-words associated with the platform	Certification (ISO), if any	National certification, if any	Agency labelling, if any	Associated national or European / International infrastructure, if any	Key equipments	Expertise areas	Principal domain	Primary sector	Typologies (up to three)	Strategic areas of innovation
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	Note 8	Note 9	Note 10	Note 11	Note 12	Note 13	Note 14	Note 15	Note 16	Note 17	Note 18	Note 19	Note 20	Note 21	Note 22	Note 23

The composition of this White Book and the methodology proposed for achieving deliverable 3.1 and described above were initiated and discussed during the first WP3 meeting (KoM, March 4, 2021, see minutes). The full list of items to be included in the White Book was then further discussed within the consortium, and then validated by all

partners. The first template of an excel file was then proposed, accepted by all partners, and sent as its final form on March 24, 2021. The initial deadline for compiling at each partner site, sections I and II of the file, was set to April 22, 2021, and then extended by one week (April 29, 2021, WP3 meeting 2, see minutes).

An overview of the data already collected by each partner was performed during the first workshop organized by WP3 (May 12, 2021). The following deadlines were decided for the preparation of the White Book: May 26, 2021 for a V2 of the excel file, almost completed, and June 16, 2021, for a last / V3 version of the excel file, with minor modifications of the previous one only.

Last, the excel file has now been updated once (May 2022), in order first to generate word-clouds relative to each partner (typologies, expertises) as well as permitting a cluster analysis relative to the “platforms”, and using a similar methodology to the one that was used recently within WP2, for the “projects”.

Methodology of creating common operational regulations

Core facilities are an integral part of the research activities of EUGLOHRIA partner universities. These core facilities are specialized platforms with unique, usually expensive instruments and services, managed both by researchers with technical expertise and experience as well as facility managers with operational management skills. They can be operated as fee-for-service laboratories in which users pay for the use of instruments, consulting or specialized services, as well as training in some cases. Concerning the inherent operational differences of Excellence Core Facilities and based on the inventory of EUGLOHRIA platforms (deliverable 3.1), EUGLOHRIA aims to propose and discuss some operational rules for the common use of selected ECFs.

These rules are based on three Work-Package 3 (WP 3) initiatives:

- i) the White Book survey results on rules to access platforms (part of deliverable 3.1, June 30, 2021);
- ii) a Study Tour to European Molecular Biology Laboratory (EMBL, Heidelberg, Germany) with the topic of best practices in research infrastructure share (2 days, April 25-26, 2022);
- iii) a Workshop (second one relative to this WP) on the creation of operational requirements for the common use of core facilities (1 day, May 11, 2022).

RULES TO ACCESS THE PLATFORMS AT EACH UNIVERSITY - SUMMARY

1) University Paris Saclay

Access to the platforms is associated to different modalities: from a simple “collaborative” format (e.g. based on science only, shared research interests and projects, with a preference given to future shared publications and communications) to a “full contract” format (without necessary shared publications and communication but with mandatory IP attributions). Open collaboration or contract formats, being with public institutions or private partners, fully depend on the institution which hosts the platform concerned (UPSaclay = 14 founding members, and a unique solution does not exist); The most used cost model remains the so-called “full-cost” one (charging human resources, consumables and equipment renting, participation to maintenance ...), with most often different and increasing user fees depending on the nature of the client (local users belonging to the Institution running the platform, UPSaclay members or EUGLOHRIA

alliance members; non UPSaclay academic users, private organizations). In all cases, interested parties are invited to contact the person responsible for the platform, in order first to specify and agree on the type of service required, and secondly, receive a quotation as well as the operational charter of the platform.

2) University of Lund

Access to the research infrastructures at Lund University varies with models with defined user fees to access only through research collaboration. When user fees are applied there is often a higher cost for users from the industry than for academic users.

3) University of Szeged

Access to the research infrastructures at University of Szeged varies according to each platform and institution that hosts the facility. Interested parties should contact the person responsible for the platform and specify the type of service required to be evaluated. The cost model used depends on the users of the core facilities, a higher cost is applied for industrial users than for academic users.

4) University of Porto

Access to the platforms of the University of Porto varies according to each platform and institution that hosts the facility. Interested parties should contact the person responsible for the platform and specify the type of service required to be evaluated. Alliance partners should expect an expense that can include costs with human resources, maintenance, consumables, and depreciation of equipment, among others.

5) Ludwig-Maximilians-Universität München

LMU has a cost model that depends on the users of the core facilities. E.g., academic partners will be charged for consumables and maintenance costs, while human resources for cooperative research with academic groups may also be covered by the LMU . Research done together with private institutions (i.e., industrial cooperation) will be charged according to a full cost model and according to European regulations.

WP3 WORKSHOP #2 – KEY INFORMATIONS

As part of the process of creating operational rules for the common use of facilities, academics and research infrastructure, managers have shared some of their good practice in the creation of operational requirements for the common use of ECFs. This was done by having some key-platforms sharing their own experience and current practices, **as part of an online workshop** (*Workshop #2 on “Sharing good practices on the creation of operational requirements for the common use of core facilities”, 11th May 2022*) organized by and for facility leaders and managers of EUGLOHRIA partners. This workshop focused on the exchange of knowledge on the operational requirements for the common use of core facilities: its aim was to identify handling facility usage requests, good practices, applied cost models and handling of IP rights/scientific results regarding research infrastructure share.

Basic information on the workshop:

- Topic: presentation of good practices in facility sharing.
- Aim: to collect practices which could serve as a basis for the handbook of operational rules.
- Participants: WP3 members and key-platform representatives.

Workshop agenda:

- 1 hour has been dedicated to each university, with a general presentation first of the local ecosystem of platforms and portfolio (5 – 10 minutes).
- Within that hour, 15 minutes have then been dedicated per platform or grouping of platforms; altogether 3 platforms (or 3 groupings of platforms) have been introduced per university.
- At the end, a brief Q&A session was organized.

Workshop presentation template:

A unified approach to create the presentations has been discussed and proposed, with a shared “powerpoint” template. This template, for each platform or regrouping of platforms, started with a presentation of the technical and scientific expertise of the platform, followed by the collections of answers to three specific and given questions:

- how does the platform handle incoming requests for facility usage?
- how are costs/fees/remuneration of facility usage determined?
- how are IP rights/scientific results handled in connection with shared facility usage?

STUDY TOUR TO EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL) – KEY LESSONS

In order to learn from best practice examples, a study tour with 7 participants from the EUGLOHRIA partner universities to the headquarters of the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany has been organized.

The program of the study tour has been designed in order to reinforce our knowledge on “good practices”, and included topics of operational, financial and legal aspects of offering infrastructure and expertise to researchers in mind.

Discussed topics:

- Presentation on the interdisciplinary structure of EMBL to perform fundamental research in molecular biology;
- Presentation of operational, financial and legal aspects of offering infrastructure and expertise to researchers;
- Presentation of EMBL’s activities in training of external visitors through research collaborations, use of facilities, and through courses and conferences;
- Presentation of EMBL’s services to scientists in the member states and the world;
- Presentation of EMBL’s activities to support internationality and collaboration;
- EMBL International PhD Programme;
- Site visits.

In addition to the above, the specific questions that were to be used during the workshop #2 have been discussed during the study visit.

As such, the present “Handbook of operational rules” including data management provisions is drawn up based on the basis of the results of the i) White Book survey data, ii) the workshop presentations and iii) the exchanges of the study tour.

OPERATIONAL REGULATIONS ON PLATFORM USAGE MANAGEMENT

Website of accessible core facilities and online standard proposal scheme

The creation of a common and searchable database at the level of the EUGLOHRIA Alliance is hard to achieve within the short framework of the project, both budget- and HR-wise. First of all, 3 partners out of 5 already have a platform sharing website of their own, while 2 partners only started working on creating one (based on the methodology of EUGLOHRIA partners with established facility sharing websites). Secondly, combining 3 existing and independent systems and 2 in the preparatory phase without adequate financial resources and a limited timeframe causes a challenge in implementation.

Based on the decision of all partners, instead of one common database that would not be possible to keep updated due to the lack of resources, the “best acceptable” solution is to provide a central information page with guiding information on how the facilities can be accessed within the Alliance. Respective website links will then be published to each universities’ platform sharing website, and the emphasis will be on the internal promotion of the central webpage and raising awareness of the possibilities within the Alliance.

WEBSITE STRUCTURE

The website will consist of a landing page with **basic information** about EUGLOHRIA and the facility sharing initiative of the project that includes a brief description of facilities, as well as word-clouds illustrating the potential of the participating core facilities in each University portfolio, based on typologies and expertise. This landing page will be followed by a **standard proposal scheme**, that will lead to the information page of the five universities (5 subpages) on **how to search for facilities** at each university. This page will also propose a link to the facility sharing websites of each university, when already available, or to a searchable database.

The EUGLOHRIA Excellence Core Facility Network portal will be based on the following structure.

Section 1. – About EUGLOHRIA

- General information section (EUGLOHRIA facilities and objectives);
- Key figures of EUGLOHRIA research facilities.

Section 2. – Online proposal scheme

- Standard proposal scheme

The standard proposal scheme is a **general, short template** with options that can be ticked. It is possible to indicate which principal domain, expertise and typology the researcher is searching a platform for when filling in the standard proposal scheme. The filled in form will be sent directly to the person filling it in, and an automatic e-mail will be also sent to the e-mail addresses provided by partners about the demand occurring. The generated proposal form is not obligatory to use but is strongly advised when reaching out for collaboration with the chosen facility.

The use of the website and the form is upon voluntary consent, the use and distribution of personal data of the project participants will be limited with respect to General Data Protection Regulations (GDPR).

Content of standard proposal scheme

- Data of applicant
 - Name;
 - Contact details (e-mail address);
 - University (tickable option);
 - Principal domain (tickable option);
 - Typology (tickable option)
 - Expertise area (tickable option).
- Data for the request of platform usage
 - Brief description of planned work at the platform (max 2000 characters).

After filling in, a “continue” button will lead to the 5 subpages of the universities.

Section 3. – Guiding information on facility sharing

- Facility sharing information section.
- Short description of the operation of facility sharing platforms of each university;
- Links to facility sharing websites.

Incoming searches for facility usage will be handled in two complementary ways:

- notification sent out in an e-mail to the assigned university e-mail addresses
- listed on the website's closed section that is accessible to assigned persons in a database

After receiving the notification, the contact persons assigned can forward the request to existing facilities participating in the EUGLOHRIA Alliance that could meet the demand of the user. After this, the communication can start between the respective facility (the identified platform) and the user (client).

The list of incoming searches will also serve as a way for partners (and in particular assigned contact persons) to be updated on the recent requests and refer these requests to the proper facility(ies) in its campuses. The purpose of keeping track of searches is to have statistics for types and content for facility needs within the EUGLOHRIA Alliance. The use and distribution of personal data of the project participants will be limited with respect to General Data Protection Regulations (GDPR).

Data management provisions

The financial conditions, implementation details and data management aspects for the particular cases of access to facilities, whatever the university or the platform concerned, **will be defined in specific agreements negotiated with the respective facilities.**

Data originating from platform usage will be:

- processed lawfully, fairly and in a transparent manner in relation to the data subject ('lawfulness, fairness and transparency');
- collected for specified, explicit and legitimate purposes, with prior consent and not further processed in a manner that is incompatible with those purposes; further processing for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes shall not be considered to be incompatible with the initial purposes ('purpose limitation');
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed ('data minimisation');
- accurate and, where necessary, kept up to date; every reasonable step must be taken to ensure that inaccurate personal data, having regard to the purposes for which they are processed, are erased or rectified without delay ('accuracy');
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the personal data are processed; personal data may be stored for longer periods insofar as the personal data will be processed solely for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes subject to the implementation of the appropriate technical and organizational measures required in order to safeguard the rights and freedoms of the data subject ('storage limitation');
- processed in a manner that ensures appropriate security of the personal data, including protection against unauthorized or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organizational measures ('integrity and confidentiality').

Data management rules shall be included in the agreement between the user and the facility.

Data management rules that shall be included in the facility usage agreement:

- any facts, information, or other data contracting partners become aware of in any way in connection with the other party and its economic activities in the context of the conclusion and completion of the facility usage contract and any compilation made therefrom, in particular, but not exclusively, the existence and the content of the facility usage contract shall constitute a trade secret, which shall not be disclosed or made available to a third party by the contracting parties – without the prior written consent of the other party – and may not be used for purposes other than the fulfilment of the facility usage contract;
- the commitment of confidentiality shall remain binding on the contracting parties during the term of the facility usage contract and after the termination of the facility usage contract;
- other persons having a legal relationship with the contracting parties shall also be bound by this confidentiality – with the same conditions as those applying to the contracting parties –, the observance of which shall be ensured by the contracting parties.

The data management provisions are suggested as guidelines, facilities will consider and adjust the details according to the incoming type and content of request for facility usage.

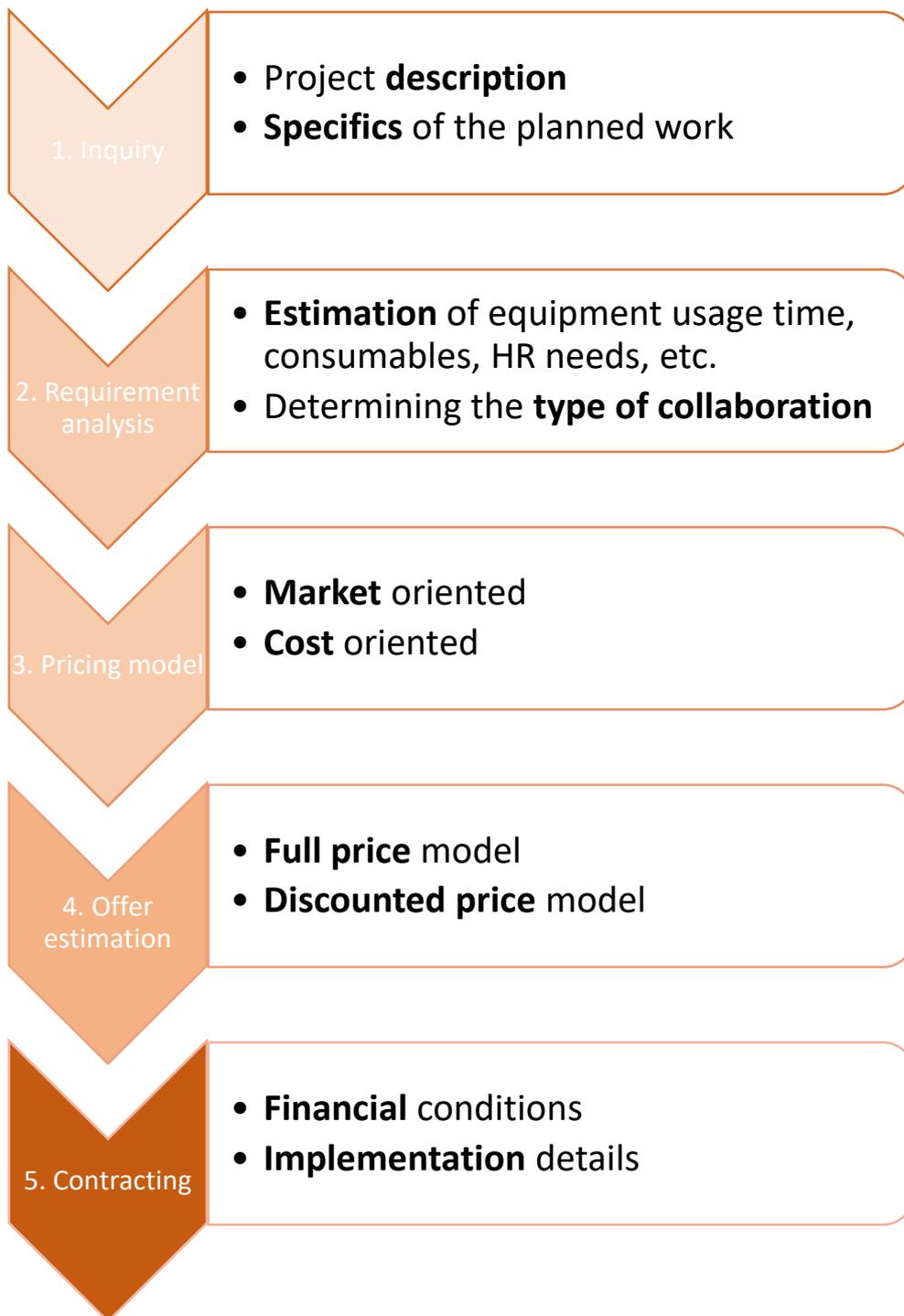
Suggested cost model framework

COST FRAMEWORK MODEL

Based on the survey created for the White Book of accessible core facilities (associated to deliverable D3.1), the discussion at workshop #2 and internal discussion with platforms by each university, common cost models are hard to set up as **each request for facility usage is unique and handled by the respective platform itself. No shared model within a University is foreseeable, neither at the level of the Alliance.**

However, taking into account first the information received at the study tour to EMBL (which has a long-running practice in research infrastructure share, but a very small number of platforms when compared to the Alliance!), as well as the information collected during workshop #2 and internal discussion with platforms, the created cost model shall be **a framework cost model that the facilities will consider and adjust according to the incoming type of request for facility usage.** The intention to collaborate within the Alliance is set and signed at the highest level of universities by the leaders in a Memorandum of Understanding on facility sharing, and the actual cooperation will be set up with the platforms allowing for the shortest turnaround time.

Overall many different contracts and agreements exist on platform usage based on the type of service needed and the level of cooperation required, but the following **cost framework model** can be applied and, if necessary, tailored to incoming facility usage needs.

1. EUGLOHRIA cost framework model**1. Inquiry/Request**

The request/inquiry is usually submitted to the facility in writing, typically an e-mail, but alternative first contacts are possible (a phone conversation or a

videoconference). The request includes a **project description** and the **specifics** of the planned work on the platform.

2. Requirement analysis

As a next step, the request is analysed and assessed by the platform to see the complexity of the request and to **determine which category** the request falls into:

- a. Service-oriented with autonomous facility usage (with or without training);
- b. Service-oriented with facility usage requiring technical HR support;
- c. Research-oriented, with expected major scientific input - Common methodology elaboration and measurement.

3. Price calculation / quoting

The price calculation is carried out based on the requirement analysis and is determined considering the following methods:

a. Market-oriented pricing

In this case, the price may reflect a competitor based / customer perceived value. The price is thus most likely determined by reference to costs commonly applied by undertakings for the same activity within the market.

b. Cost oriented pricing

In this case, the price may be based on the fixed and variable costs occurring due to the usage of the facility, and defined as:

“Fixed costs” like human resources (staff costs of permanent staff), maintenance costs, overhead and other costs.

“Variable costs” like human resources (non-permanent staff), consumables, and usage fees (which can contain the profit as well).

4. Offer estimation

When preparing the offer for the usage of a certain facility, the price calculation is always determined based on the actual request and will be sent either based on a full-price model or offered at a discounted price.

a. Full price model

Core facilities are an integral part of research activities of EUGLOHRIA partner universities and initially serve internal academic purposes, but can also be made available to industrial partners in which case the usual process is that a full price is charged (exceptions may apply).

b. Discounted price model

A reduced price may be charged for strategic partners (often academic users only, such as EUGLOHRIA Alliance members), or in the case when the results are shared in the form of a common IP, know-how or publication. The amount of discount is the decision of the facility.

5. Contracting / End result: cooperation agreement on facility usage

Each incoming inquiry/request goes in most cases through the evaluation process depicted below (steps 1-4) by the respective facility, and the final price offer is communicated to the one submitting the request. At the end, the financial conditions and implementation details for any particular case are **defined in specific working programs** negotiated with the respective facilities.

SPECIFIC CASES: FREE OF CHARGE FACILITY USAGE

Large scale research facilities funded from grant sources (such as MAX IV, SOLEIL or ELI-ALPS Szeged) with a mission to gain more and more experience through the active participation of users **provide access to the facilities based on facility operated application processes**. In this case, the users submit a project proposal which goes through both a technical assessment and is also evaluated by the scientific committee. If the project proposal is accepted, using the facility is in most cases free of charge.

Suggested framework for handling IP rights

A high need has been recognized that Intellectual Property laws and regulations of the different institutions and countries when sharing ideas and creating new research activities or working out new methodologies or creating industrial co-operations **should be harmonized and a common approach to IP Policy within the Alliance should be discussed**. At this stage of the cooperation of the allied partner universities when we are getting to know each other’s assets, processes and regulations, such a goal is too ambitious to carry out on the basis of the available resources, but with the identification of approaches and methods the Alliance is taking the first steps in this direction.

As with the cost model and price determination, each request for facility usage is unique and handled by the platform itself, thus **the decision on how to handle intellectual property rights is evaluated in each particular case** based on the type of service needed and the level of cooperation required. Despite this fact, based on the discussion at workshop #2 and internal discussion with platforms by each university, a common approach seems to be identified.

Contribution of Core Facility Staff	Handling of IP rights and scientific results
Complete autonomous usage	Acknowledgement of the Core Facility only
Technical support / Scientific input	Acknowledgement of the Core Facility and most often co-Authorship ³
Major scientific input / own project ideas	Authorship ³ , as well as, if relevant, joint inventorship

In the latter case (Major scientific input / own project ideas), the practice encouraged by the Alliance Partners is to share intellectual property, and know-how developed based on the common research work (this does not include Background IP, which must be

³ Authorship according to the Vancouver convention, <https://www.icmje.org/icmje-recommendations.pdf>

negotiated in a separate agreement). As such, it becomes the common property of the Partners involved in the core facility sharing project/process. **The ownership interest shall be based on the proportion of the contribution made by the concerned Partners** upon development, from which the concerned Partners may deviate by mutual consent. In determining the Industrial Property Rights Strategy, Partners shall be obliged to cooperate as co-owners of the intellectual property, and know-how.

Regarding the Intellectual Results, created as a result of their own and joint research/work conducted in the scope of facility sharing agreements as a result of the EUGLOHRIA Project, the EUGLOHRIA partners will take into account the EUGLOH IP Code of Conduct currently in preparation.

The researchers carrying out work within the framework of the facility sharing agreements as a result of the EUGLOHRIA Project agree to be bound by the Intellectual Property Management Policy of the respective facility and commit to comply with the same.

ANNEXES

Annex 1

Presentations from survey relative to the White Book

Annex 2

Presentations from Workshop #2

1) University of Paris Saclay presentations

2) University of Lund presentations

3) University of Szeged presentations

4) University of Porto presentations

5) Ludwig-Maximilians-Universität München presentations

Annex 3

Presentation from Study Tour

'EMBL Core Facilities & Services: Linking science with service'

Annex 1

Presentation from survey relative to the White Book



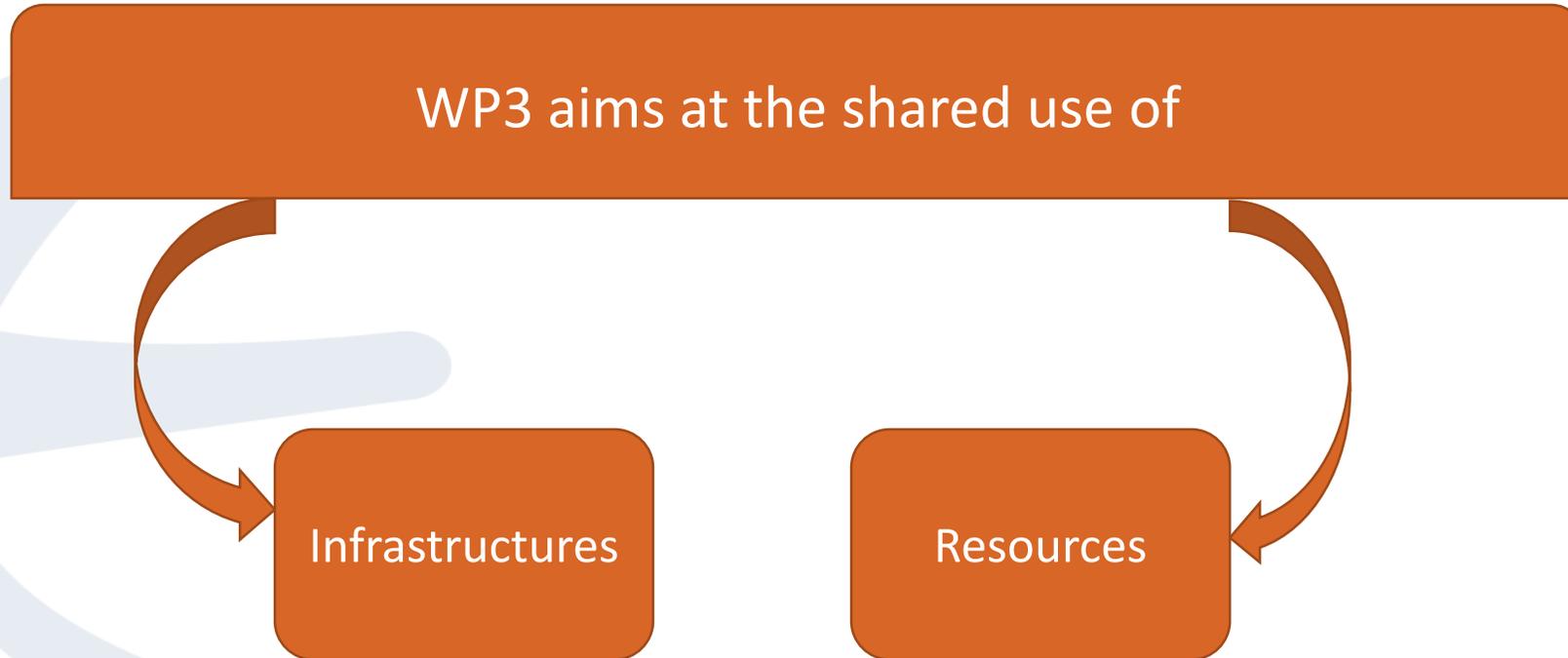
WP3 - White Book of Accessible Core facilities

Dr. Zoltán Kónya, Dr. Andrea Rónavári, Anikó Bucsiné Pados

University of Szeged



WP3 aims



WP 3 Activities

Identification of accessible Excellence Core Facilities (ECFs)

White Book of accessible core facilities

Memorandum of understanding for shared use of facilities



Elaboration of operational rules for ECFs

Handbook of operational rules

Online proposal form



Pilot studies

Pilot studies based on the shared use of ECFs (sharing and use of up to 10 selected ECFs)

Assessment report on best practices, lessons learnt and the future development

Table of Content – White Book

- Introduction (EUGLOH & EUGLOHRIA) (pages 1-16)
- Presentation of Univeristies (pages 17-22)
- Methods (pages 23-27)
- Individual institutional conclusions (pages 29-44)
- General conclusions (pages 45-47)
- White Book of Accessible Core Facilities (pages 48-781)

Excel file for data collection

WP3_Platforms belonging to EUGLOHRIA partners_USZ_FINAL - Excel

WPS: PLATFORMS ASSOCIATED TO EUGLOHRIA PARTNER 8 (UPSACLAY - LU - USZ - UPORTO - LMU)

Please create the "Notes" for a clarification about the expected content for each row.
Collection of illustrations of the platforms is postponed until the first draft of the white book generated. Indeed, the one-page format per platform may not allow the space for an illustration; also, from experience, collecting such illustrations at a correct format and inserting them in a file is time-consuming.

Section I : General information										Section II : About the facility										Section III : Domain / Sector				
Name of the platform	Belonging unit or Institution (administrative attachment)	Physical location of the platform (if different than the belonging unit or Institution)	Mailing address	Contact person (surname, name)	Phone	Email	Website #1 (administrative)	Website #2 (if relevant)	Cluster or associated research infrastructure (if identified (based on ECF ?))	Partner (EUGLOHRIA)	ID number	Key-words associated with the platform	Certification (ISO), if any	National certification (if any)	Agency labeling (if any)	Associated national or European / international infrastructure (if any)	Key equipments	Expertise areas	Principal domain	Primary sector	Typologies (up to three)	Strategic areas of innovation		
Note 1		Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	Note 8	Note 9	Note 10	Note 11	Note 12	Note 13	Note 14	Note 15	Note 16	Note 17	Note 18	Note 19	Note 20	Note 21	Note 22	Note 23	
Image Analysis Facility	USZ, Anatomy Institute	USZ, Anatomy Institute	6724 Szeget, Kaposi Lajos ugrd 40.	Anat Nogradi	+3662 549565	anat.nogradi@med.u-szeged.hu	http://www.usz.seg.hu	http://www.usz.seg.hu		USZ	TBD	electron microscopy, confocal microscopy, digital slide scanning			not relevant	not relevant	JEOL 100kV TEM, Olympus 1000 F1 compact confocal microscope, 3D Histech Digital Slide Scanner	Electron and light microscopy	Life Sciences and Health (LSH)	Life Sciences	Cellular and subcellular analysis	Medicine - health		
Hamilton STARlet automated liquid handling system	USZ, Faculty of Science and Informatics, Dept. Biochemistry and Molecular Biology	USZ, Faculty of Science and Informatics, Dept. Biochemistry and Molecular Biology	6726 Szeget Kdlop fasor 52.	Liszd Bodi	+3662 343064	bodi@bio.u-szeged.hu	http://biochem.u-szeged.hu/index_6.html			USZ	USZ	automation, splicing, genomics					Hamilton STARlet	Life Sciences and Health (LSH)	Life Sciences (SDV)	genomics, post genomics	Health, Environment	Health, Environment		
Illumina MiSeq sequencing system	USZ, Faculty of Science and Informatics, Dept. Biochemistry and Molecular Biology	USZ, Faculty of Science and Informatics, Dept. Biochemistry and Molecular Biology	6726 Szeget Kdlop fasor 52.	Liszd Bodi	+3662 343064	bodi@bio.u-szeged.hu	http://biochem.u-szeged.hu/index_6.html			USZ	USZ	sequencing, genomics, genotyping, NGS, WGS, transcriptomics					Illumina MiSeq sequencer, Agilent 2100 Bioanalyzer	Life Sciences and Health (LSH)	Life Sciences (SDV)	genomics, post genomics	Health, Environment	Health, Environment		
QX100™ Droplet Digital™ PCR System	USZ, Institute of Medical Genetics	University of Szeged, Institute of Medical Genetics	6720 Szeget, Somogyi B. uca 4.	Margi Pál	+3662 645938	pal.margi@med.u-szeged.hu	http://www.usz.seg.hu/medgen/medgen.html			USZ	TBD	genetics, genomics, genotyping, gene expression			not relevant	not relevant	QX100 droplet generator, QX100 droplet reader, FEI Quanta 200 HV TEM, FEI Apreo SEM	genetics, genomics	Life Sciences and Health (LSH)	Life Sciences (SDV)	genomics, post genomics	Quality of Life - Health - Food		
Electron Microscopy Center	USZ, Chemistry Institute	USZ, Chemistry Institute	6720 Szeget, Rerich ut 1.	Zsuzsanna Korya	+3662 642300	korya.zsuzsanna@chem.u-szeged.hu	http://www2.usz.seg.hu/chem/chem.html			USZ	TBD	electron microscopy, sample preparation			not relevant	not relevant	HITACHI S4700 SEM, HITACHI S4700 SEM, Hummingbird in situ cells SEM/step 2.0 on milling system	nanoscience materials science	Science and Engineering (SE)	Chemistry (C)	Physicochemical analysis	Chemistry - Materials		
Surface Science Center	USZ, Chemistry Institute	USZ, Chemistry Institute	6721 Szeget, Rerich ut 1.	Zsuzsanna Korya	+3662 644820	korya.zsuzsanna@chem.u-szeged.hu	http://chem2.usz.seg.hu/surfacechem/index.html			USZ	TBD	surface science, atomic layer deposition, surface chemistry			not relevant	not relevant	XPS, Auger, LEIS, Kelvin probe, Renishaw TFS 200 ALD	nanoscience materials science	Science and Engineering (SE)	Chemistry (C)	Physicochemical analysis	Chemistry - Materials		
Computer tomography center	USZ, Chemistry Institute	USZ, Chemistry Institute	6722 Szeget, Rerich ut 1.	Alexa Kucovec	+3662 644820	kucovec@chem.u-szeged.hu	http://www2.usz.seg.hu/surfacechem/index.html			USZ	TBD	micro CT, 3D imaging, internal structure					Bruker SkyScan Z111	materials science	Science and Engineering (SE)	Chemistry (C)	Physicochemical analysis	Chemistry - Materials		
Electrochemistry Center	USZ, Chemistry Institute	USZ, Chemistry Institute	6723 Szeget, Rerich ut 1.	Csaba Jankó	+3662 548393	janffy@chem.u-szeged.hu	http://www2.usz.seg.hu/chem/home.html	www.echem.hu		USZ	TBD	electrochemistry, electroanalysis, sensing, catalysis					Completely equipped electrochemical laboratory from the very low (up to) to very high (up to) current densities and all coupled analytical tasks	Electrochemistry	Science and Engineering (SE)	Chemistry (C)	Physicochemical analysis	Chemistry - Materials		
Fermentation center	USZ, Institute of Biology	Department of Biology	6726 Szeget, Kdlop fasor 52	Gabor Rakhegy	+3662 62 548940	g.rakhegy@bio.u-szeged.hu	http://biochem.u-szeged.hu/index_6.html			USZ	TBD	batch, continuous fermentation, yeast, digestion, large scale fermentation			not relevant	not relevant	2 x 5L Bioassay C fermenters (Braun Biotech), 2 x 2L Bioassay Brain fermenters, chemostats (Sartorius), 15 x 5L custom made biogas fermenter, 1 x 1 m ³ custom made industrial fermenter	fermentation technologies	Science and Engineering (SE)	Life Sciences (SDV)	Bioproduction	Quality of Life - Health - Food, Energy, Ecology, Government, Aeronautics, Aerospace - Defense		
Bioanalytical center	USZ, Institute of Biology	Department of Biology	6726 Szeget, Kdlop fasor 52	Gabor Rakhegy	+3662 62 548940	g.rakhegy@bio.u-szeged.hu	http://biochem.u-szeged.hu/index_6.html			USZ	TBD	GC, GC/MS, HPLC, FPLC, Diemaster			not relevant	not relevant	1 db Agilent 6890N gas chromatograph, 1 db Agilent 7890B gas chromatograph coupled to mass spectrometer, Merck Elite Lachrom and Hitachi Chromaster HPLC, NGC Quest 10 Plus FPLC chromatography system, Varianmax CN analyzer	chemical analysis	Science and Engineering (SE)	Life Sciences (SDV)	Physicochemical analysis	Quality of Life - Health - Food, Energy, Ecology, Government, Aeronautics, Aerospace - Defense, Chemistry - Materials		
Fluorescence Microscope (Zeiss Axio Observer 7)	USZ, Department of Pathophysiology	USZ, Department of Pathophysiology	6725 Szeget, Semmelweis u. 1.	Lóránd Kiss	+3662 2342958	kiss.lorand@med.u-szeged.hu	http://www.med.u-szeged.hu/index_6.html			USZ	TBD	Biology, real time fluorescence measurement						Biology	Life Sciences and Health (LSH)	Life Sciences (SDV)	Cellular Imaging, In vivo Imaging			
HEKA Patch clamp system (EPC 10 USB Single)	USZ, Department of Pathophysiology	USZ, Department of Pathophysiology	6725 Szeget, Semmelweis u. 1.	Lóránd Kiss	+3662 2342958	kiss.lorand@med.u-szeged.hu	http://www.med.u-szeged.hu/index_6.html			USZ	TBD	Biology, electrophysiology, real time measurement on channel function						Biology	Life Sciences and Health (LSH)	Life Sciences (SDV)	Biophysics			
In vivo hemodynamic measurement platform (PV loop system)	USZ, Department of Biochemistry	University of Szeged, Department of Biochemistry	6720 Szeget, Dom tér 9.	Gergely Szeles, Tamás Csontos	+3662 545755	szeles.gergely@med.u-szeged.hu, csontos.tamas@med.u-szeged.hu	http://www.biochem.u-szeged.hu/index_6.html			USZ	TBD	heart function, PV loop					ADV300 PV System	Experimental cardiology	Life Sciences and Health (LSH)	Life Sciences (SDV)	Animal facility and functional genomics	Quality of Life - Health - Food		
FACS (Fluorescence Activated Cell Analyzer)	USZ, Institute of Biochemistry	University of Szeged, Institute of Biochemistry	6720 Szeget, Dom tér 9.	Inno Oroszovszki	+3662 549547	oroszovszki.inno@med.u-szeged.hu	http://biochem.u-szeged.hu/			USZ	TBD	fluorescence cell analyzing, antibody, immunocytometry					ParasCyFlow ML	biology, biochemistry, genomics	Life Sciences and Health (LSH)	Life Sciences	Cytometry	Quality of Life - Health - Food		
Fluorescent microscope (Nikon Ni-U)	USZ, Department of Biochemistry	University of Szeged, Department of Biochemistry	6724 Szeget, Dom Square 9	Amiko Keller-Pinter	+3662 645 198	keller.pinter@med.u-szeged.hu	www.biochem.usz.seg.hu/index_eng.html			USZ	TBD	fluorescent microscopy, cellular imaging			not relevant	not relevant	Nikon Ni-U upright microscope	Cell biology	Life Sciences and Health (LSH)	Life Sciences (SDV)	Cellular imaging	Quality of Life - Health - Food		
Odyssey® CLx Imaging System	USZ, Department of Biochemistry	University of Szeged, Department of Biochemistry	6720 Szeget, Dom tér 9.	Gergely Szeles, Tamás Csontos	+3662 549596	szeles.gergely@med.u-szeged.hu, csontos.tamas@med.u-szeged.hu	http://www.biochem.usz.seg.hu/index_eng.html			USZ	TBD	molecular biology, digital fluorescence, fluorescent Western blot			not relevant	not relevant	Odyssey® CLx Imaging System	gene expression, molecular biology	Life Sciences and Health (LSH)	Life Sciences (SDV)	Preclinical / clinical exploration In vivo	Quality of Life - Health - Food		

Data collected within the excel database I.

Section I: general information

Name of the platform

Belonging unit or Institution (administrative attachment)

Physical location of the platform (if different than the belonging unit or Institution)

Mailing address

Contact person (surname, name)

Phone

Email

Website #1

Website #2 (if relevant)

Cluster or associated research infrastructure if identified (toward an ECF?)

Partner (EUGLOHRIA)

ID number

Data collected within the excel database II.

Section II: About the facility

Key-words associated with the platform

Certification (ISO), if any

National certification, if any

Agency labelling, if any

Associated national or European / International infrastructure, if any

Key equipments

Data collected within the excel database III.

<u>Section III:</u>	Expertise areas
<u>Domain/</u>	Principal domain
<u>sector:</u>	Primary sector
	Typologies (up to three)
	Strategic areas of innovation

Example of an ECF

50

Section I : General information	Name of the platform	Systèmes de Culture Innovants sous Contraintes (UMR Agronomie)
	Belonging unit or Institution (administrative attachment)	AGRONOMIE (UMR)
	Physical location of the platform (if different than the belonging unit or Institution)	
	Mailing address	AGRONOMIE (UMR), 1, avenue Lucien Bretignières, 78850, Thiverval-Grignon, France
	Contact person (surname, name)	Caroline Colnenne-David
	Phone	(+33) 1 30 81 53 28
	Email	caroline.colnenne-david@inrae.fr
	Website #1	https://www.pluginlabs-universiteparisaclay.fr/fr/entity/915001
	Website #2 (if relevant)	https://www6.versailles-grignon.inra.fr/observatoire-environnement/Observation-et-experimentation-au-champ/Essais-agronomiques/Systemes-de-Culture-Innovants-sous-Contraintes
	Cluster or associated research infrastructure if identified (toward an ECF ?)	AGEC
Section II : About the facility	Partner (EUGLOHRIA)	UPSACLAY
	ID number	UPS001
	Key-words associated with the platform	long-term monitoring, agronomic practices, energy, greenhouse gases, pesticides, biodiversity
	Certification (ISO), if any	
	National certification, if any	
Section III : Domain / Sector	Agency labelling, if any	
	Associated national or European / International infrastructure, if any	
	Key equipments	Zero pesticide system (INRAE) / System decreasing the amount of fossil energy consumed (INRAE) / System reducing greenhouse gas emissions (INRAE) / Unconstrained system (INRAE)
	Expertise areas	agroecology
Section III : Domain / Sector	Principal domain	Life Sciences and Health (LSH)
	Primary sector	Life Sciences (SDV)
	Typologies (up to three)	Plant / agronomic experimentation
Section III : Domain / Sector	Strategic areas of innovation	Quality of Life - Health - Food; Energy, Ecology, Environment

Individual insitutional conclusions

A unique network of platforms | 46 ECFs
Life Sciences and Health – 8 dominant typologies



**université
PARIS-SACLAY**

Cellular imaging • In vivo Imaging •
Structural Biology / Biophysics • Preclinical /
clinical exploration • Genomics / Post
genomics • Animal facility and functional
exploration • Biobanks / Biological
Resources • Physicochemical analysis

One University – 8 faculties - > 220 research
infrastructures | State of the art infrastructures
ranging from multi-platform infrastructures to
single unit unique instruments and experts -
Life Sciences and Health – 6 dominant typologies



LUND UNIVERSITY

Cellular imaging • In vivo Imaging •
Structural Biology • Genomics •
Bioinformatics • Physics

A unique network of platforms | 12 ECFs
Life Sciences and Health – 4 dominant typologies



SZTE
UNIVERSITY OF SZEGED

In vivo Imaging • Chemistry / Screening •
Preclinical / clinical exploration •
Physicochemical analysis

A unique network of platforms | 19 ECFs
Life Sciences and Health – 5 dominant typologies



U. PORTO

Cellular imaging • Chemistry / Screening •
Preclinical / clinical exploration •
Physicochemical analysis •
Cytometry / Histology

A unique network of platforms | 9 ECFs
Life Sciences and Health – 3 dominant typologies



LMU
LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

Cellular imaging • Analytical chemistry •
Structural Biology / Biophysics •
Chemistry / Screening

General conclusions

TRIAL ID



European Alliance for Global Health | 97 ECFs
Life Sciences and Health – 8 dominant typologies



Cellular imaging • In vivo Imaging •
Structural Biology / Biophysics • Preclinical /
clinical exploration • Genomics / Post
genomics • Animal facility and functional
exploration • Biobanks / Biological
Resources • Physicochemical analysis

RULES TO ACCESS THE PLATFORMS

UPS

Access to the platforms may be associated to different modalities: from a simple “collaborative” format (e.g. based on science only, shared research interests and projects, with a preference given to future shared publications and communications) to a “full contract” format (without necessary shared publications and communication but with mandatory IP attributions). Open collaboration or contract formats, being with public institutions or private partners, also fully depend on the institution who hosts the platform concerned (UPSaclay = 14 founding members, and a unique solution does not exist) and its defined cost model, which is in most case, the so-called “full-cost” one (charging human resources, consumables and equipment renting, participation to maintenance ...).

RULES TO ACCESS THE PLATFORMS

ULUND

Access to the research infrastructures at Lund University varies with models with defined user fees to access only through research collaboration. When user fees are applied there is often a higher cost for users from industry as for academic users.

RULES TO ACCESS THE PLATFORMS

USZ

Access to the research infrastructures at University of Szeged varies according to each platform and institution that hosts the facility. Interested parties should contact the person responsible for the platform and specify the type of service required to be evaluated. The cost model used depends on the users of the core facilities, a higher cost is applied for industrial users than for academic users.

RULES TO ACCESS THE PLATFORMS

U.Porto

Access to the platforms of the University of Porto varies according to each platform and institution that hosts the facility. Interested parties should contact the person responsible for the platform and specify the type of service required to be evaluated. Alliance partners should expect an expense that can include costs with human resources, maintenance, consumables, depreciation of equipment, among others.

RULES TO ACCESS THE PLATFORMS

LMU

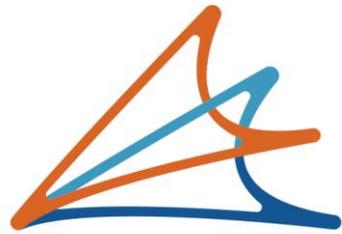
LMU has a cost model that depends on the users of the core facilities. Human resources for cooperative research with academic groups will be covered by the LMU and the academic partner is only charged for consumables and maintenance costs. Research done together with private institutions (i.e., industrial cooperations) will be charged according to a full cost model and according to European regulations.

Next steps in WP3

Memorandum
of
Understanding

Operational
handbook

Online
proposal form



EUGLOHRIA

THANK YOU!



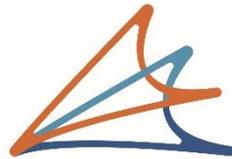
Co-funded by the Erasmus+ Programme of the European Union

<https://www.eugloh.eu/research/euglohria>

Annex 2

Presentations from Workshop #2

- 1) *University of Paris Saclay presentations*
- 2) *University of Lund presentations*
- 3) *University of Szeged presentations*
- 4) *University of Porto presentations*
- 5) *Ludwig-Maximilians-Universität München presentations*



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

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Paris-Saclay University

EUGLOHRIA WP3 – Workshop 2

11th May 2022, on-line conference



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Paris-Saclay ecosystem of platforms

What is Paris-Saclay University ? What about the platforms @Paris-Saclay ? And why choosing to have today a presentation from I2BC, IPSIT and SOLEIL ?

Frédéric DOLLÉ

université
PARIS-SACLAY



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>

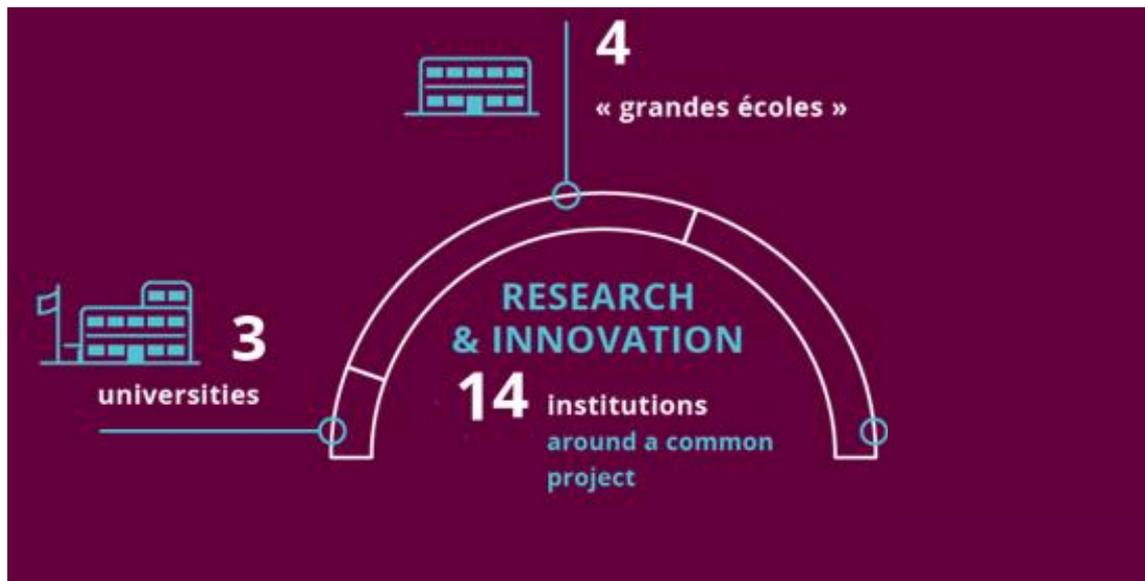
Paris-Saclay : 1 research University - 14 founding partners



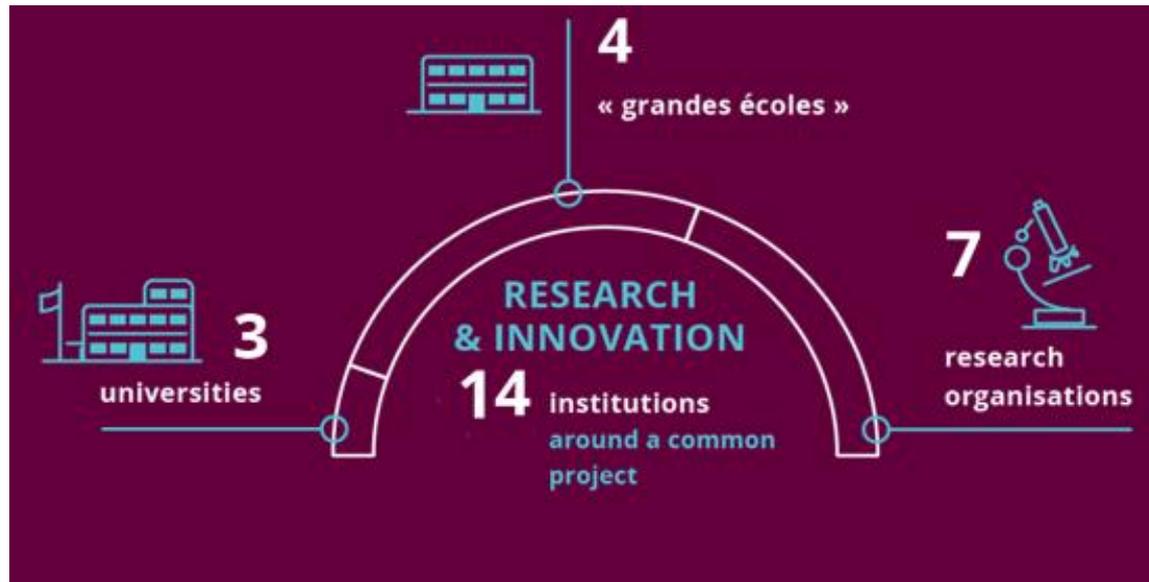
Paris-Saclay : 1 research University - 14 founding partners



Paris-Saclay : 1 research University - 14 founding partners

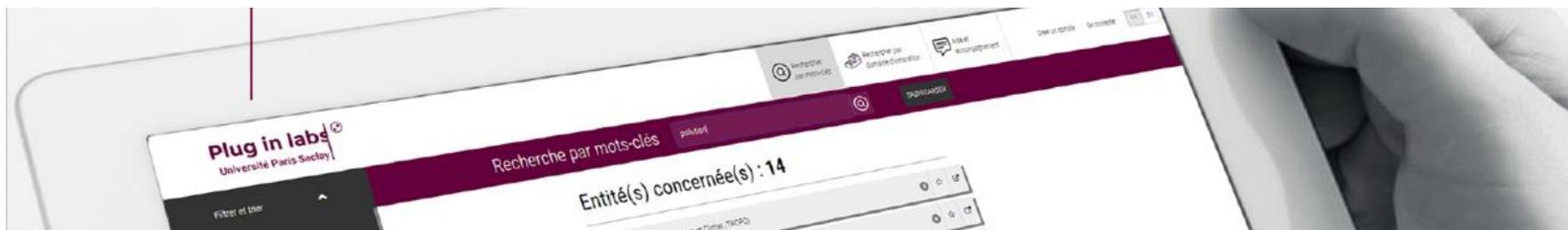


Paris-Saclay : 1 research University - 14 founding partners



One unique portal : PlugInLabs Université Paris-Saclay

One unique portal : PlugInLabs Université Paris-Saclay



PLUG IN LABS Université Paris-Saclay (PILUPS)

The unique portal chosen by the University of Paris-Saclay to showcase the skills, expertise and technologies of its laboratories **and platforms!**

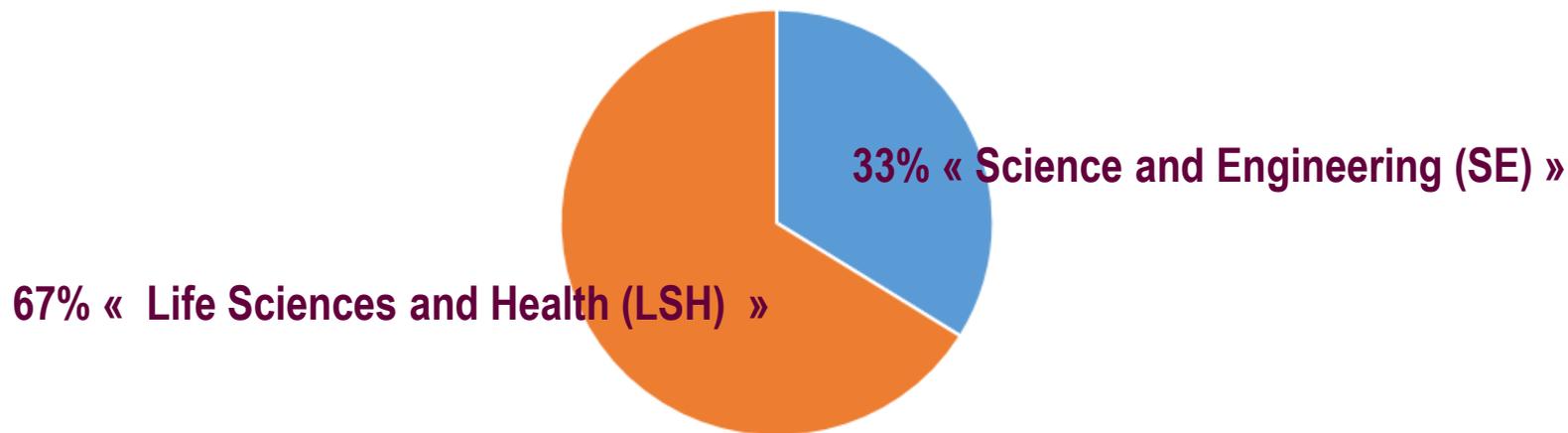


Plug in labs  Université Paris-Saclay | Accédez à la puissance de la recherche de l'Université Paris-Saclay

One web web : <https://www.pluginlabs-universiteparissaclay.fr>

What will you find in PlugInLabs Université Paris-Saclay ?

- ~ 330 entries corresponding to platforms *
- 222 affiliated to the « Life Sciences and Health (LSH) » domain
- 118 affiliated to the « Science and Engineering (SE) » domain



What will you find in PlugInLabs Université Paris-Saclay ?

The term "platform" is used in the Life Sciences and Health domain / sector in a "flexible" way, and includes :

- technical platforms
- technological platforms
- experimental infrastructures
- collections

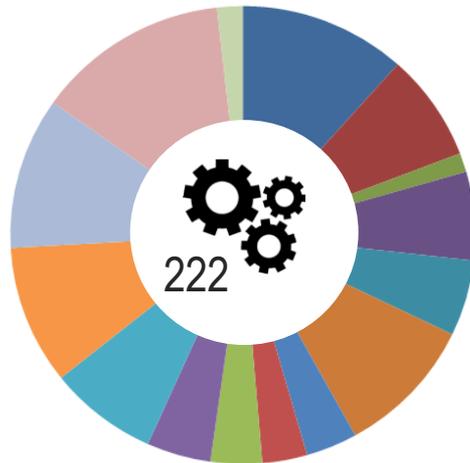


These platforms are laboratory spaces equipped with equipment (unique for some) or resource banks, associated with a strong human potential, operating them and maintaining them at the best technological level.

- **Open** to collaborations and/or services with public and private partners
- **1/6** IBISA certified and **1/12** AFNOR certified
- **> 1/3** associated with a national infrastructure
- **4/5** involved in training activities

What will you find in PlugInLabs Université Paris-Saclay ?

15 distinct typologies ** ***
(referentiel IBISA)

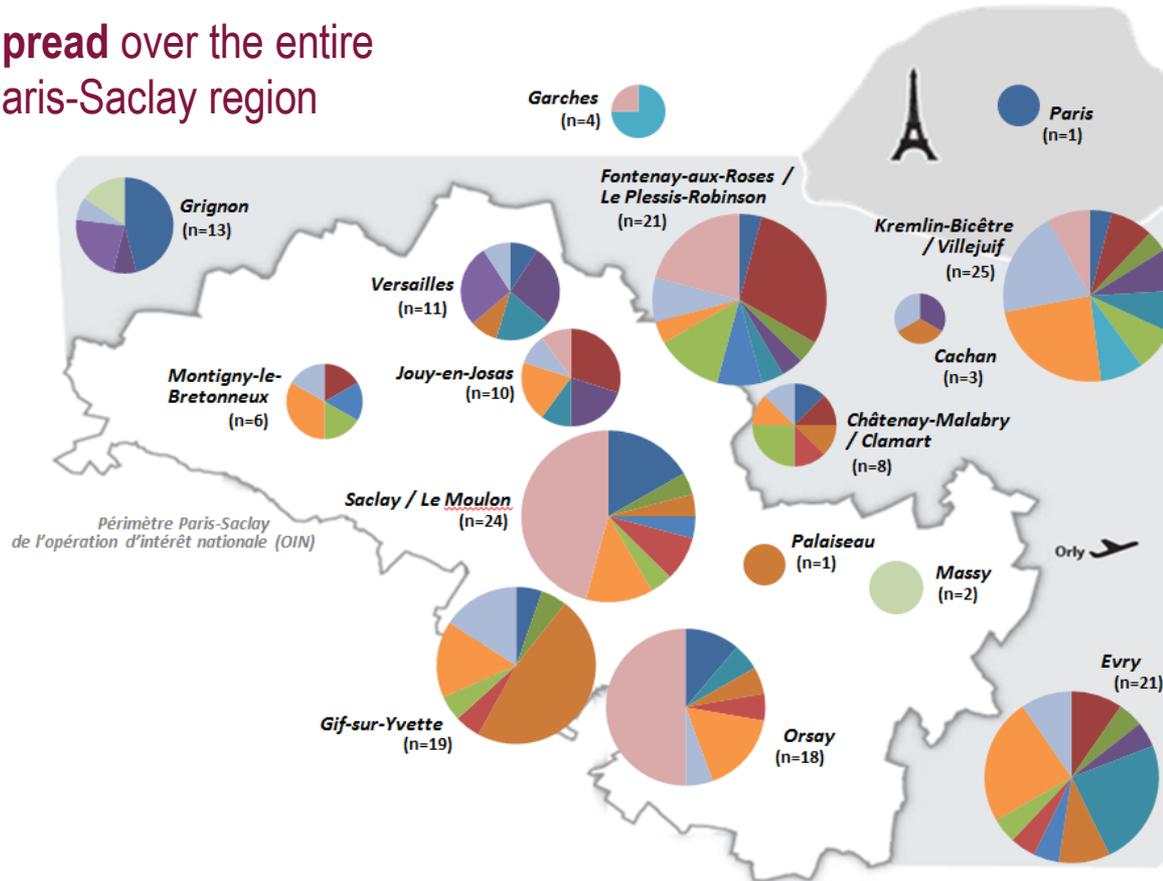


... 4 dominant typologies

- (24) ■ Physicochemical analysis
- 17 ■ Animal facility and functional exploration
- 3 ■ Others
- 14 ■ Biobanks / Biological Resources
- 12 ■ Bioinformatics
- 22 ■ Structural Biology / Biophysics
- 8 ■ Bioproduction
- 7 ■ Chemistry / Screening
- 8 ■ Cytometry / Histology
- 10 ■ Plant / agronomic experimentation
- 17 ■ Preclinical / clinical exploration
- 22 ■ Genomics / Post genomics
- 24 ■ Cellular Imaging
- 30 ■ In vivo imaging
- 4 ■ Food processes

What will you find in PlugInLabs Université Paris-Saclay ?

Spread over the entire Paris-Saclay region



Platforms, yes, but with different options to handle collaborations !

Platforms, yes, but with different options to handle collaborations !

Platforms linked to an UMR (Mixed Research Unit)



Platforms linked to an UMS (Mixed Service Unit)



Platforms linked to a (public) civil society (French law)



Associated to université PARIS-SACLAY

Platforms, yes, but with different options to handle collaborations !

Platforms linked to an UMR (Mixed Research Unit)



université
PARIS-SACLAY



15 platforms

Platforms linked to an UMS (Mixed Service Unit)



université
PARIS-SACLAY



11 platforms

Platforms linked to a (public) civil society (French law)



Associated to université
PARIS-SACLAY

27 platforms

53 platforms – 25% of the Life Sciences platforms cited in the Whitebook (D3.1)



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Transformation through Joint Research and Innovation Action

Platforms belonging to I2BC

Institute of Integrative Biology of the Cell
UMR9198 – Paris-Saclay University, CEA, CNRS

Sandrine LECART, Jean-Baptiste CHARBONNIER



This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



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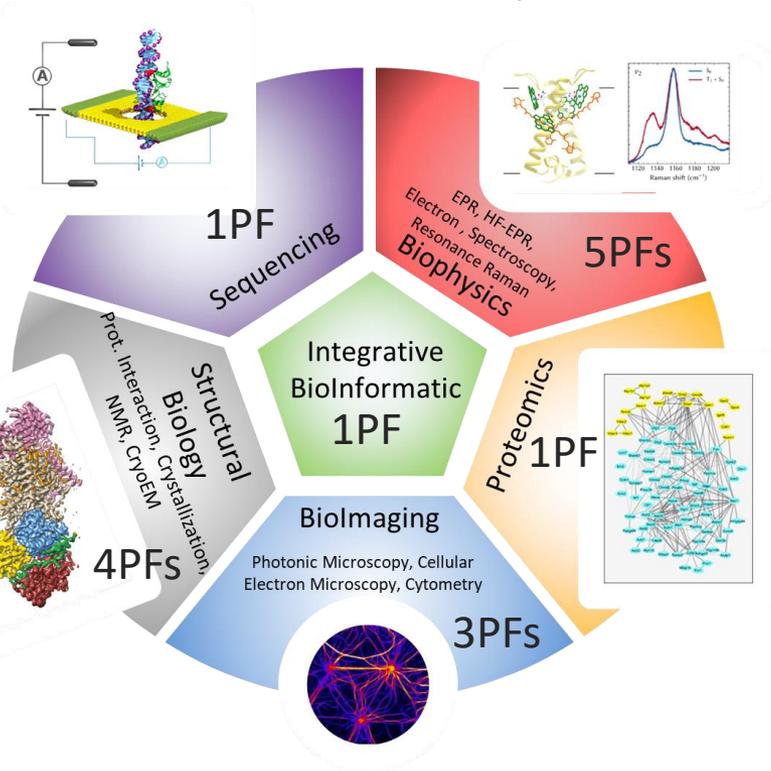
Brief presentation of the platform



15 I2BC Platforms organised in 6 sectors

Dir JB Charbonnier - Deputy S L cart

Cutting-edge approaches to explore cells, organites, molecular machineries from mm to  , from days to fs, in an integrative manner



2 main types of platforms

- ✓ Fully open Platforms (7)
 - With validated tariffs for prestations
 - Commercial setups
 - Free access to setups after trainings

- ✓ Collaborative platforms (8)
 - Mainly financed by grants : ANR...
 - Handmade setups
 - Access under collaborations

All are open to the **entire scientific community**

15 I2BC Platforms organised in 6 sectors

Dir JB Charbonnier - Deputy S Lécart

- ✓ 14 Platforms are labelled by **IBiSA**
(Biology, Health and Agronomy Infrastructures)
- ✓ 14 Platforms belong to **4 National Infrastructures**



FRANCE-BIOIMAGING



FRANCE
GENOMIQUE



ifb
INSTITUT FRANÇAIS
DE BIOINFORMATIQUE

- ✓ All are **well integrated in Paris Saclay University**
Networks : Biolmaging: RIC, MS, NMR

Plug in labs 
Université Paris-Saclay

- ✓ 4 Platforms have quality control labels (**ISO9001 / NFX50-900**)

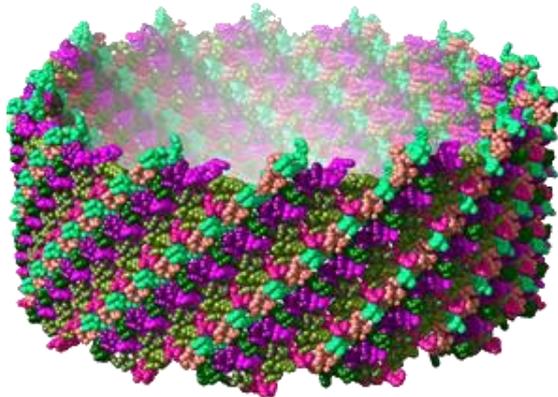
Some highlights, main setups and expertises

- **Structural Biology Sector :**

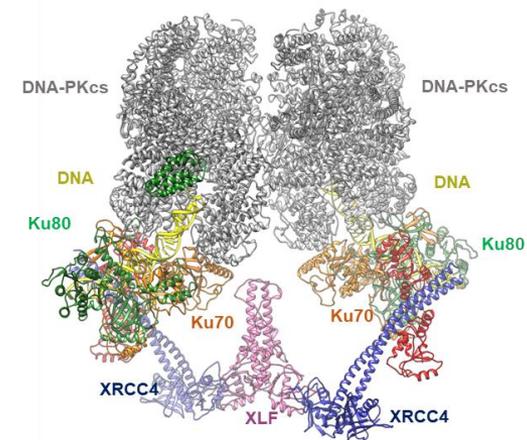
- **CryoEM platform**

- 200 kV and 120 kV microscopes (Tecnai FEI) + camera (K2 Gatan)

- Coordination with **SOLEIL synchrotron** of a project with national foundings (CPER):
for a **300kV@SOLEIL**
and a last generation **200kV@I2BC (opening 2023)**



CryoEM structures of lanreotide nanotubes at 2,5Å (L Pierri, 2022, PNAS)



DNA repair supercomplex at 4.3Å (A Chaplin, 2021, Mol Cell)

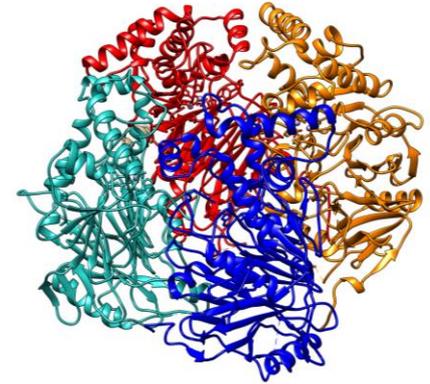
Some highlights, main setups and expertises

- **Structural Biology sector :**

- **Protein Crystallisation**

4 Pipeting robots, 3 Rock Imager visualization robots,

R&D: [developments on membrane proteins](#)



- **NMR**

High field (600 & 700 MHz) NMR spectrometers equipped with ^1H , ^{15}N and ^{13}C TCI cryoprobes

R&D: Kinetic of [phosphorylation events](#) at residue resolution - [IDP](#) functions

[Design of peptides](#) to inhibit key functions - [in cell](#) NMR

- **Platform for Interactions of Macromolecules**

13 instruments for protein interactions and characterization: Calorimetry (6), BLI, AUC-fluo, Thermophoresis, switchSense, nanoDSF, SEC-MALS (soon)

R&D: [Artificial binders \(alphaRep\)](#) against any protein target

Some highlights, main setups and expertises

- Biophysic sector : 5 facilities**

State-of-the-art methods for the characterisation of biological objects (from single molecules to whole organisms) by optic and magnetic spectroscopies

Super-resolution fluorescence nanoscopy

In-house set up (resolution of 25 nm)

Resonance Raman spectroscopy

Several spectrometres for Resonance Raman including confocal RR.

Conventional EPR and High magnetic-field/frequency EPR

Pulse and cw EPR spectrometers

CW 95/190/285 GHz/10 T

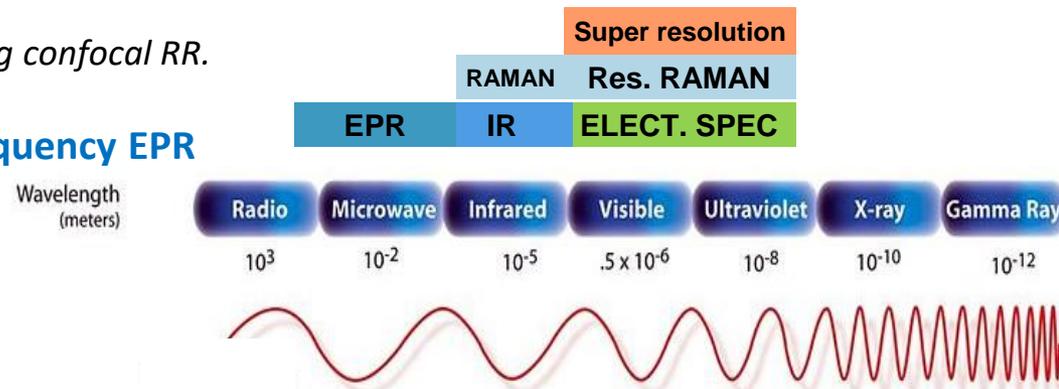
Pulse 95 GHz (AWG and 400 mW module)/6 T

Fourier transform infrared spectroscopy

Time-resolved FTIR (100 ns time resolution)

Electronic spectroscopy

In-house Transient Absorption Spectroscopy (300 ps to s)



Some highlights, main setups and expertises

- Proteomic sector : Proteomic-Gif**

Standard offers :

Sample preparation, Exact mass measurements, Identification of proteins

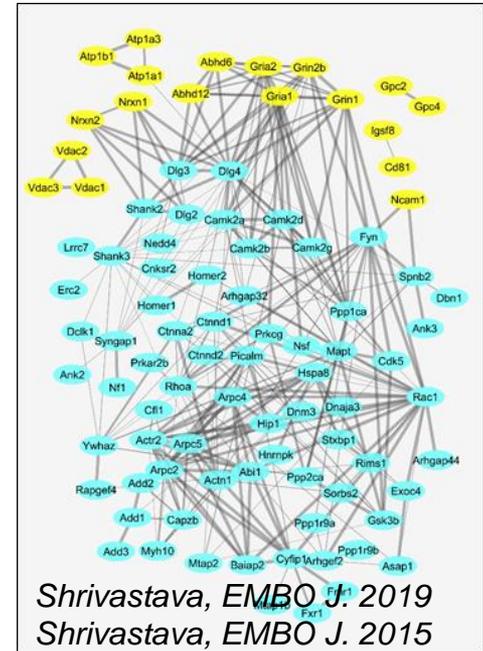
R&D: Relative quantification, Interactomics, Protein modifications (PTMs, chemical modifications)

- Sequencing sector : NGS platform**

Short Reads on Illumina sequencing

R&D : Long reads on Nanopore sequencing, Data analysis

Membrane interactors of insoluble protein aggregates



Nanopore GridION X5

Some highlights, main setups and expertises

- **BiImaging sector : 3 platforms**

Light Microscopy PF :

3 confocal microscopes, 2 spinning disks, 3 wide fields, 1 microscope and 1 PALM/STORM, 1 SIM microscope (2022)

Electron microscopy PF:

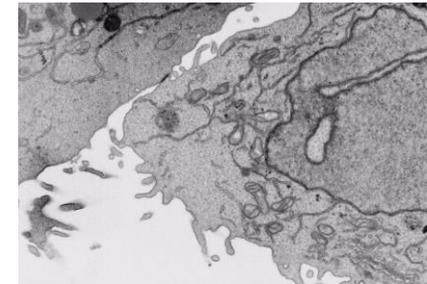
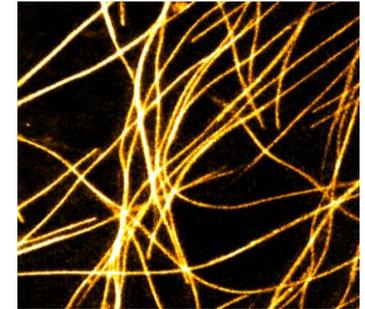
From sample preparation to 3D volume analysis

2 TEM microscopes, 1 FIB-SEM (2022)

Cytometry PF :

1 analyser and 1 cell sorter, 1 cell sorter in L2 lab (2022)

R&D: Biosensors, super-resolution, CLEM

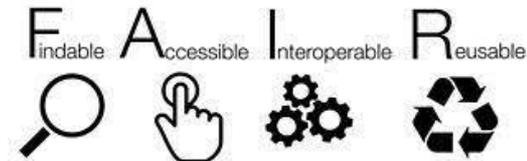


- **Bioinformatic sector :**

Development of innovative bioinformatic resources

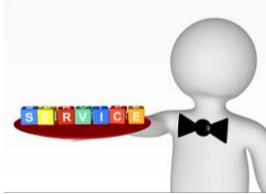
Organization of training in Bioinformatic.

Facilitate development of integrative bio-informatic



To sum up : Some global metrics on our 3 missions

□ Services



500 Users on 15 PFs

(51% I2BC, 27% UPSay, 19% national, 1% international, 2% industrial)

36.5 Full Time Equivalent to manage requests (55 persons involved)



□ R & D

60 Publications

ANR associated to PF developments



□ Training

235 trained users /year

280 students/industrials trained by courses

11 national and european Workshops

Meetings organization (BSI2021 in Saclay)



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Topic 1 : Handling incoming requests for facility usage



Access : <https://www.i2bc.paris-saclay.fr/facilities/>

head of the facility

@

Fully open Platforms

Collaborative Platforms



User's Needs

User's Needs

Feasibility

Feasibility

No
Advices to users

No
Advices to users

Yes

Yes

Autonomous access

Assisted access

R&D project

Collaborative project

Training & help

Services

Collaborations

gipsi.i2bc.paris-saclay.fr



Results
Billing process
Valorisation

Results
Grants
participations
Valorisation



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Topic 2 : Determination of costs / fees / remuneration for facility usage



- ✓ Tariffs are calculated on **full costs** and validated by CNRS with 3 levels of pricing

Institute price	Academic price	Industrial price
without permanent salaries without infrastructure costs (fluids, electricity...) with non permanent salaries	without permanent salaries with infrastructure costs (fluids, electricity...) with non permanent salaries	with all costs

- quotation establishment with the financial department
- record of booking hours/sessions
- request for a purchase order



specific contracts

- ✓ Every prices are accessible on web sites (I2BC web site)
- ✓ For long projects > 3 months or for collaborative PFs : Grants foundings



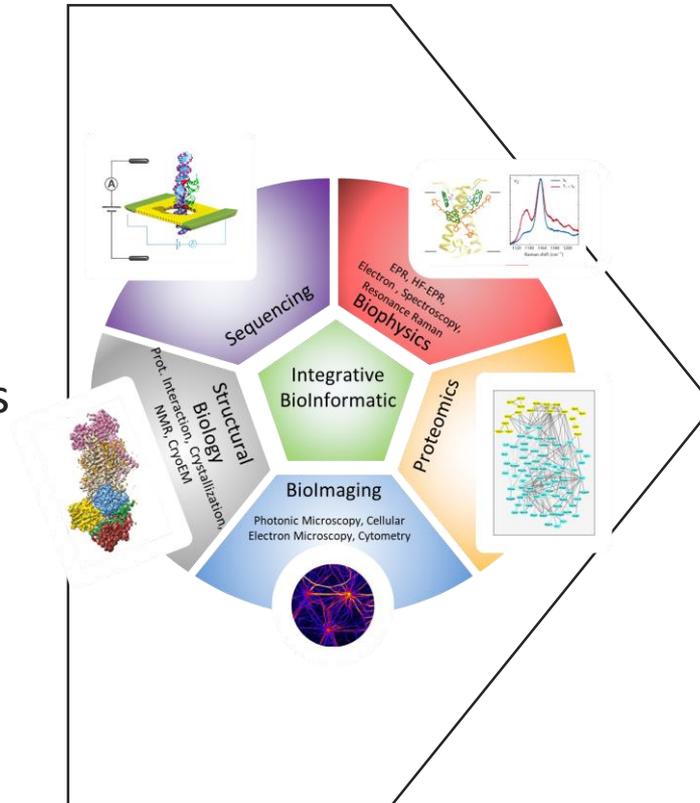
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Topic 3 : About IP rights and publication of scientific results



Contact with PFs

- Communication tools
book & seminars
meetings, website
- National infratructures
- Univ P Saclay (SATT),
CNRS, CEA



Contracts

- NDA, CDA
- Access units at full cost
- Contracts
- CIFRE PhD
- Common laboratory
- Industrial calls

All users are invited to sign the charter of use of the platforms



Service

Participation

Valorisation

- Sequencing
- Imaging
- Protein interactions
- Proteomics analysis
- Biophysics technics
- Biostructural analysis
- Bioinformatics calculations

- Standard protocols
Standard contribution

- Methodological, instrumental development /optimisation
- Design of experimental conditions
- Constructive data analysis interpretations
Major contribution

Facility
acknowledgement

Facility
acknowledgement
+
Engineers on
author list



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BioImaging : SandrineLécart

Proteomics: Virginie Redeker

Integrative bioinformatics : Raphaël Guerois and

Structural Biology : Herman Van Tulbeurgh

Olivier Lespinet

Sequencing : Céline Hernandez

Visit our website:

<https://www.euglohria.eu>

<https://www.i2bc.paris-saclay.fr/facilities/>



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Platforms belonging to IPSIT

Ingénierie et Plateformes au Service de l'Innovation Thérapeutique
US31, UAR3679 CNRS – Paris-Saclay University, INSERM, CNRS

Valérie DOMERGUE, Stéphanie YEN-NICOLAÿ



This project has received funding from the European Union's Horizon 2020
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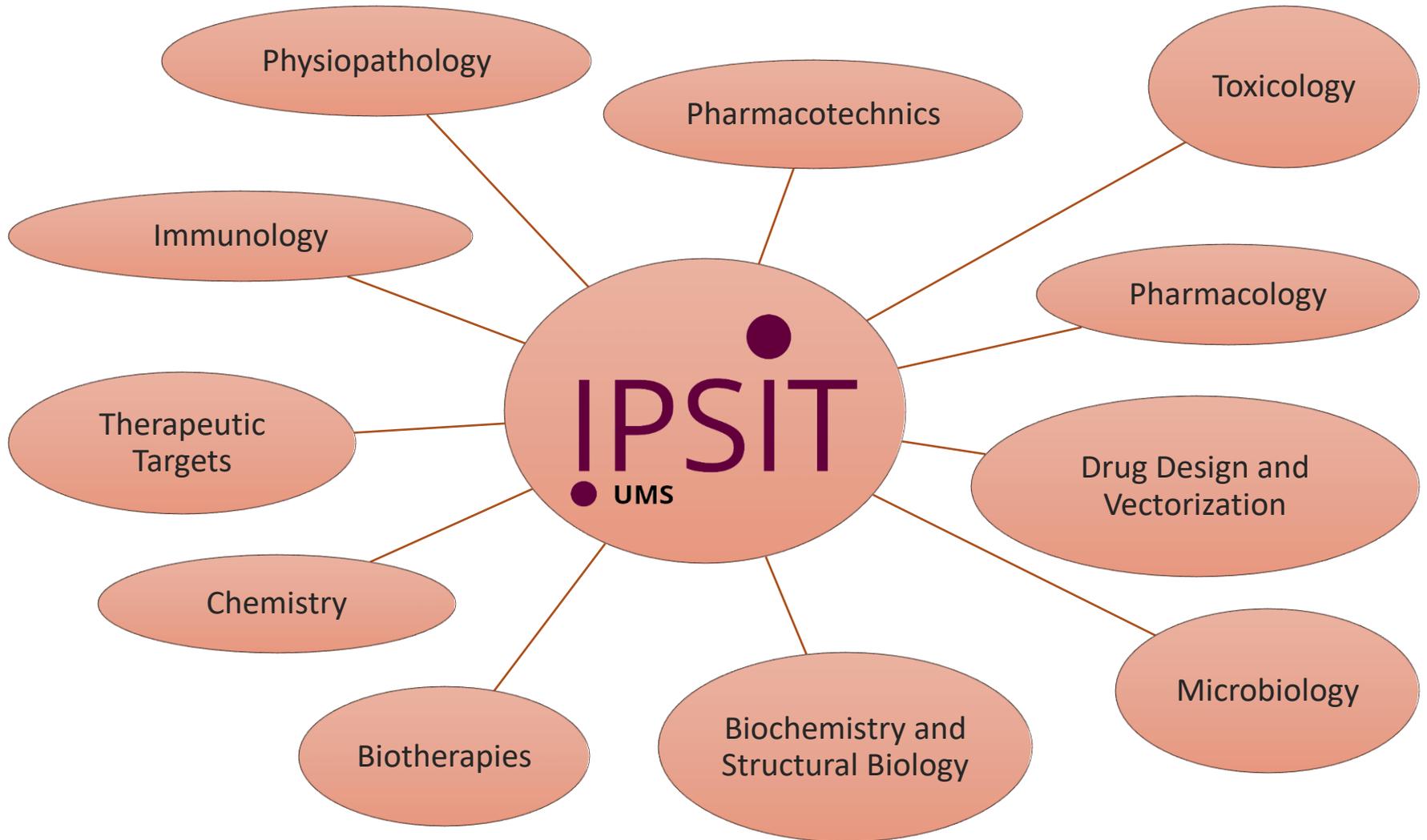
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Brief presentation of IPSIT Center

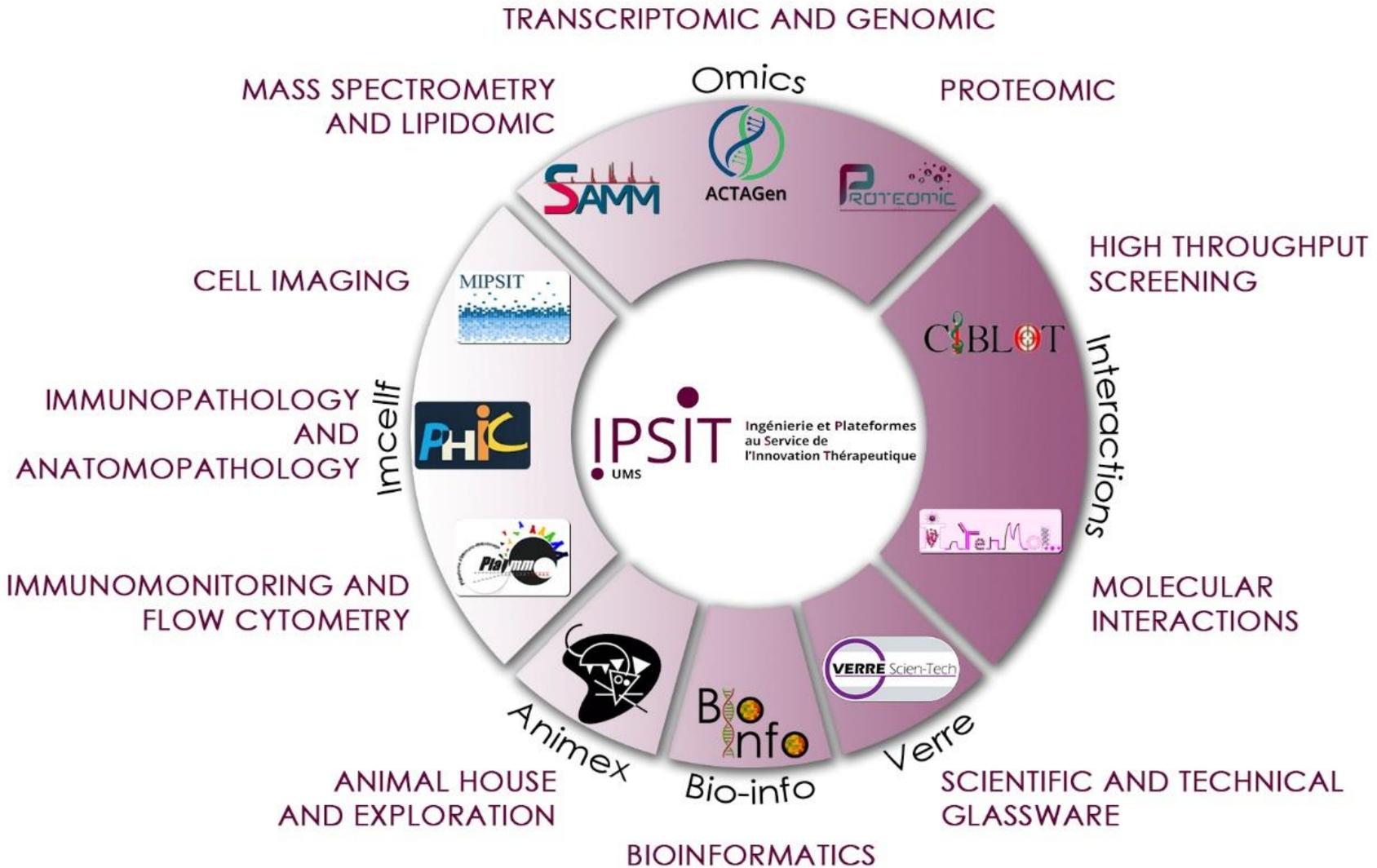




First floor



UMS IPSIT: 11 facilities of expertise



PROTEOMIC



- The platform provides **qualitative and semi-quantitative comparison of proteoms reflecting different states of a biological system**. LCMS system is dedicated to the characterization of proteins of interest involved in biological processes. This approach leads not only to the understanding of mechanisms, but also to the identification of new therapeutic targets or even biomarkers of pathologies and their therapy.
- Member of network proteomic platforms of Paris-Saclay **P2S**

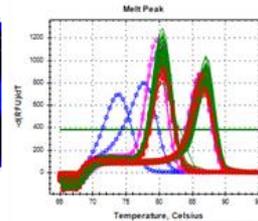
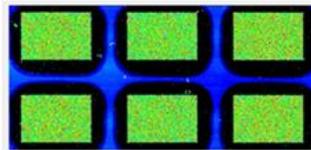
Acquity UPLC M-Class chromatographic system on-line with Xevo® G2-XS Q-ToF mass spectrometer



ACTAGEN



- The platform offers technologies for the **quantitative and comparative analysis of transcriptomes**, which allow the characterization of different states of a biological system through the transcriptional expression of its genome. These approaches can be used not only to understand physio-pathological mechanisms, but also to identify new therapeutic targets or biomarkers of pathologies and their therapy. The platform is also equipped to characterize **genetic and epigenetic variations**, or the thermostability of proteins.
- Member of network genomic platforms Paris-Saclay **GENOPS**



Thermal Cyclers
Hybridation oven, microarrays scanner
Spectrophotometers
Microfluidic electrophoresis
Robotics



SAMM



- Drugs and metabolites analysis department (SAMM) is a mass spectrometry facility dedicated to **small molecules structural analysis and quantification** and to **lipidomic profiling**. SAMM offers access to 1 mass spectrometer coupled to liquid chromatography (LC/MS) and 1 mass spectrometer coupled to gas chromatography (GC/MS).
- Member of consortium "Mass Spectrometry for Chemistry and Health" Paris-Saclay **SMaCS**



LTQ Orbitrap Velos Pro
double RSLC Ultimate 3000
THERMOSCIENTIFIC®
HPLC Ultimate 3000
détection UV et CAD

MIPSIT



- The platform offers expertise and access to cutting-edge technological tools in the field of **photonic microscopy and image analysis**. Visualization of the localization of molecules of biological interest or monitoring of dynamic processes in the three dimensions of space at the tissue, cellular or subcellular levels is an essential methodological approach in the understanding of human pathologies.
- Member of network cellular imaging Paris-Saclay **RIC**

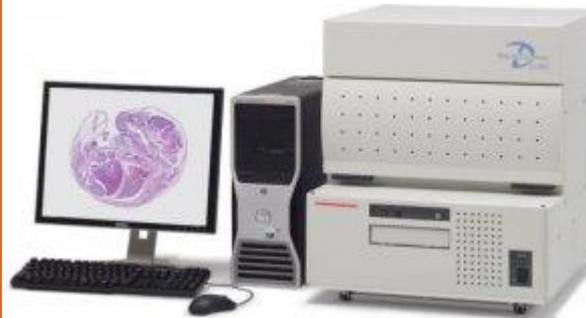


Microscope confocal
Gated-STED
(TCS SP8 Leica®)

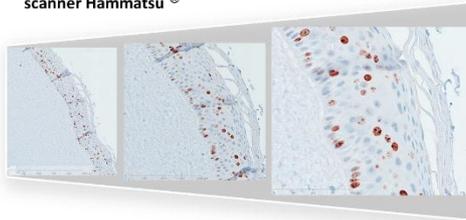
PHIC



- The platform offers expertise in the field of **immunopathological analysis** of genetically modified mice, of animal inflammatory models and in hematological human pathologies. PHIC offers modular services, ranging from technical advice for the realization of animal models to morphological and *in situ* analysis



scanner Hamamatsu™



PLAIMMO



- The platform offers expertise for the realization of fundamental and **preclinical research projects on experimental animal models** or clinical research protocols in humans. The platform can develop new applications depending on the technological potential of the equipment. **Flow Cytometry** equipment allows the phenotyping of cells by the detection of membrane and intracellular molecules and high-throughput cell sorting.
- Member of French Association of Cytometry



Flow cytometry
BD LSR-Fortessa
BD FACS Aria IIIu Sorter
Software: Diva, FlowJo

Electrochemiluminescence
MSD QuickPlex SQ120



CIBLOT



- Main objectives of the platform are to identify, by **high-throughput screening**, new chemical entities endowed with biological activities in order to develop molecular tools for research and molecules for therapeutic purposes and to constitute a collaboration interface between biology and chemistry allowing the transfer of skills.
- Member of network targeting platforms Paris-Saclay **C@PS**



*Integrated robotic station:
Envision® (plate reader)
Biomek®FX
(Robot Beckman Coulter)
Cytomat®(ThermoElectron Corp.)*

INTERMOL



- The platform offers an integrated tool dedicated to the detailed study of molecular interactions. Molecular interactions play a central role in the living world, whether they are **interactions between proteins, glycoproteins, lipoproteins or between DNA or RNA molecules**. In the pharmaceutical field, knowledge of the interactions between macromolecules and molecules of pharmaceutical interest, with extremely varied physico-chemical properties, is essential for designing and studying new active ingredients.
- Member of Association of Resources for Biophysical Research in Europe



*Biacore T100,
GE Healthcare®
Localized at I2BC*

AnimEx



- Its main mission is to offer the scientific community of the public or private sector, **animal accommodation and breeding facilities and equipment for the functional exploration of the small animal.** **Cardiovascular exploration** Echocardiograph vivid 9, LAZR-X, Plethysmograph, telemetry, **In vivo imaging** IVIS Lumina III, **automated behavioural tests**, Hypoxia chambers.
- Member of Consortium of Animals Facilities Paris-Saclay **CAPSud**



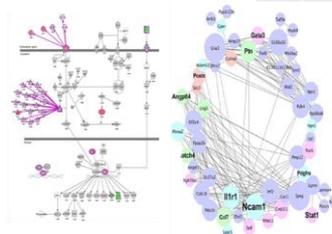
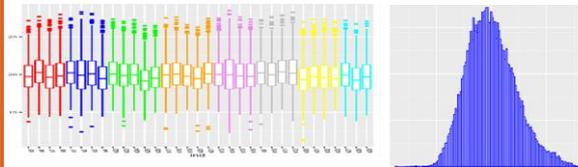
LAZR-X
High Resolution 3D
Ultrasound +
Photoacoustic
imaging

BIO-INFO



- The platform offers services in **bioinformatics, biostatistics and omics analysis.** Focus is on collaborative work to ensure a good follow-up of projects over time and to ensure the training of our users in functional analysis.
- Member of Paris-Saclay network Les rendez-vous BioAnalyse

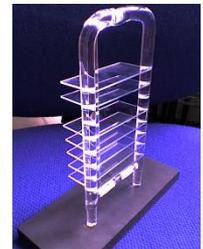
INGENUITY
PATHWAY ANALYSIS



GLASS-SCIEN-TECH

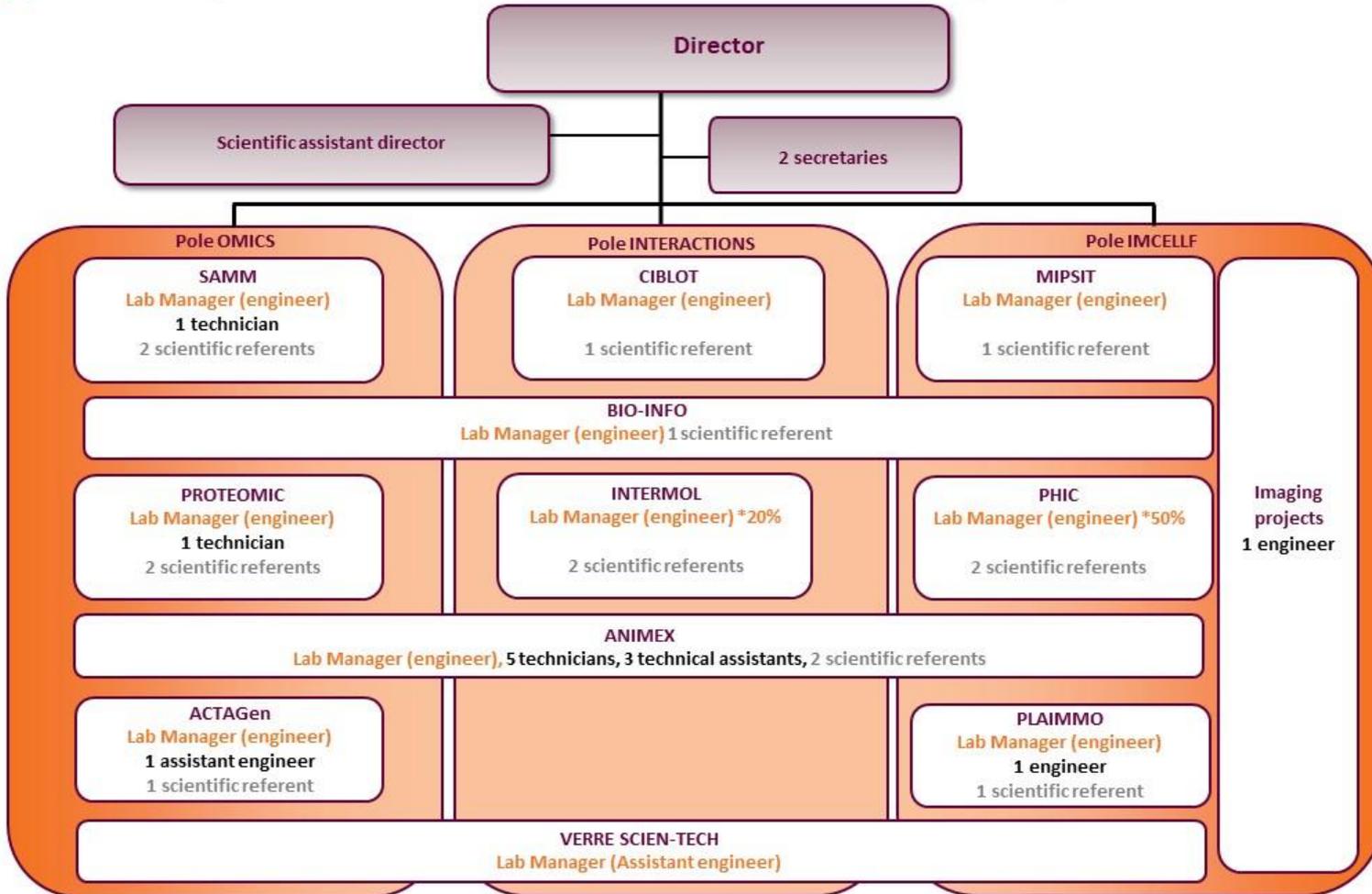


- The platform offers the study, design and production of glass devices and similar materials for scientific use for research and teaching. It also offers expertise in the field of glass products.
- Member of French association of glassblowers 



Compétences ressources

Ingénierie et Plateformes au Service de l'Innovation Thérapeutique - UMS IPSIT – US31 – UAR3679



* Made available

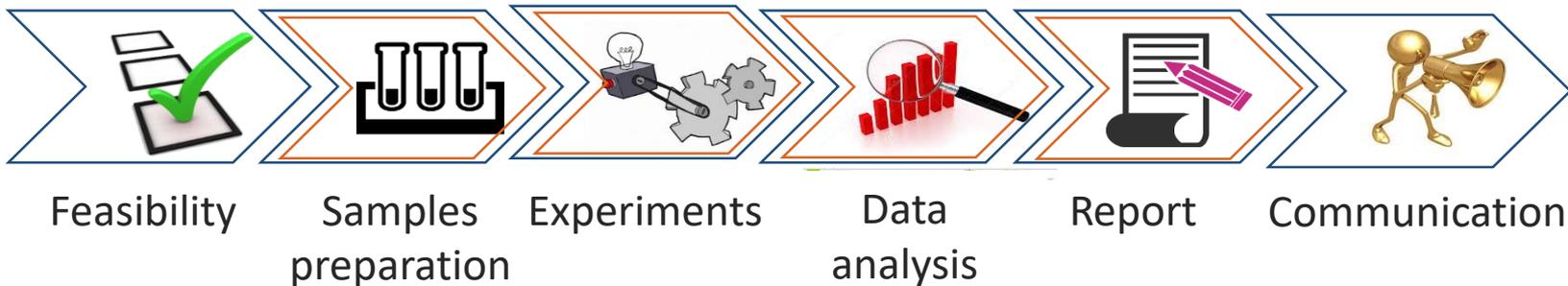
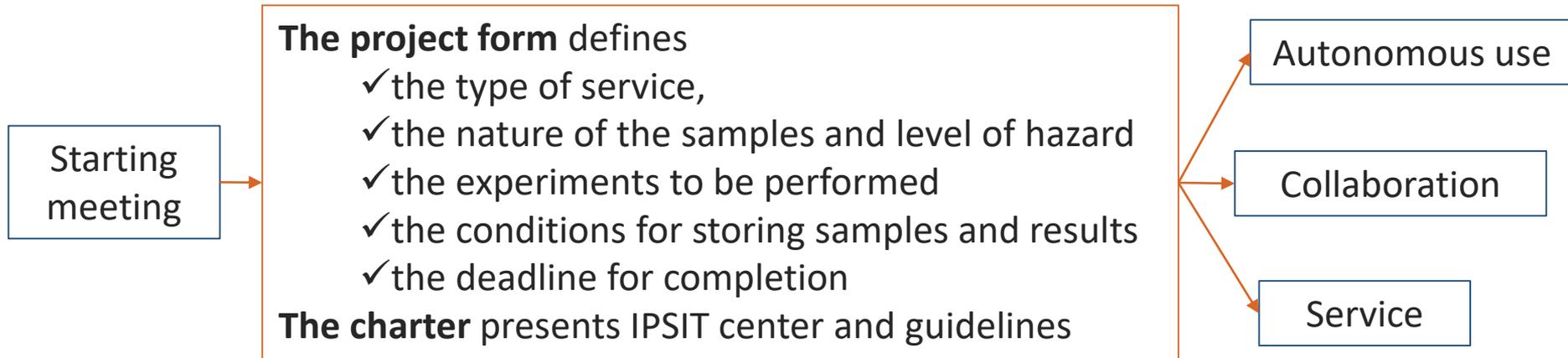


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Topic 1 : Handling incoming requests for facility usage



Topic 1 : How are handled the incoming requests for facility usage ?



- Operational management
- Project handling workflow

Topic 1 : How are handled the incoming requests for facility usage ?

- Since 2 years IPSIT is working with a quality specialist to write its Quality Management System.
- Objective for all or part of IPSIT is to be Iso-9001 labelled in 2023
- The Platform CIBLOT is labelled “IBISA” with all the platforms of network targeting platforms Paris-Saclay C@PS

IBiSA ● Infrastructures
en Biologie
Santé et
Agronomie



The European University Alliance for Global Health –
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Topic 2 : Determination of costs / fees / remuneration for facility usage



Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

- Detailed fees are validated and published each year by the Governing Board of Paris-Saclay University:
 - ✓ Instrument use: cost price are calculated according to allow payment of corrective and maintenance contracts,
 - ✓ Lab products and supplies are charged to the users
- Fees are adjusted to lab type :
 - ✓ Rate 1: Lab contributing with 5% of their research credits to UMS IPSIT
 - ✓ Rate 2: Academic labs from Paris–Saclay University
 - ✓ Rate 3: French academic labs
- Quotation including full costs is designed for private organizations



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Topic 3 : About IP rights and publication of scientific results



Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

- The charter defines the rules of signature and acknowledgement, depending on the type of service:
 1. **Autonomous use or Service** : the platform and/or its staff are mentioned in the acknowledgements of the scientific communications.
 2. **Collaboration leading to relevant results** : the staff is co-author of the scientific communications and must at least validate the paragraphs related to the facility activity before submission.
- In all cases, the platform must be informed of any scientific communication to which its equipment and/or staff have contributed.
- According to the charter, all results belongs to the users and staff cannot share or discuss them outside the collaboration established on the project sheet for 5 years.
- In agreement of the project leader, facilities' staff can communicate scientific results in national and international congresses, in the form of oral or poster presentations



Get in touch:

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Our website: <https://www.ipsit.universite-paris-saclay.fr/?-ums->

Visit our website:

<https://www.euglohria.eu>



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Platforms belonging to SOLEIL

a large infrastructure, and a public company according to the French law (CNRS, CEA, associated to Paris-Saclay University)

Frédéric JAMME, Jean SUSINI





The European University Alliance for Global Health –
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Brief presentation of the platform



General information



- **Civil company**, subsidiary of **CEA** and **CNRS**, created in **2001**
- **63 million** budget, construction: **€400 million**
- 450 employees (**350 permanent**) including ~ 50 students in training, ~ 150 researchers, 60 other professions
- **Open** to users since **2008**
- **Inauguration** on **18 December 2006**
- Training Provider
- CIR approved



A Dual Mission

Center of services to research and industry and Scientific research Center

TR2ED



- **3 505 users, 702 publications** (including SOLEIL) in 2021
- **143 industrial projects** in 2021, 10 with NDA (134 en 2020)
- **1000th** industrial experiment in 2021
- **~ 5 000 users visits / year** et **6 000 visitors / year** (various audiences)
- Numerous partners, dedicated platforms, in relation with competitiveness clusters (Cosmetic Valley, Movéo...) and technologic clusters (Opticsvalley)

Properties of synchrotron radiation



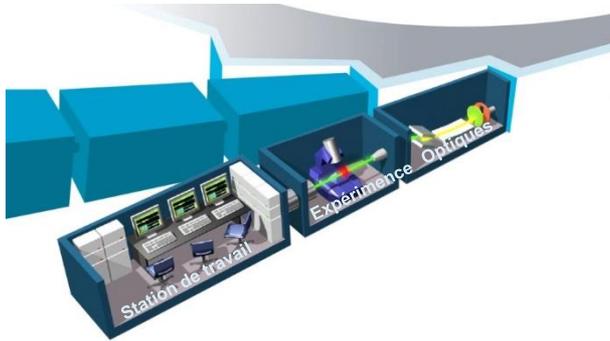
- « **White** » light, continue and tuneable (ranging from THz to hard X-Rays (100 keV), with a high selectivity)
- **Extreme brilliant** source and low divergent beam (intense and focused on few dozens on nm, sensitivity, exposition)
- **Coherence** (for phase contrast imaging)
- **Polarized** light (linear or circular), symmetries of molecules, magnetic phenomena
- **Pulsed source** (50 ps every 3 ns) for dynamic and ultra-fast phenomena
- **High stability** (mechanic and intensity) thanks to continuous injection (small samples, accuracy, reliability of the results)

Significant performance gains compared to laboratory equipment: signal to noise ratio, accuracy (spatial and temporal resolution) sensitivity of measurements, chemical selectivity, possibility of microanalysis (micron scale and below) and imaging, monitoring of ultrafast chemical reaction (*in situ*, *in operando* measurements)...

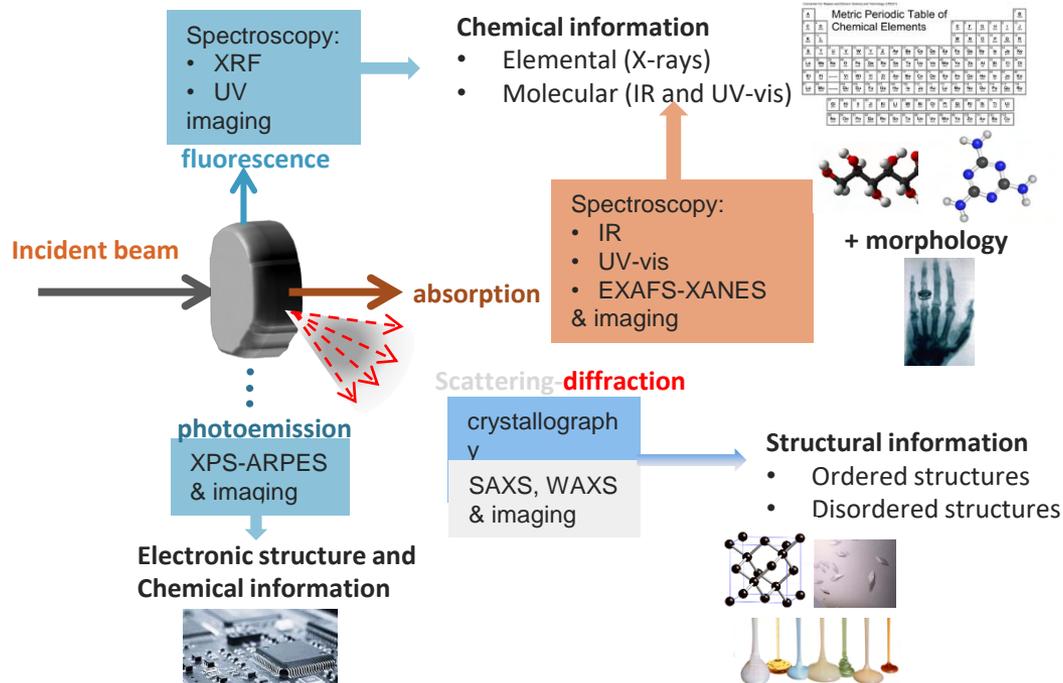
Specific techniques: X ray absorption, phase contrast tomography, X-ray microscopy...

Our offer: a relevant **expertise in scientific instrumentation + cutting edge analytical tools** (29 Beamlines), based on photonic techniques for **Multi-modal** (combination of techniques) and **multi-scale** (from macroscopic to atomic) **investigations**

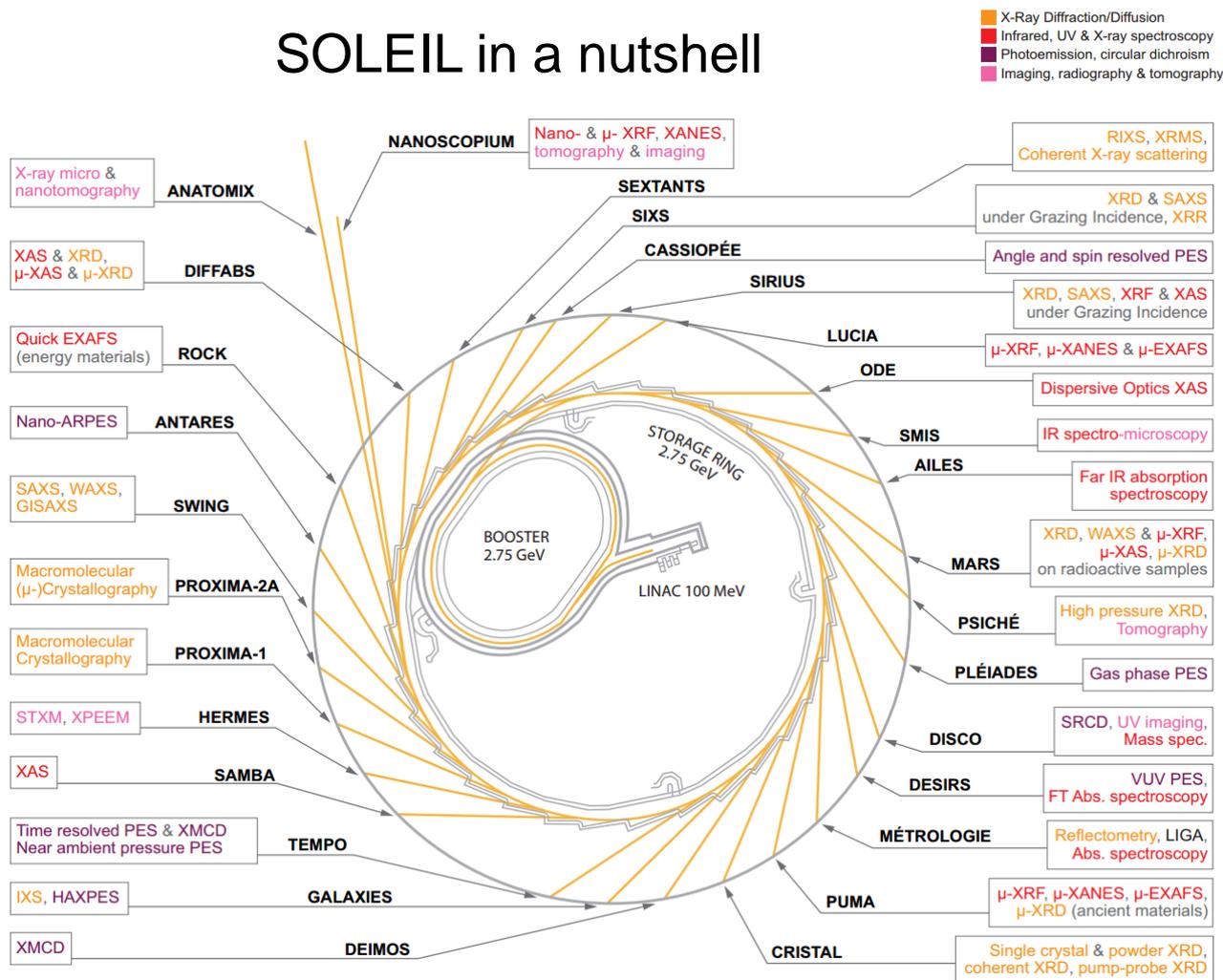
29 experimental specialized stations (beamlines), 29 operational



- ✓ scattering, diffraction (12 BL), absorption and fluorescence spectroscopies (18 BL), imaging (7 BL), surface analysis (11 BL), tomography (3 BL), 2 specific BL (metrology@ λ , and for radioactive materials)
- ✓ Some beamlines combine several characterization techniques
- ✓ Numerous sample environments on each beamline

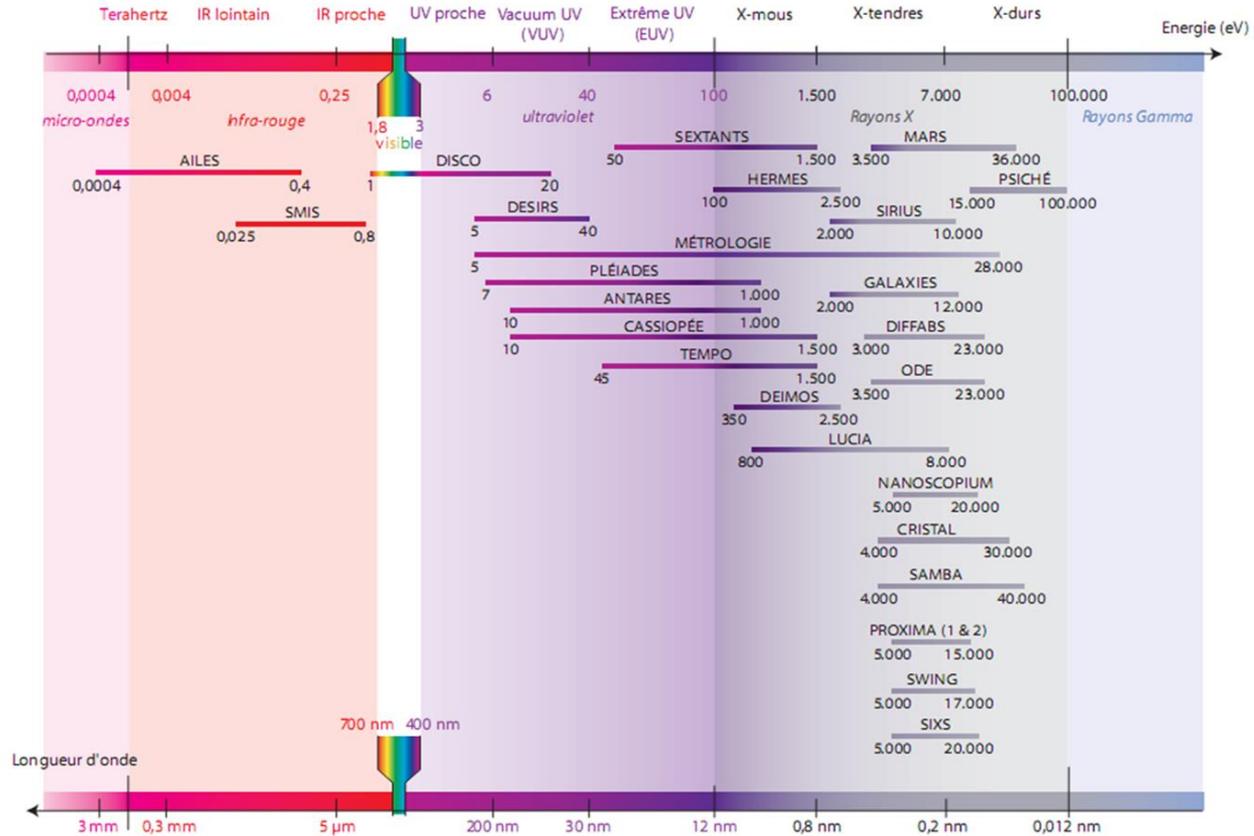


SOLEIL in a nutshell



+ 7 support laboratories: chemistry x2 , biology x2, surfaces, high-pressures, micro-fluidics

9 orders of magnitude in energy





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage



☐ Access Modes @ SOLEIL

Standard Access

- Based on a **twice a year** call for proposal;
- Proposals are evaluated by 6 International Peer Review Committees (PRC);
- Submission deadline: mid February and mid September for beamtime starting 6 months after submission.

BAG Access

- Thematic and/or geographical grouping;
- Users encouraged to form BAGs to improve efficiency and frequency access;
- Duration of a MX and BioSAXS BAG is 2 years and other BAG is 1 year / Both 1 call per year;
- Submission deadline: Mid September for beamtime starting 6 months after submission.

Rapid Access

- **A very limited** number of projects may be accepted for test/in house research or urgent work selected by internal scientific committee

Charged Access

- Mainly for **industrial applications**



□ Beamtime Access Partition @ SOLEIL

Up to 5% for Rapid Access

Can be included in PRC beamtime if not given

Up to 10% for Industrial beamtime

Can be included in PRC beamtime if not given

20% for In house Research

Can be increased up to 25% for associated research (5% for indus beamtime)

65% for Peer Review Committees Proposals

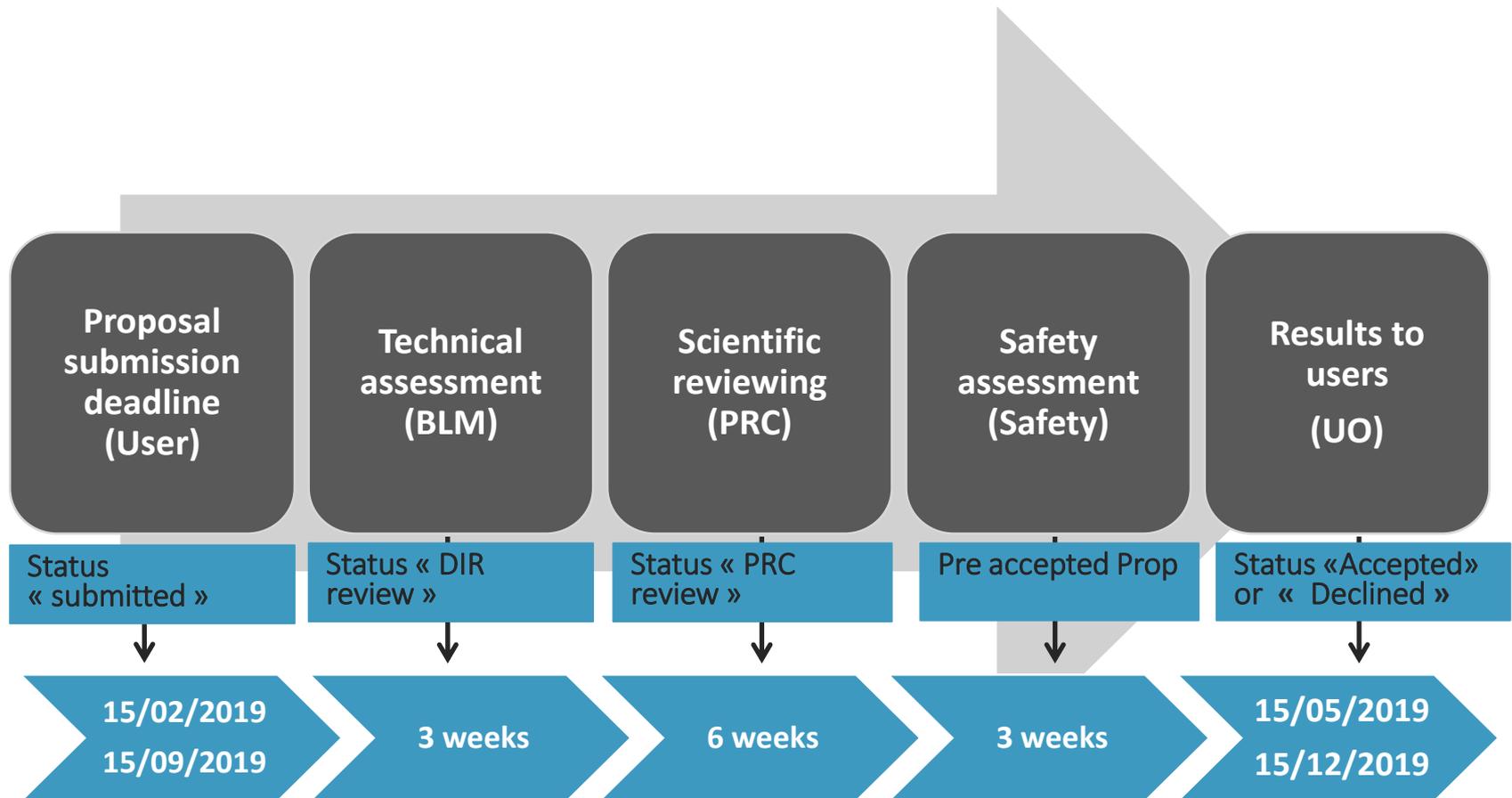
Can be increased up to 80%



6 independent Peer Review Committees at SOLEIL

- PRC1: Diluted matter;
- PRC2: Electronic and magnetic properties of matter / surfaces and interfaces;
- PRC3: Properties of matter and materials: Structure, Organization, Characterization, Synthesis;
- PRC4: Chemistry and physical-chemistry / in situ Reactivity / Soft matter;
- PRC5: Biology and health;
- PRC6: Ancient materials / Earth and environmental sciences.

Proposals workflow/process





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage



**Standard
Access**

- selected by scientific committee, free of charge

BAG Access

- selected by scientific committee, free of charge

**Rapid
Access**

- selected by scientific committee, free of charge

**Charged
Access**

- Mainly for **industrial applications**

How are determined the costs/fees/remuneration of facility usage ?

**Charged
Access**

- Mainly for **industrial applications**

- **Price based on:**

- Full costs (operation + maintenance + investments + dismantling) evenly distributed over 29 beamlines
- The time spent (time.equipment and/or time.person)
- The level of service requested by the user:
 - Use of a beamline
 - With/without collection of the experimental data by a beamline scientist
 - With/without processing and analysis of the experimental data with submission of an analysis report, by a beamline scientist
- **No price list, price on demand**



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results



IP rights @ SOLEIL

➤ **For public access** (2 calls/year):

The results are shared with the scientific community

➤ **For proprietary access:**

The client owns full IP rights regarding the samples, the equipment, techniques and processes designed and operated by SOLEIL and all types of knowledge (know-how, patents, software...) developed and implemented by SOLEIL to provide the service are part of its own knowledge and remain its full ownership

➤ **For collaborative access:**

The IP rights are shared between the partners according to their own contributions (intellectual, human, technical and financial), unless specific agreement between the parties.

➤ **For Technology Transfer:**

SOLEIL remains its IP rights (patents, know-how, software) and licenses its technologies to SMEs in the scientific instrumentation field

Scientific results handled in connection with shared facility usage

For non-proprietary research performed at SOLEIL, the results must be published in open literature.

For each publication related to a proposal, please:

- Mention the **beamline** on which you obtained data, as well as the **corresponding proposal number(s)**,
- Acknowledge** assistance from SOLEIL beamline staff and/or each person for their help, according to the following model:

"We acknowledge SOLEIL for provision of synchrotron radiation facilities and we would like to thank "XXXXX" for assistance in using beamline "YYYY"."



Get in touch:

Frédéric Jamme

frederic.jamme@synchrotron-soleil.fr

Jean SUSINI

jean.susini@synchrotron-soleil.fr

Visit our website:

<https://www.euglohria.eu>



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

LBIC– Lund University

EUGLOHRIA WP3 – Workshop 2

11th May 2022, on-line conference



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

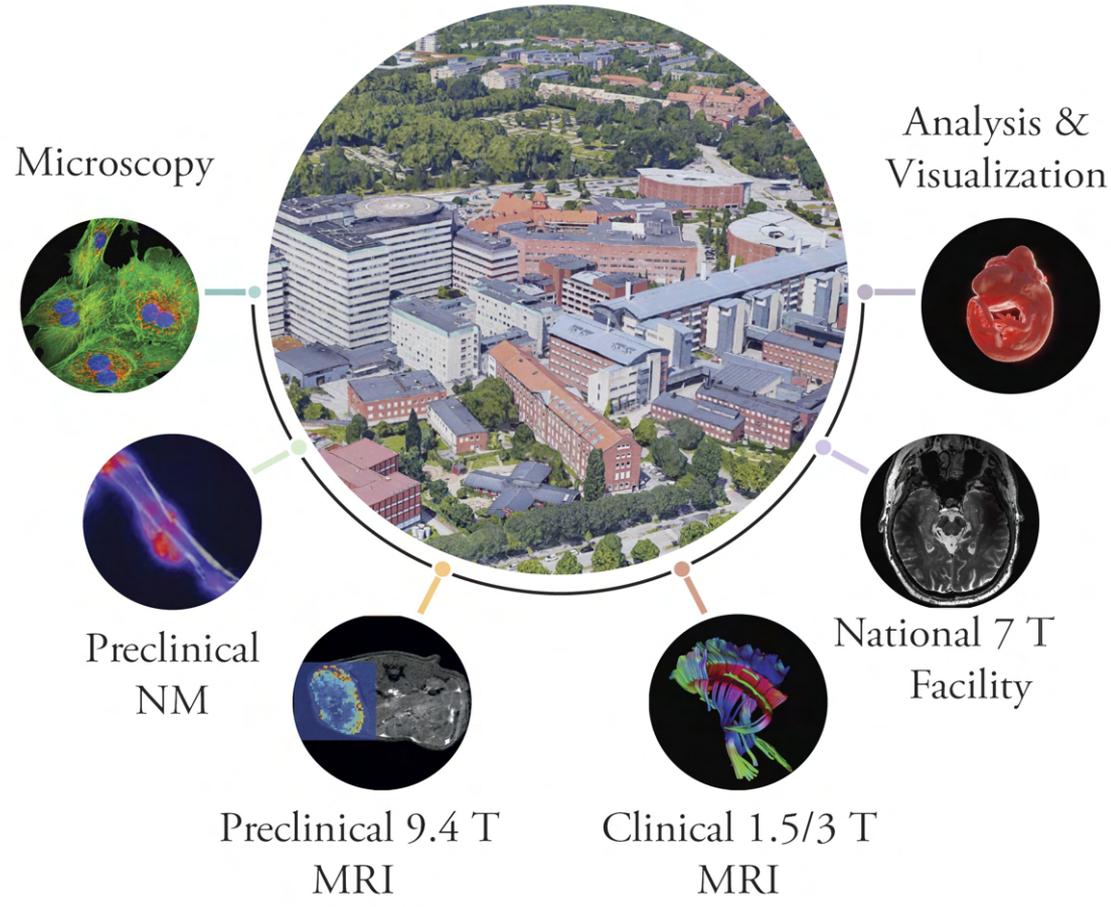
<https://www.euglohria.eu>



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Lund University Bioimaging Centre





EUGLOHRIA

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Research board

Topic 1 : How are the incoming requests for usage handled ?

Edit old application

[Logout](#) | [List applications](#) | [List applications with no Proj Num on top](#) | [Create new application](#) | [Known bugs](#)

[Save application](#) | [Print version](#) **IMPORTANT! You MUST save the form first!**

[General information](#) | [Project information](#) | [Signatures](#) | [LBIC decision](#) | [Application admin](#)

The imaging experiment - Project information

Project number: No project number yet

Project title

Aim of the project:

Description of experimental procedure:

Preferred starting date:

Total number of animals/samples:

Number of imaging occasions per animal/sample:

Interval in between scans (if applicable):

Relevant literature references:

Please provide a copy

(electronic or printed) as the access to databases may vary.

Upload literature reference files here

[Select file](#) | [Upload file](#)



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Prices

All prices are excluding VAT

Instrument	Medical faculty	Other academia	Other (eg industry)
Electron Microscopy SEM/JEOL 7800F	750	1000	1600
TEM/Tecnai BioTWIN	750	1000	1600
Staff support during scanning	650	650	1600
General staff support	Depending on experiment, please contact us		
Light microscopy STORM/TIRF/Confocal	400	400	800
Staff support during scanning	650	650	800



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User Policy

Please note that all projects are subject to [LBIC user policy](#). (PDF file, opens up in new window)

Acknowledgement

When publishing data retrieved using LBIC equipment, it is mandatory to acknowledge LBIC by adding the following text:

“Lund University Bioimaging Centre (LBIC), Lund University, is gratefully acknowledged for providing experimental resources”

In addition, and if applicable, specific LBIC staff may be acknowledged as well.

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

- This question is not implemented in our policy document yet.
- Lund university is working with all infrastructures regarding a university wide policy, this work is early in the progress

Get in touch:



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Research Engineer
Platform coordinator Microscopy

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www.lbic.lu.se

Visit our website:

<https://www.euglohria.eu>



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

BioMS – Lund University, Karolinska institute,
Chalmers University of Technology and
University of Gothenburg

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



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Brief presentation of the platform

BioMS

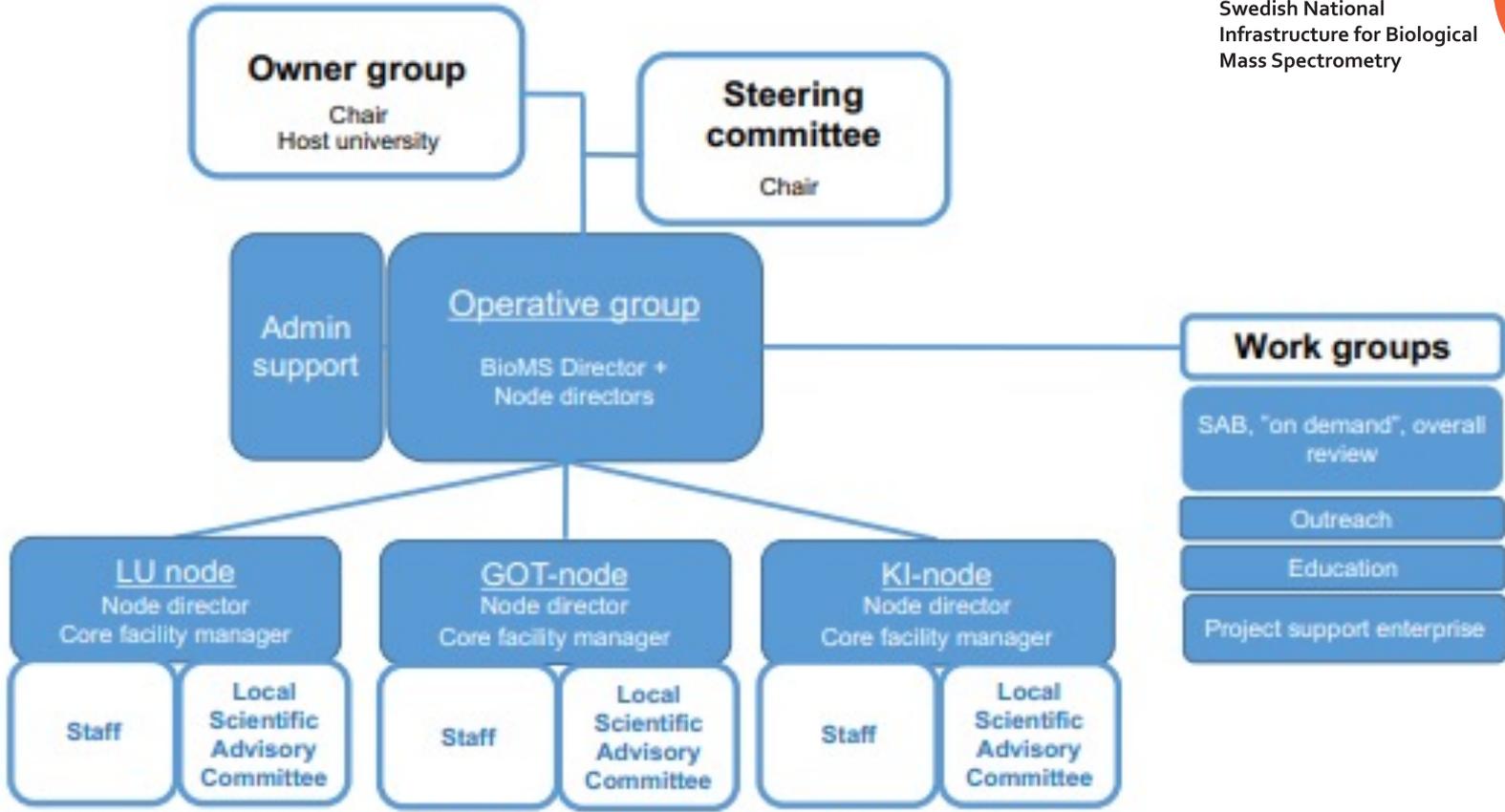
Swedish National
Infrastructure for Biological
Mass Spectrometry



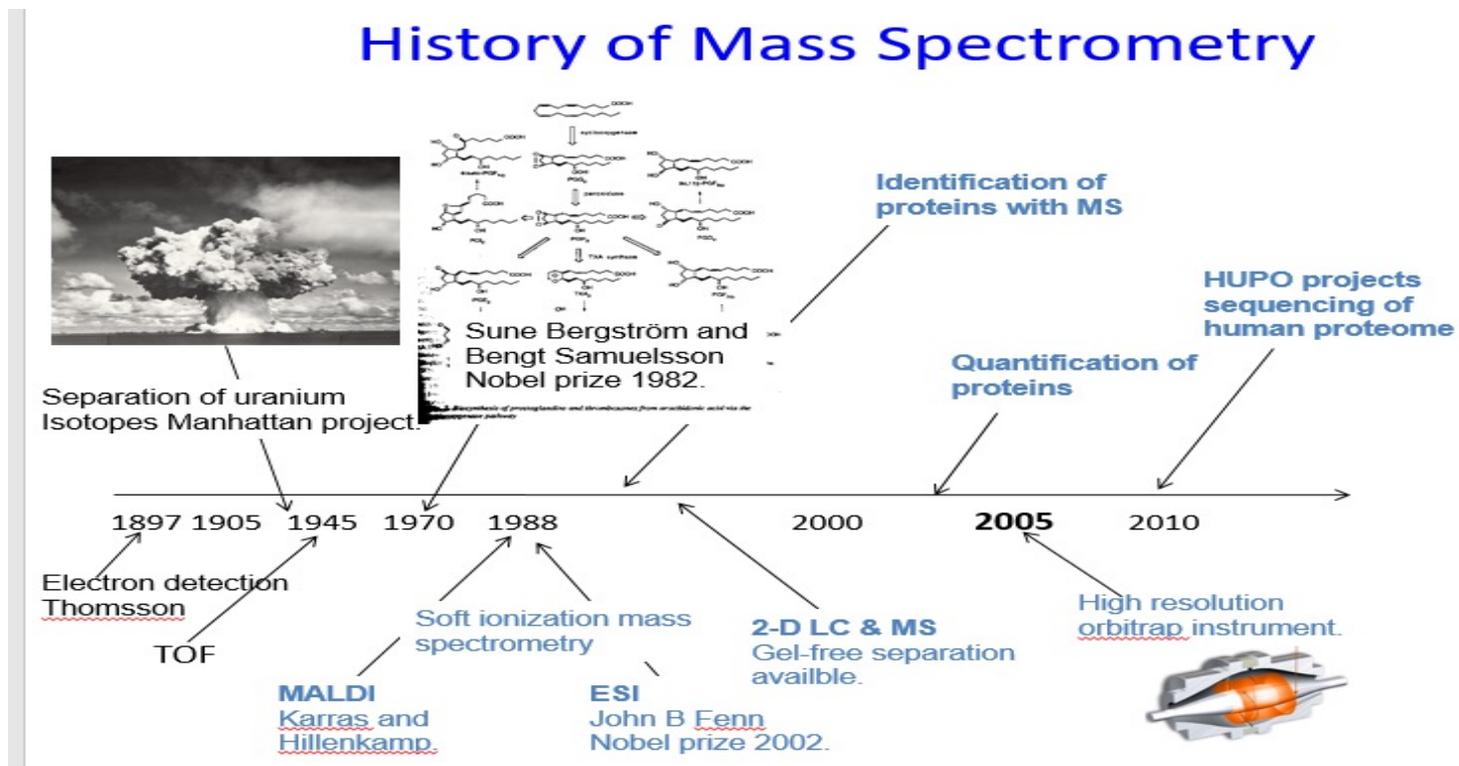
Organisation

BioMS

Swedish National
Infrastructure for Biological
Mass Spectrometry



History of Mass Spectrometry



Most MS instruments have been used for small compound analysis. Since late 80th biological MS has rapidly been developed allowing many new analysis for the cornerstone of life the proteins.



Today Biological Mass Spectrometry a versatile technology

Example 1: Bacteria infections are routinely analysed by biological MS in many countries. This is fast and important paradigm shift in clinical sciences saving lives every day.

Example 2: Single cell proteomics instrument launched in 2021. FACS sorted cells analyzed. Results > 1500 proteins quantified.

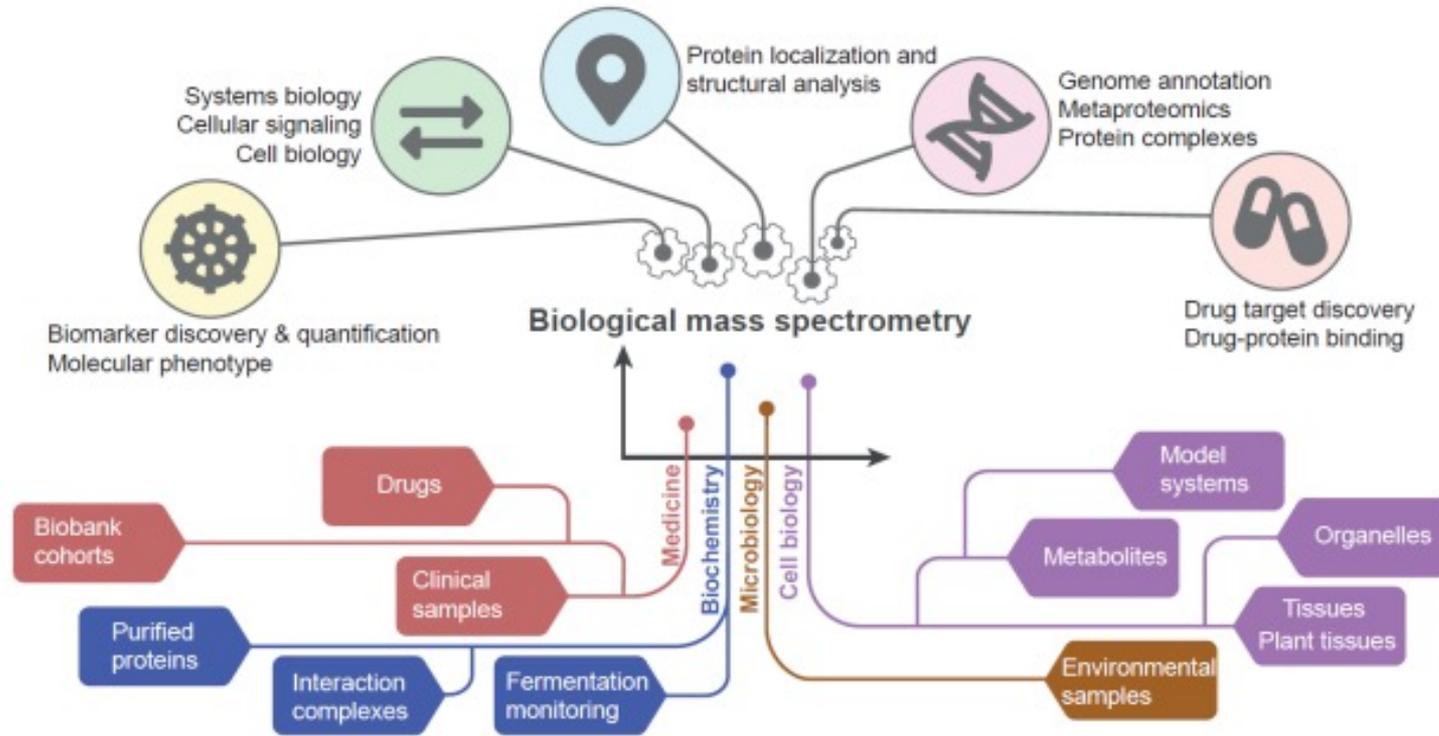
Example 3: Protein structural analysis used for QC of biologicals, proving the similar protein structure between batches.

Example 4: Protein interaction analysis, determination of protein-protein and protein-ligand interaction.

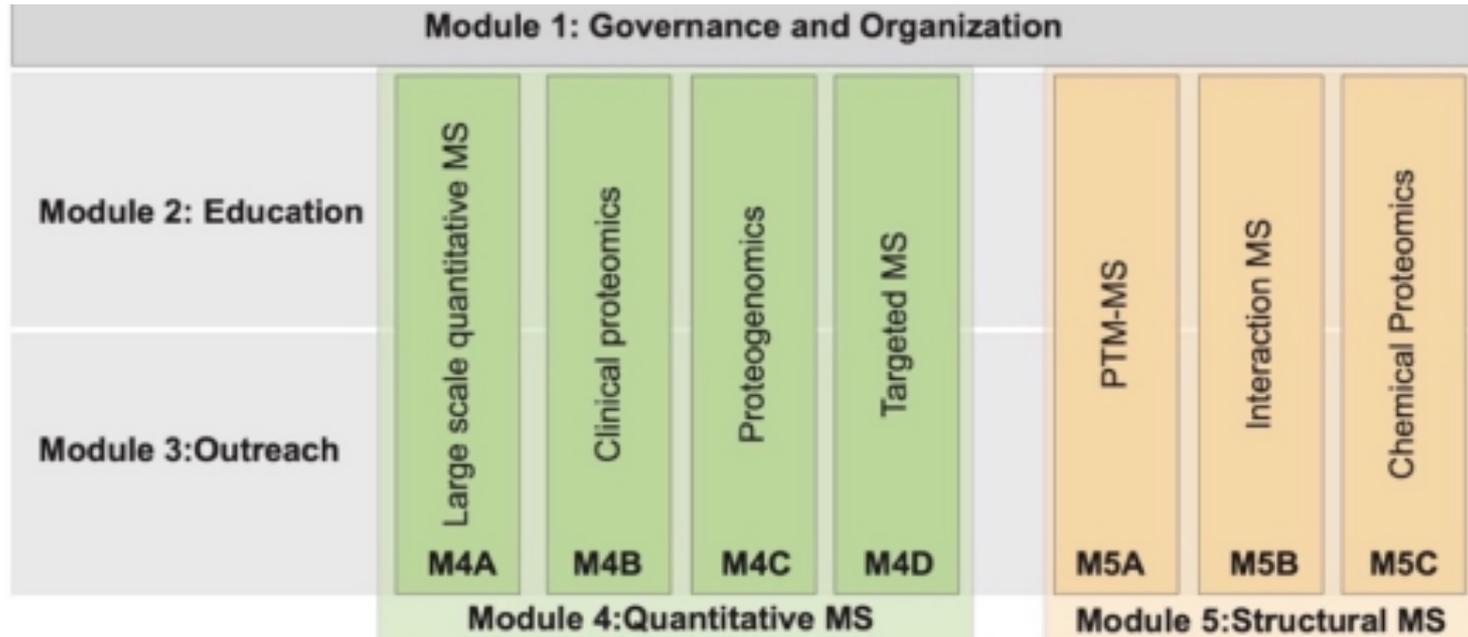
Example 5: Detailed characterisation of post translational modifications (PTMs), such as phosphorylation, glycosylation, oxidative stress and > 200 other modifications.



Overview Biological MS



What do we offer?



“Expertise in planning of experiments, running samples and interpretation of results”

BioMS
Swedish National
Infrastructure for Biological
Mass Spectrometry



Key instrumentation

Structural MS



Determination of protein confirmation HDX MS. Automated robotics coupled to MS instrument



Determination of protein confirmation Tribrid instrumentation, 3 MS instrument in one.

Quantitative MS



High throughput instrumentation for large clinical projects. 4-dimensional proteomics analysis



4 different instruments at the Lund node. List price ranging between 0.7-1.5 m Euro. Depreciation period 5 years.

Other



High throughput sample preparation robotics.

Commercial Software and in-house

Data analysis

Bioinformaticians

Situated in close proximity to strong biological MS research groups





The European University Alliance for Global Health –
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Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?

- Initial contact could be made in many different ways. Request are registered by www.bioms.se
- Feasibility is checked, project could be approved, rejected, resubmitted or sent to other platforms.
- External evaluation of project when BioMS personnel are applying for support.
- Project priority determined by approval date



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

- Shared founding from Swedish Research Council (largest governmental research funding body) and participating University (1:1)
- Price level has been set in harmony with other core facilities in Sweden.
- User fee which are lower than company provided services
- User fee for instrument time, labwork, extended data-analysis and special reagents, no fee for meetings and educational activities
- Higher fee for industrial = double fee
- Quote made after meeting the client, some projects are easy and a fixed price could be given directly other projects needs to be divided with subdeliverys.
- Novel methods or considerable changes, BioMS invest in time and reagents.



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

- Swedish rules for IP and publications are followed.
- Standard workflows: This sentence should be used: **Support from the Swedish National Infrastructure for Biological Mass Spectrometry is gratefully acknowledged**
- When research has been conducted and/or method development is performed then authorship is needed.
- Discussion about this and clarification on the first meeting with the project.

Get in touch:

Sven Kjellström

www.bioms.se

Sven.kjellstrom@med.lu.se

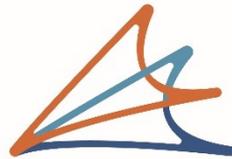
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BioMS

Swedish National
Infrastructure for Biological
Mass Spectrometry





EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

U-READ and SpatialOmics@LU Department of Immunotechnology Lund University

*EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference*



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

U-READ – Lund University

SciLifeLab Drug Discovery and Development Platform/
Human Antibody Therapeutics

EUGLOHRIA WP3 – Workshop 2

11th May 2022, on-line conference



Director Professor Mats Ohlin



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>

Antibody platform at Dept. of Immunotechnology

National and local reach

Department of Immunotechnology

LTH, Faculty of Engineering

Study at Research Infrastructure Contact

Start > [Infrastructure](#) > U-READ: Unit for Rapid Engineered Antibody Development

U-READ: Unit for Rapid
Engineered Antibody
Development



Human Antibody
Therapeutics

INFRASTRUCTURE UNIT

Isolation of antibodies
High throughput phage selection
Screening
Technical platforms

Generation of human antibodies for therapy
Collaborate in the design of relevant assays
Consulting
Technical platforms

**Topics 1-3 : Governed by a joint University agreement between six universities
in Sweden**

SciLifeLab Drug Discovery and Development Platform

Överenskommelse om kanslifunktion

för den nationella forskningsinfrastrukturen DDD

Nationell plattform för läkemedelsforskning, Sverige

Drug Discovery and Development platform Sweden

- Uppsala universitet, 202100-2932 (UU), Uppsala
- Karolinska Institutet, 202100-2973 (KI), Stockholm
- Kungliga Tekniska Högskolan, 202100-3054 (KTH), Stockholm
- Stockholms universitet, 202100-3062 (SU), Stockholm
- Lunds universitet, 202100-3211 (LU), Lund
- Göteborgs universitet, 202100-3153 (GU), Göteborg



The European University Alliance for Global Health –
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Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?

SciLifeLab Drug Discovery and Development Platform

Full projects

- Bi-annual application process
- Steering group makes decision on project prioritization and resource allocation based on pre-defined aspects of the project

Technology development projects

- Steering group makes decision on project prioritization and resource allocation
- May use up to at most 20% of all resources

Service projects

- Application throughout the year
- Operational Management Group makes decision
- Only pending availability of resources not used by other projects

Topic 1 : How are handled the incoming requests for facility usage ?

Local research infrastructure

- Discussion on feasibility with platform manager



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Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are the costs/fees/remuneration of facility usage determined?

SciLifeLab Drug Discovery and Development Platform

Full projects and service projects (academic users)

- No charge for staff cost
- Consumables, reagents, instrumentation use is charged to PI

Technology development projects

- Typically, in-house/collaborative projects funded by DDD funds or grants

Topic 2 : How are the costs/fees/remuneration of facility usage determined?

Local research infrastructure

- Full cost model (charged to PI)



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

SciLifeLab Drug Discovery and Development Platform

Full projects

- Retained by academic PI that owns the project (teachers exempt)
- Technology development rights beyond PI ownership owned by DDD and platform staff (teachers exempt). DDD retains rights to use general methods/technologies developed as part of the project.

Technology development (DDD Collaborative) projects

- Ownership resides with DDD and those that generated results

Service projects

- Ownership resides with the academic PI that initiated the project. DDD retains rights to use general methods/technologies developed as part of the project.

Publication: Infrastructure staff should be part of publications and/or as inventors on terms generally accepted in the field.

Get in touch:

Mats Ohlin
Dept. of Immunotechnology
Lund University
Medicon Village building 406
S-22381 Lund
Sweden

<https://www.immun.lth.se/infrastructure/u-read-unit-for-rapid-engineered-antibody-development/>

Visit our website:

<https://www.euglohria.eu>

May 25, 13.00-14.00

- A novel, antibody-based radiopharmaceutical for advanced thyroid cancer - SciLifeLab
- www.scilifelab.se
- Presenter: Dr Marika Nestor, Department of Immunology, genetics and pathology, Uppsala University, Sweden
- Molecular radiotherapy is increasingly becoming a powerhouse in the field of cancer- and radiation therapy.



The European University Alliance for Global Health –
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SpatialOmics@Lund University

Nanostring-based platforms for bulk and spatially guided
omics analyses

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference





Operational organization SpatialOmics@LU

Operational staff:

Lina Olsson - Facility manager
 May Hassan - Laboratory assistant

Scientific resource

Assoc. Prof. Anna Sandström

Director: Professor Sara Ek

External IHC resource: Lena Tran

Internal and external bioinformatics: National Bioinformatics Infrastructure Sweden



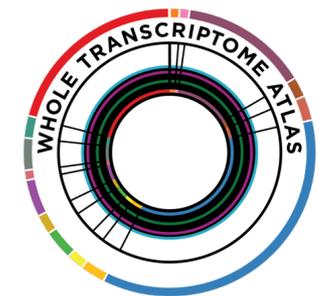
GeoMx DSP– spatial omics



nCounter system – gene expression
part of GeoMx workflow

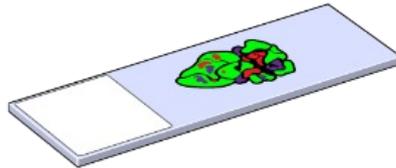
Whole Transcriptome Atlas

- NGS read-out
- 18,000+ genes

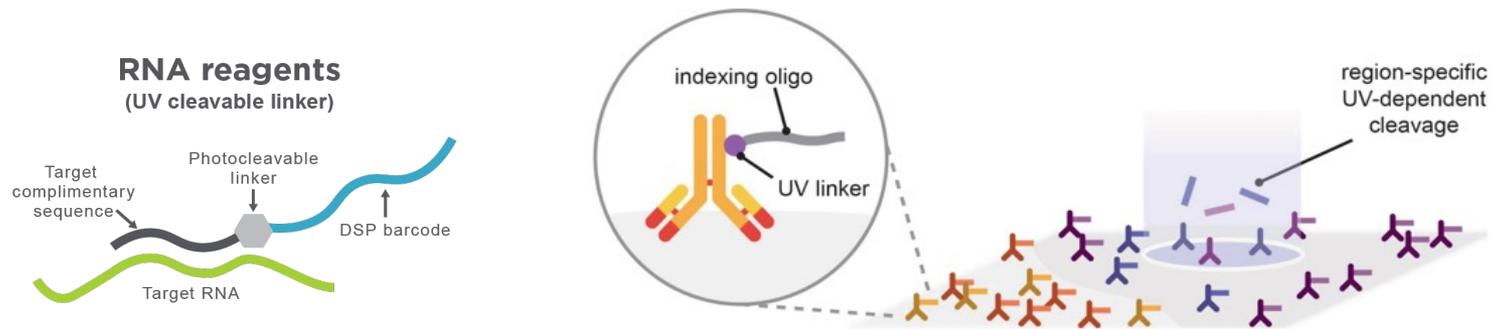


Principles of the GeoMx DSP technology

Tissue section is stained with up to 3 antibodies to visualize morphology

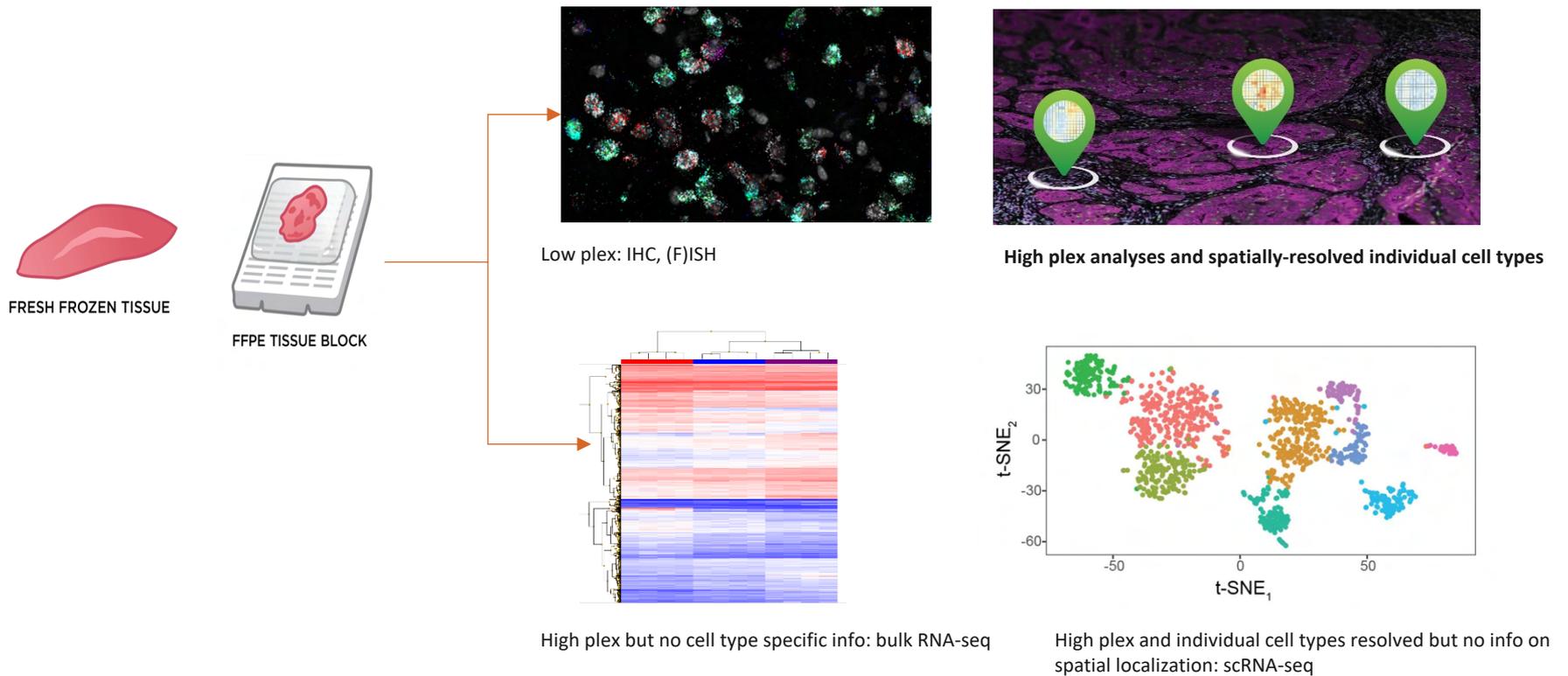


Protein or RNA detection antibodies/probes are also added and bind to the tissue



Selected tissue regions are exposed to UV light → indexing oligos/barcodes are released, collected and quantitated

Why use spatially-guided omics analyses?



What we provide and which other resources that we collaborate with

Project planning phase:

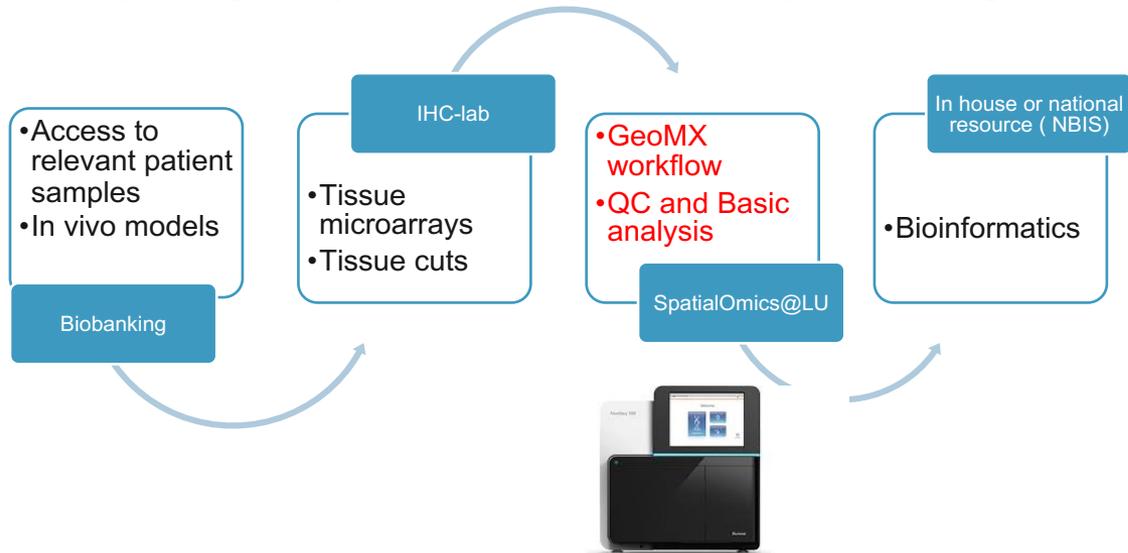
Advice and guiding on selection and combination of morphology markers and selection of panels (protein and mRNA), quality of tissue and construction of TMA's

GeoMX workflow:

Staining of tissue, assistance with region of interest selection, operation of instrument and down-stream wet lab.

Pre-processing of data:

Communication with sequencing facility, initial QC analyses and basic pre-processing steps



Illumina
Clinical translational genomics/@SciLifeLab



The European University Alliance for Global Health –
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Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?

Local research infrastructure

- Registration form after discussion on feasibility with platform manager
- First come – first served



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are the costs/fees/remuneration of facility usage determined?

Service projects

- Fee-for service: Hands-on time and reagents (charged to PI)
- External customers also pay an addition for depreciation (15% of project cost) and indirect cost on hands-on time but not reagents (42%)



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

Full projects

- Retained by the customer (academic and industry)

Publications: Infrastructure staff should be part of publications on terms generally accepted in the field.

Get in touch:

Sara Ek
Dept. of Immunotechnology
Lund University
Medicon Village building 406
S-22381 Lund
Sweden

<https://www.lth.se/spatialomicslu/>

Visit our website:

<https://www.euglohria.eu>



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

NMR Core Facility University of Szeged

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference



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<https://www.euglohria.eu>



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Brief presentation of the platform

Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?

NMR Core Facility Univeristy of Szeged



Tamás A. Martinek
Department of Medical Chemistry

Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?

Bruker Ascend 500



Bruker AV 600



Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?

Bruker Ascend 500



BBO Prodigy Probe

^{15}N – ^{31}P , ^1H and ^{19}F

gain factor = 2-3x

Z-gradient, automatic tuning

-40 - +80 °C

max. 5 mm tube

Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

Bruker Ascend 500

Nuclei available for BBO Prodigy Probe

PubChem

1 H Hydrogen Nonmetal																	2 He Helium Noble Gas	
3 Li Lithium Alkali Metal	4 Be Beryllium Alkaline Earth Metal																	10 Ne Neon Noble Gas
11 Na Sodium Alkali Metal	12 Mg Magnesium Alkaline Earth Metal																	18 Ar Argon Noble Gas
19 K Potassium Alkali Metal	20 Ca Calcium Alkaline Earth Metal	21 Sc Scandium Transition Metal	22 Ti Titanium Transition Metal	23 V Vanadium Transition Metal	24 Cr Chromium Transition Metal	25 Mn Manganese Transition Metal	26 Fe Iron Transition Metal	27 Co Cobalt Transition Metal	28 Ni Nickel Transition Metal	29 Cu Copper Transition Metal	30 Zn Zinc Transition Metal	31 Ga Gallium Post-Transition Metal	32 Ge Germanium Metalloid	33 As Arsenic Metalloid	34 Se Selenium Nonmetal	35 Br Bromine Halogen	36 Kr Krypton Noble Gas	
37 Rb Rubidium Alkali Metal	38 Sr Strontium Alkaline Earth Metal	39 Y Yttrium Transition Metal	40 Zr Zirconium Transition Metal	41 Nb Niobium Transition Metal	42 Mo Molybdenum Transition Metal	43 Tc Technetium Transition Metal	44 Ru Ruthenium Transition Metal	45 Rh Rhodium Transition Metal	46 Pd Palladium Transition Metal	47 Ag Silver Transition Metal	48 Cd Cadmium Transition Metal	49 In Indium Post-Transition Metal	50 Sn Tin Post-Transition Metal	51 Sb Antimony Metalloid	52 Te Tellurium Metalloid	53 I Iodine Halogen	54 Xe Xenon Noble Gas	
55 Cs Cesium Alkali Metal	56 Ba Barium Alkaline Earth Metal		72 Hf Hafnium Transition Metal	73 Ta Tantalum Transition Metal	74 W Tungsten Transition Metal	75 Re Rhenium Transition Metal	76 Os Osmium Transition Metal	77 Ir Iridium Transition Metal	78 Pt Platinum Transition Metal	79 Au Gold Transition Metal	80 Hg Mercury Transition Metal	81 Tl Thallium Post-Transition Metal	82 Pb Lead Post-Transition Metal	83 Bi Bismuth Metalloid	84 Po Polonium Metalloid	85 At Astatine Halogen	86 Rn Radon Noble Gas	
87 Fr Francium Alkali Metal	88 Ra Radium Alkaline Earth Metal	**	104 Rf Rutherfordium Transition Metal	105 Db Dubnium Transition Metal	106 Sg Seaborgium Transition Metal	107 Bh Bohrium Transition Metal	108 Hs Hassium Transition Metal	109 Mt Meitnerium Transition Metal	110 Ds Darmstadtium Transition Metal	111 Rg Roentgenium Transition Metal	112 Cn Copernicium Transition Metal	113 Nh Nihonium Post-Transition Metal	114 Fl Flerovium Post-Transition Metal	115 Mc Moscovium Post-Transition Metal	116 Lv Livermorium Post-Transition Metal	117 Ts Tennessine Halogen	118 Og Oganesson Noble Gas	
57 La Lanthanum Lanthanide	58 Ce Cerium Lanthanide	59 Pr Praseodymium Lanthanide	60 Nd Neodymium Lanthanide	61 Pm Promethium Lanthanide	62 Sm Samarium Lanthanide	63 Eu Europium Lanthanide	64 Gd Gadolinium Lanthanide	65 Tb Terbium Lanthanide	66 Dy Dysprosium Lanthanide	67 Ho Holmium Lanthanide	68 Er Erbium Lanthanide	69 Tm Thulium Lanthanide	70 Yb Ytterbium Lanthanide	71 Lu Lutetium Lanthanide				
89 Ac Actinium Actinide	90 Th Thorium Actinide	91 Pa Protactinium Actinide	92 U Uranium Actinide	93 Np Neptunium Actinide	94 Pu Plutonium Actinide	95 Am Americium Actinide	96 Cm Curium Actinide	97 Bk Berkelium Actinide	98 Cf Californium Actinide	99 Es Einsteinium Actinide	100 Fm Fermium Actinide	101 Md Mendelevium Actinide	102 No Nobelium Actinide	103 Lr Lawrencium Actinide				

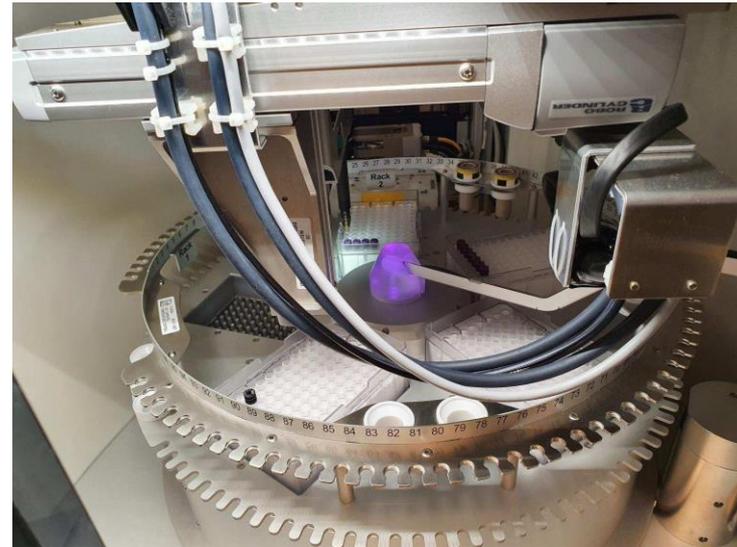
1 Atomic Number
H Symbol
Hydrogen Name
Nonmetal Chemical Group Block

Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?

Bruker Ascend 500

Sample Jet

6 x 98 samples
controlled temperature



1 mm

1.7 mm

3 mm

5 mm

Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?

Bruker AV 600



TCI Triple Resonance Cryoprobe (He)

^1H , ^{13}C , ^{15}N

^1H -optimized

gain factor: 4-5x

Z-gradient, automatic tuning

5 – 50 °C

5 mm tube

**Brief presentation of the platform – who are you and what are your expertises ?
your key-equipments ?**

Cost effectivity

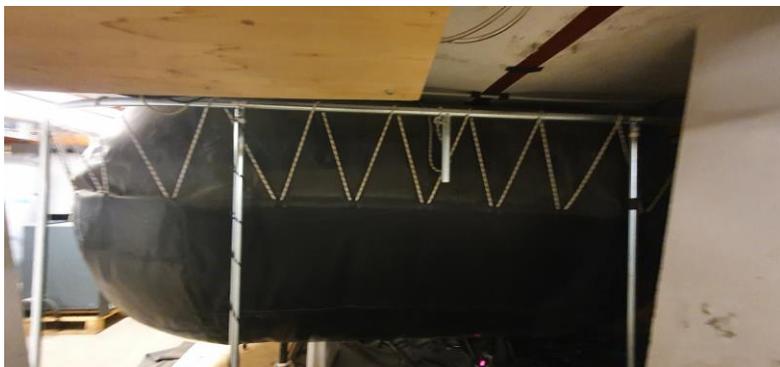
Helium recovery &
liquefaction

Nitrogen liquefaction
85% saving on
cryogenic costs

He liquefier



He compressor





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?

Operation

Facility is open for U-Szeged, ELKH-BRC, collaborators and spin-off company users

Training is required

15 research groups

Sample queue handled in Topspin

FIFO, facility manager may modify priority

Special measurements upon request

AV 600 is dedicated to protein and high sensitivity measurements



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

Cost model

Instrument time proportional sharing of costs among research groups: ca. 6 EUR/h

University covers maintenance, repair and HR costs (ca. 50%) through institution level excellence funds:

Ministry of Innovation and Technology of Hungary from the National Research, Development and Innovation Fund (TKP2021EGA-32)

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

Capacity utilization

Ascend 500: 75% (maintenance, many 1D-¹H)

AV 600: 50% (change in project portfolio predicts increase)



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

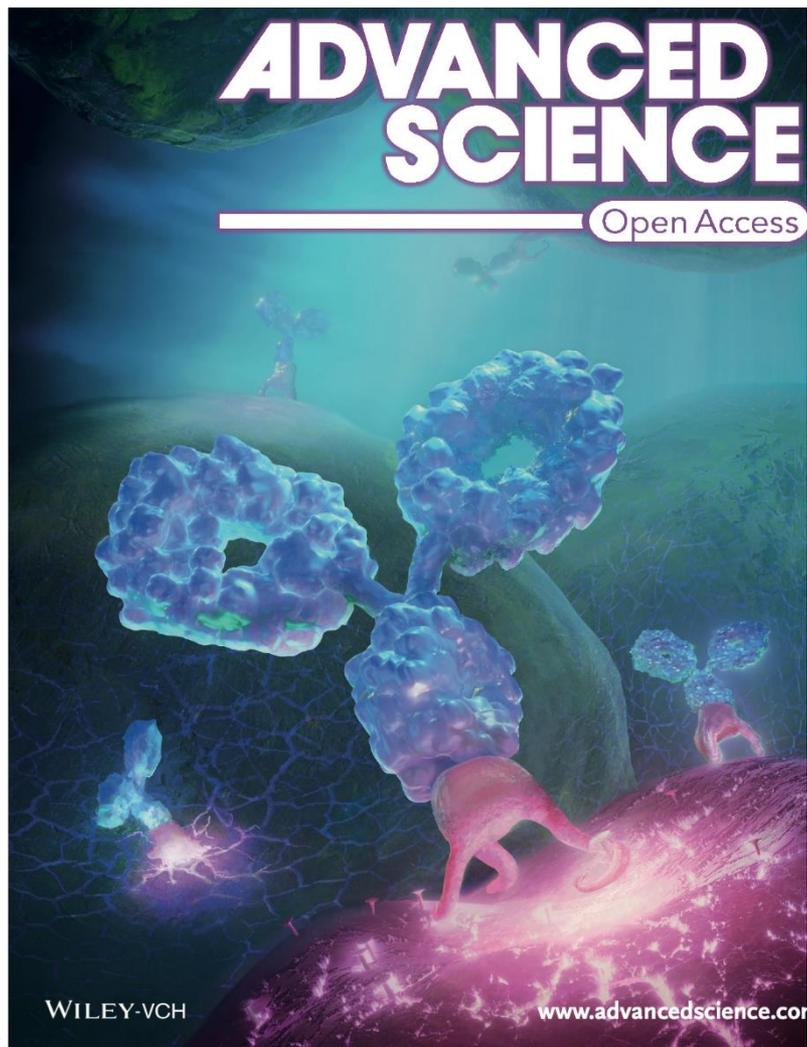
Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

IP rights

In the fee for service model, the NMR Core Facility claims no IP right.

In the collaboration model, IP rights are handled according to the relevant SOP of the University.



MSDE

Molecular Systems Design & Engineering
rsc.li/molecular-engineering



ISSN 2058-9689



PAPER
 Csaba Pál, Tamás A. Martinek et al.
 Rationally designed folsameric adjuvants enhance antibiotic efficacy via promoting membrane hyperpolarization

IChemE ADVANCING CHEMICAL ENGINEERING WORLDWIDE



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Functional Cell Biology and Immunology Advanced Core Facility – HCEMM-SZTE (USZ)

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



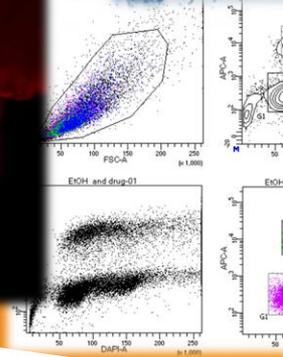
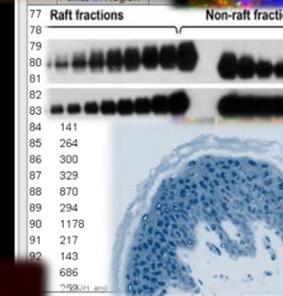
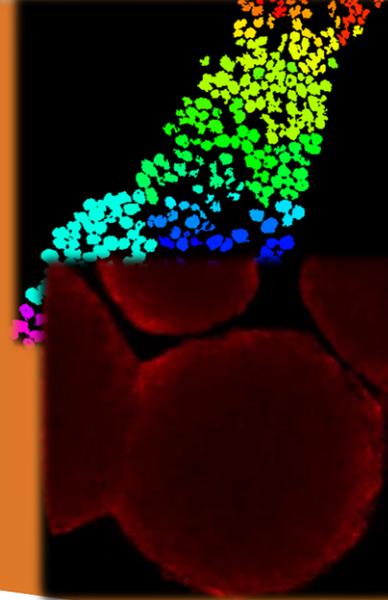
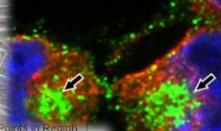
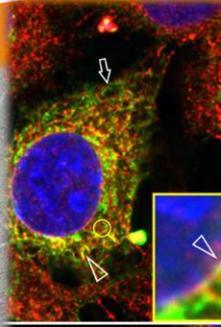
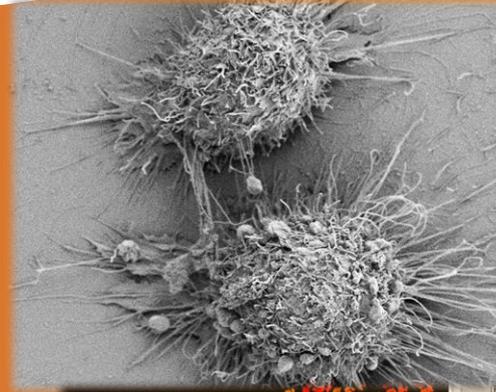
The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Brief presentation of the platform

OVERVIEW

At our Advanced Core Facility, our primary objective is to support research groups in their work, with the latest techniques and software solutions. Our microscopy imaging and cell sorting-based services range from initial advice on the selection of the most suitable equipment for an experiment and configuring it, to the final analysis of the imaging/cytometry data.

Functional Cell Biology & Immunology **Advanced Core Facility**



Introductory Video **Advanced Core Facility**

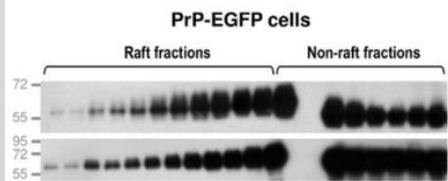
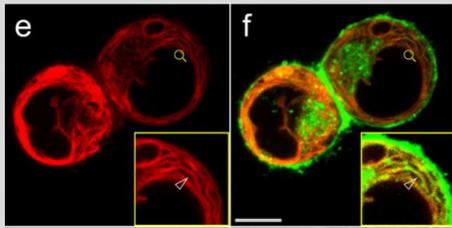


VIDEO Link: <https://www.hcemm.eu/teams/advanced-core-facilites/>

Advanced Core Facility	Advanced Core Facility Head
HCEMM-USZ Functional Cell Biology and Immunology	 Ferhan Ayaydin PhD VIDEO INTRODUCTION 



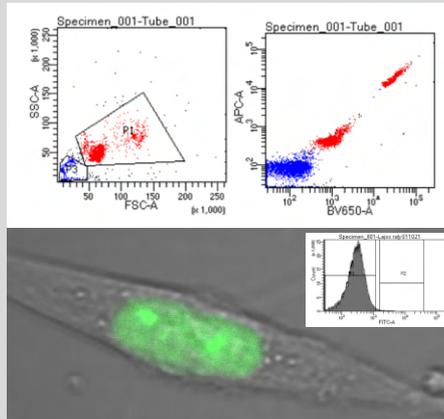
Divya DONDAPATI
M.Sc.



Confocal Microscopy / Wet Lab



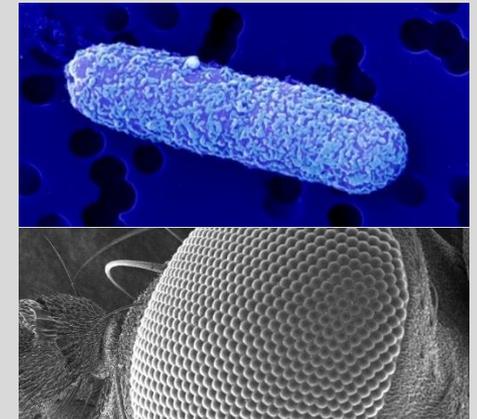
Shyam JEE
Ph.D.



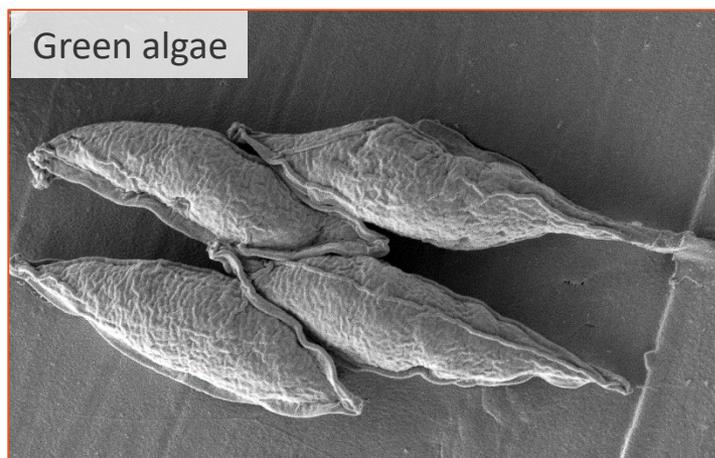
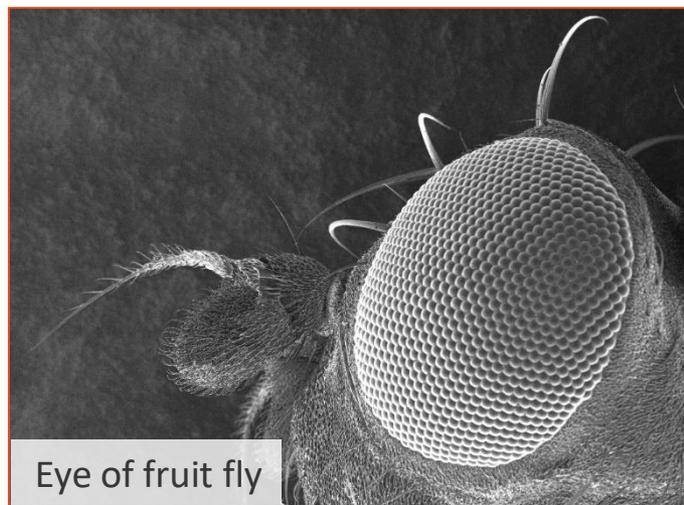
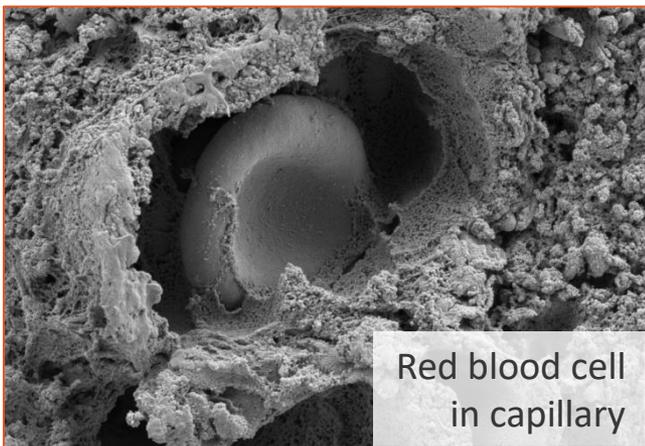
Flow Cytometry / Cell Sorting



Attila FARKAS
M.Sc.



Electron Microscopy / CLEM





Ferhan Ayaydin
Ph.D.

Head of ACF

Previous Experience

- 15 years experience as head of imaging core facility (BRC, Szeged)
- 25 years research experience in molecular and cell biology (Hungary, France, USA)

Scientometry

- 70 publications, 2232 citations, h-index: 20

Grants as Principal Investigator

- 2015: National research grant (K 116318)
Gene editing of maize with synthetic oligonucleotides and CRISPR/Cas9 system;
€96,786 for 3 years
- 2019: National research grant (NNE 129987)
Toxic industrial chemical monitoring via drone integrated whole cell biosensor arrays;
€93,719 for 3 years

Role in Education

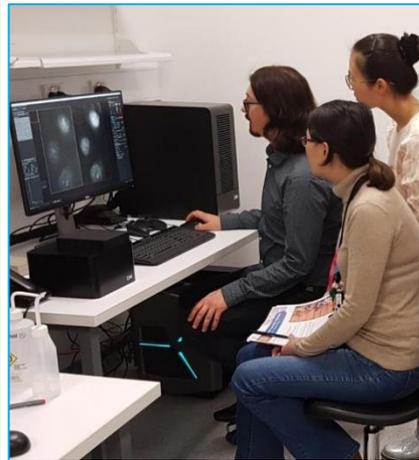
- Ph.D. thesis supervision of Soujanya Kuntam. "*Development of novel dyes and fluorescence-imaging based approaches for cellular localization and dynamics of lipid droplets*"
- Supervision of 5 international training course students in their diploma projects
- Regular courses and practical demonstrations in fluorescence and confocal microscopy

Scanning Electron Microscope



CLEM

Confocal Live



Super Resolution

Cell Sorter



Confocal LSM

Leica Stellaris Confocal Super-resolution Microscope



Highly advanced specifications

- 120nm "live cell" super-resolution
- Next generation, "white light laser"
- Fluorescence lifetime imaging and
- Acousto optical beam splitting technology.
- Ultrasensitive, advanced Power HyD spectral detectors
- Various software modules: Co-localization, Live data mode, 3D visualization, Lightning expert, Assay editor, Dye finder
- Adaptive focus control and superZ galvo stage
- Powerful PC: 192GB RAM, CUDA NVidia card
- The first of its kind in Hungary!

Benefits: With this new microscope, we will be able to serve the researchers and the visitors of the facility with the most advanced confocal microscope in the region.

Cost: 450K EUR (Ministry of Innovation and Technology)



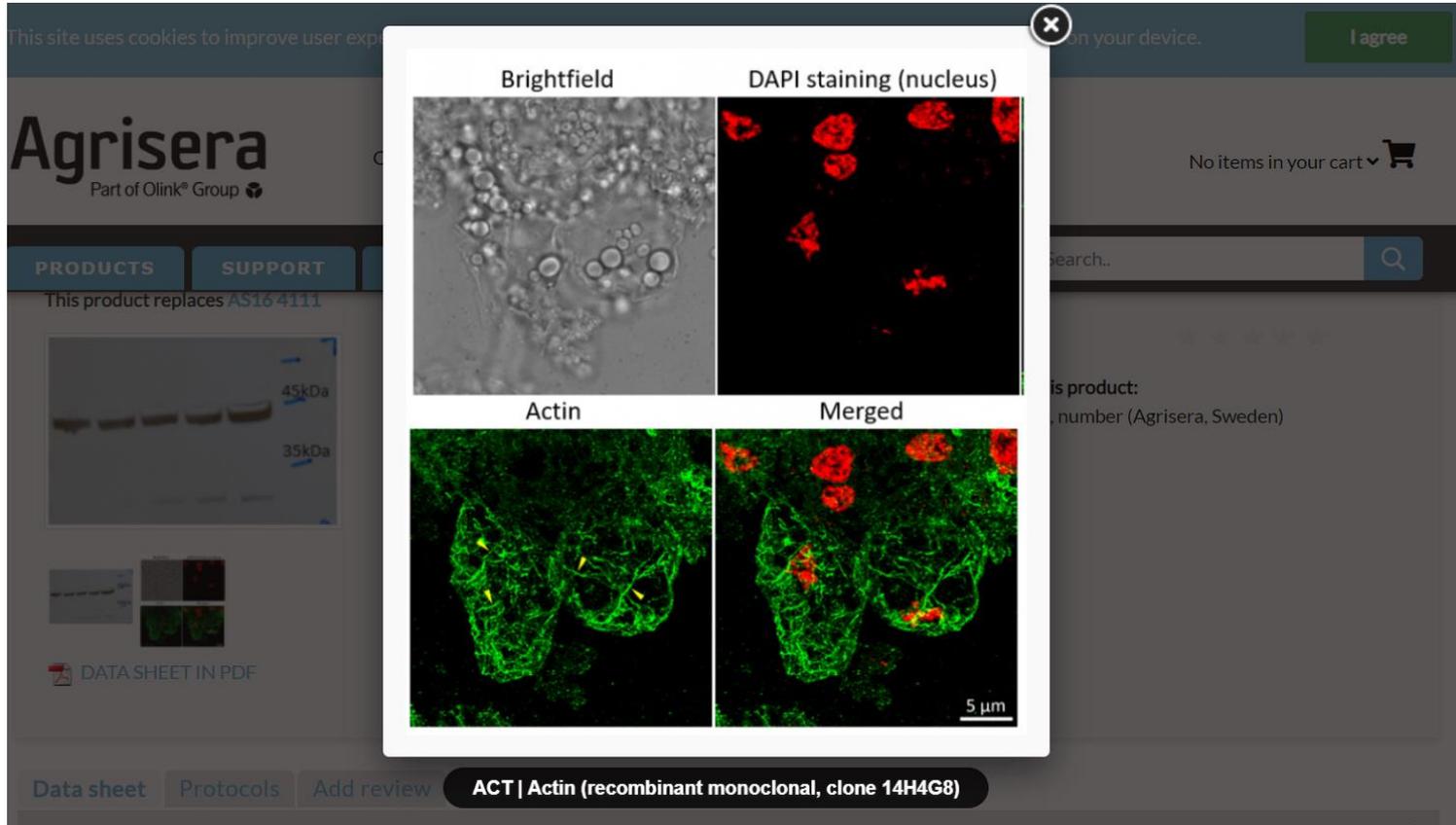
Educational activities **Student trainings**



USZ students
Confocal microscopy
Training



Company interactions **Agrisera**(Sweden)



The screenshot displays the Agrisera website interface. A central pop-up window shows four panels of microscopy images: 'Brightfield', 'DAPI staining (nucleus)', 'Actin', and 'Merged'. The 'Merged' panel includes a 5 µm scale bar. The background website shows the 'ACT | Actin (recombinant monoclonal, clone 14H4G8)' product page, with a 'Data sheet' button highlighted. Other visible elements include a search bar, a shopping cart icon, and a 'DATA SHEET IN PDF' link.

Immunolocalization and confocal imaging of new Agrisera antibodies

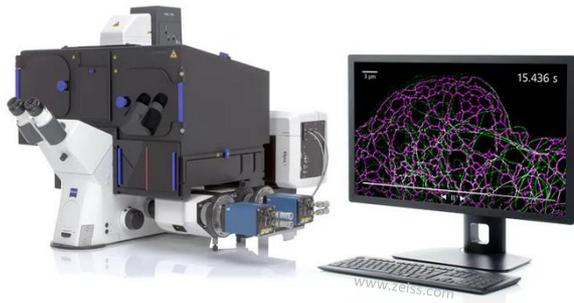
FCBI-ACF Future Upgrade Plans

TRAZED

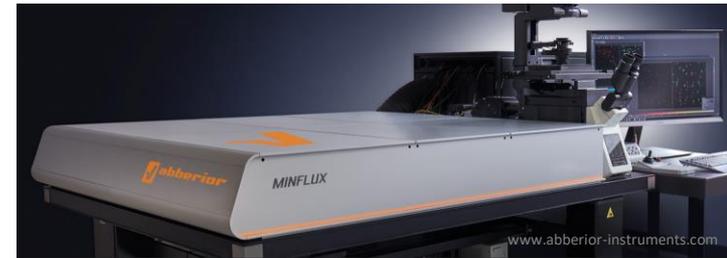


Future upgrades

- Biosafety cabinet for current cell sorter
- Airyscan super-resolution upgrade for current Zeiss confocal microscope
- Novel microscopy technologies (Zeiss Elyra 7 Lattice SIM², Aberior minFLUX molecular resolution microscope)



Zeiss Elyra 7 Lattice SIM2
Sept. 15 Zeiss Event at ACF
1st presentation in Hungary!
at HCEMM-FCBI-USZ



Aberior minFLUX
Molecular resolution microscope



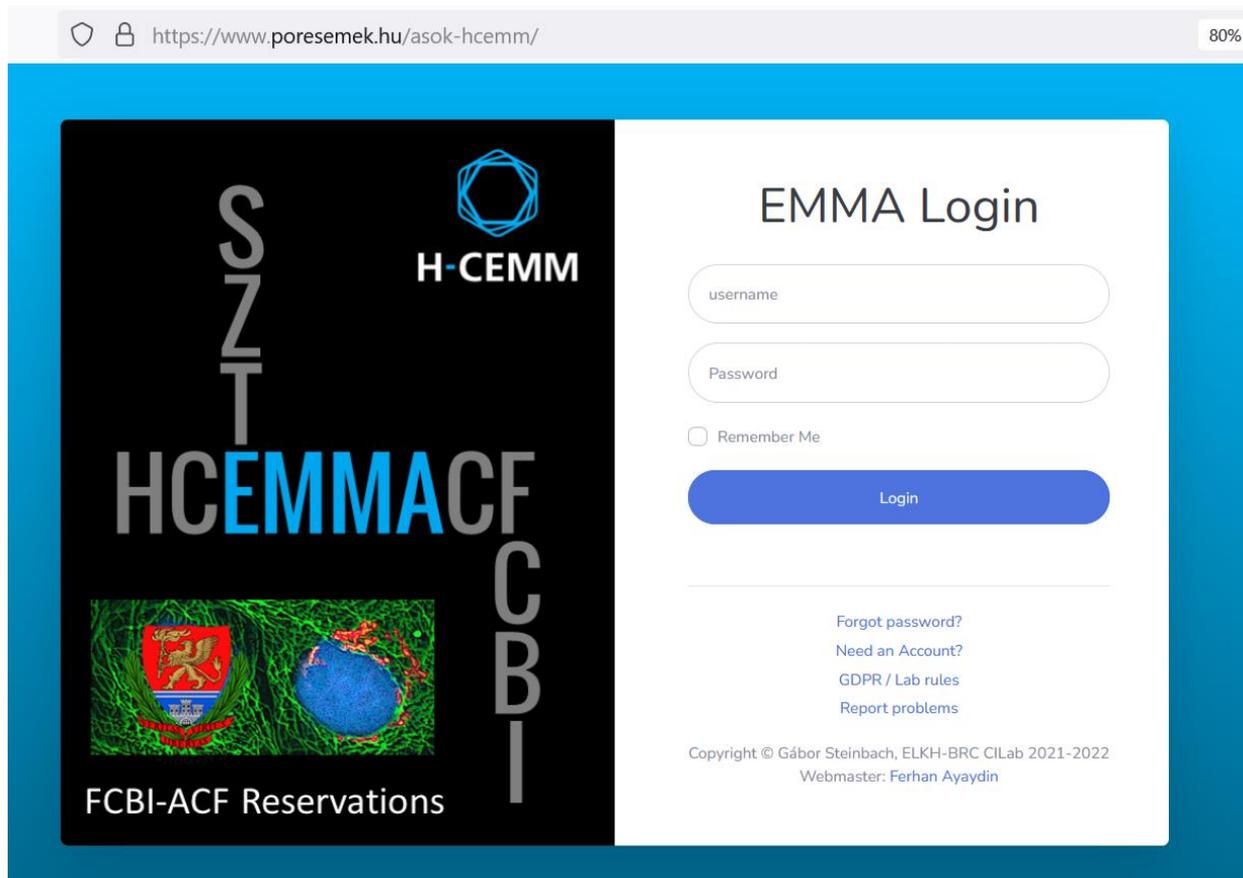
The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage

OVERVIEW

1. For Sorter and SEM: Personal discussions regarding project plan & execution of experiments.
2. For confocal microscopes: Via reservation webpage → next page
3. Also for confocal microscopes: A combination of abovementioned (1 and 2) approaches

EMMA Our Online calendar for facility users



mobile app and the website: <https://www.poresemek.hu/asok-hcemm/>

FCBI-ACF EMMA Equipment Reservation App



calendar cleanup - afeafe | HCEMM-USZ ACF - ASOK reserv X | Membrane Domain Localization X

← → ↻ <https://www.poresemek.hu/asok-hcemm/?c=5&d=1650621600>

HCEMM-USZ ACF SITE Freque

BASIC

- Home
- Microscopes
- My Calendar
- Stat
- Access Rights
- My Profile
- About

MANAGEMENT

- Users
- Edit user
- Problems
- Activity logs

« 22nd April, Fri »

TIME	Leica Stellaris	Zeiss LSM880	Olympu
08:30			
09:00			
09:30			
10:00			
10:30			
11:00		AYAYDIN, Ferhan	
11:30		AYAYDIN, Ferhan	
12:00	Shyam Yadav	AYAYDIN, Ferhan	
12:30	Shyam Yadav	AYAYDIN, Ferhan	
13:00	Shyam Yadav	AYAYDIN, Ferhan	
13:30	Shyam Yadav	AYAYDIN, Ferhan	
14:00		AYAYDIN, Ferhan	
14:30		AYAYDIN, Ferhan	



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

OVERVIEW

As a start-up core facility, the core facility of Biological Research Centre, Szeged used as a model to determine the costs and fees. The current head of the ACF was the previous head of BRC's facility for more than 15 years. The optimized price model used there was proved to be necessary and sufficient. Our personnel costs are covered by HCEMM and the maintenance expenses are covered by USZ, whose members can use the facility free of charge for the time being. The users are responsible for bringing their consumables.

FCBI-ACF Initial plan of fee calculation

Equipment type	Equipment at BRC (Szeged)	BRC user fees	HCEMM ACF Equipment	Mode of operation	Special Agreement Groups	Regular Fees	75% Reduced fee for HCEMM groups	50% Reduced fee for USZ groups
Cell Sorter	BD Jazz sorter (2 laser, 2-way sorting) (BRC, Flow cytometry core facility)	3000Ft /sample to be sorted	BD FACS Aria Fusion (4 laser, 4-way sorting)	Dedicated senior research assistant	No charge for equipment use (Lajos Kemény)	FlowAnalysis: 2000 Ft/sample Cell sorting: 6000 Ft/sample (if aseptic sorting needed, additional 10000 Ft per full decontamination cycle)	75% of regular fees No charge for initial experiment optimization steps and no cost technical/scientific assistance for all HCEMM groups!	50% of regular fees USZ provides regular financial budget for the ACF, hence USZ groups benefit from maximum fee reduction!
Scanning Electron mic.	Scanning Electron Microscope, JEOL 7100 (Ins. of Biophysics)	3000Ft/hr (internal fee) 5000Ft/hr (external fee)	Zeiss Sigma 300 (and peripherals)	Dedicated senior research assistant	No charge for equipment time (József Maléth Péter Hegyi)	6000 Ft/hr		
Zeiss Confocal mic.	Zeiss LSM 800 (BRC, Ins. of Genetics)	planned fee: 3000-4000Ft/hr (personal discussion with Dr. Szilard Szikora)	Zeiss LSM 880	Self use after training Assistance provided if needed	No charge for equipment use (József Maléth Péter Hegyi)	Self use following training 5000 Ft/hr		
super-resolution microscope	STEDYCON (Dr. Istvan Krizbai lab)	Collaboration setting	ONI STORM	Assistance provided	No charge for equipment use (József Maléth)	4000 Ft/hr		
Live cell analysis mic.	Olympus Cell-R mic. (BRC, Microscope core facility)	570 Ft/hr (internal use) 2500 Ft/hr (external use) prices determined 10 years ago and not increased since then	Olympus FV10i	Self use after training Assistance provided if needed	No charge for equipment use (Péter Hegyi)	1800 Ft/hr (up to 8 hrs use) 1500 Ft/hr (more than 8 hrs use)		

We don't charge USZ and HCEMM users for the time being!



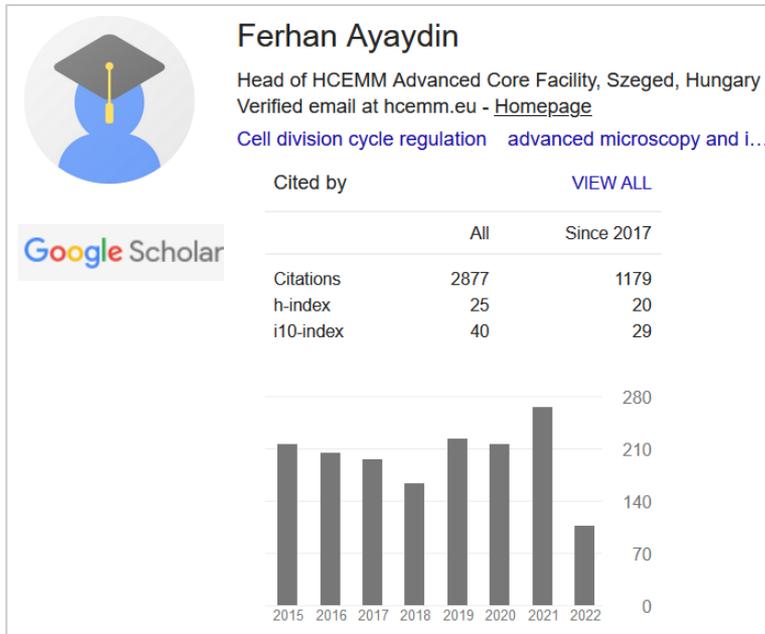
The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

OVERVIEW

1. Our own research → Authorship
2. Collaboration → Co-authorship
3. ACF Service → Acknowledgements

Publication of scientific results



Superhydrophobic self-similar nonwoven-titanate nanostructured materials

Authors Sumit Sharma, Amit Rawal, Ildikó Y Tóth, Livia Vásárhelyi, Gábor Kozma, Ákos Kukovecz, [Shyam Jee](#), [Ferhan Ayaydin](#)

Publication date 2021/9/15

Journal Journal of Colloid and Interface Science



Small paraquat resistance proteins modulate paraquat and ABA responses and confer drought tolerance to overexpressing Arabidopsis plants.

Faragó D, Zsigmond L, Benyó D, Alcazar R, Rigó G, [Ayaydin F](#), Rabilu SA, Hunyadi-Gulyás É, Szabados L
Journal/Proc./Book: Plant, Cell and Environment
Year: 2021



Membrane Domain Localization and Interaction of the Prion-Family Proteins, Prion and Shadoo with Calnexin.

Dondapati DT, Cingaram PR, [Ayaydin F](#), Nyeste A, Kanyó A, Welker E, Fodor E.
Journal/Proc./Book: MDPI Membranes
Year: 2021



Amino Acid Polymorphisms in the VHIID Conserved Motif of Nodulation Signaling Pathways 2 Distinctly Modulate Symbiotic Signaling and Nodule Morphogenesis in Medicago truncatula.

Kovacs S, Fodor L, Domonkos A, [Ayaydin F](#), Laczi K, Rákhely G and Kalo P
Journal/Proc./Book: Frontiers in plant science
Year: 2021



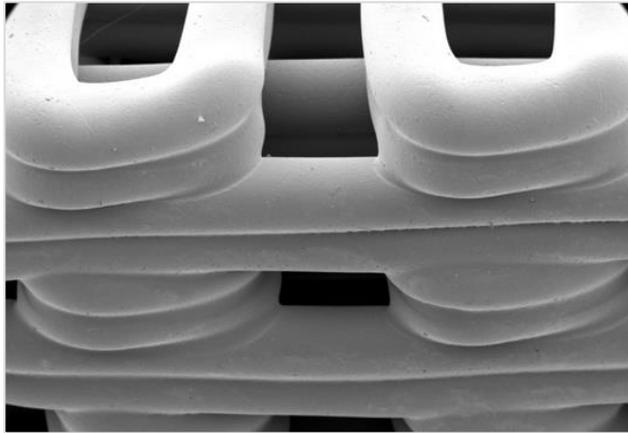
IL-36a and Lipopolysaccharide Cooperatively Induce Autophagy by Triggering Pro-Autophagic Biased Signaling

Zaid I. I. Al-Luhaibi, Áron Dernovics, György Seprényi, [Ferhan Ayaydin](#), Zsolt Boldogkői, Zoltán Veréb, Klára Megyeri
Journal/Proc./Book: Biomedicines
Year: 2021

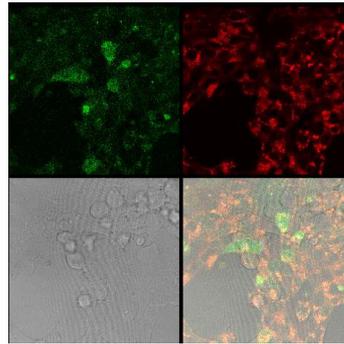


In planta test system for targeted cellular mutagenesis by injection of oligonucleotides to apical meristem of maize seedlings

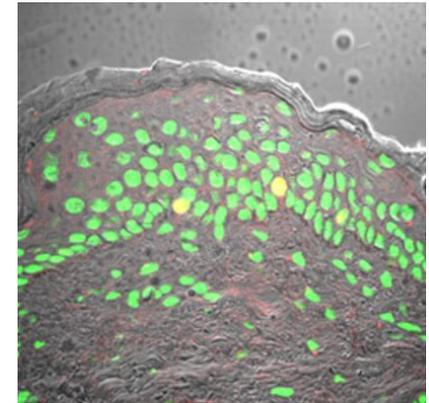
Feríz Rádi, Bettina Nagy, Györgyi Ferenc, Katalin Török, István Nagy, Zoltán Zombori, Dénes Dudits, [Ferhan Ayaydin](#)
Journal/Proc./Book: Acta Physiologiae Plantarum
Year: 2021



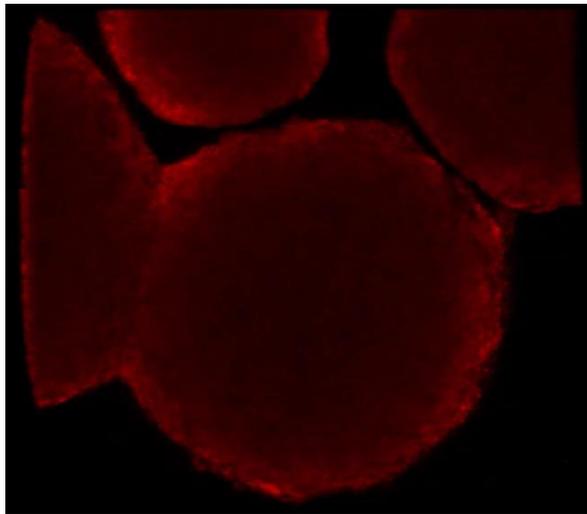
SEM 3D bioprinting analysis Dr. Veréb, USZ



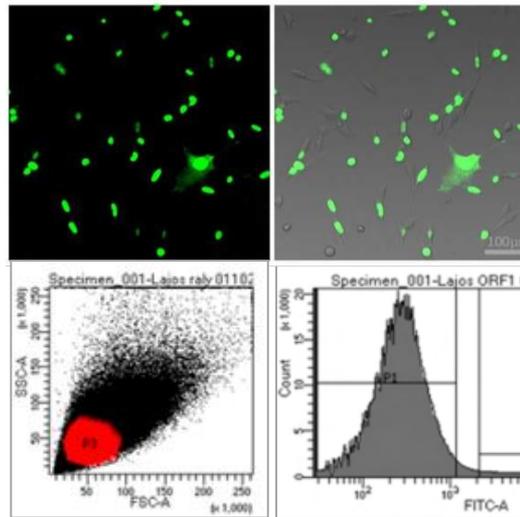
Nanoparticle vaccine delivery
Prof. Buzás, Semmelweis U.



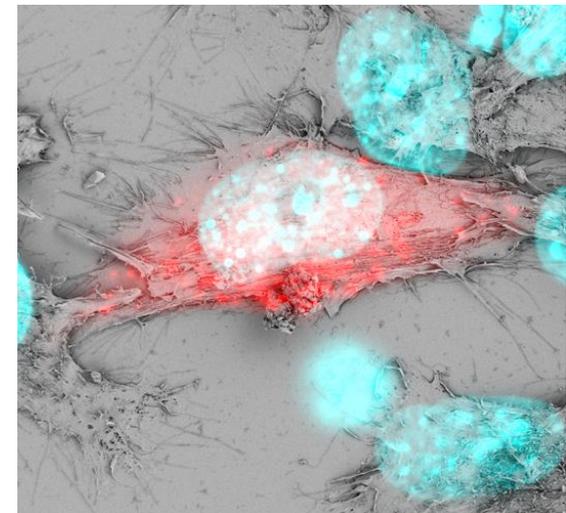
Psoriasis Prof. Kemény USZ



Spheroid imaging Prof. Dinnyés, USZ



Cell sorting Dr. Mátés, BRC



CLEM Dr. Maleth, USZ

Get in touch:

Ferhan Ayaydin, Ph.D.
University of Szeged, Faculty of Medicine,
HCEMM-SZTE Advanced Core Facility

Location: Korányi fasor 6, 6720 Szeged, Hungary

Email: ferhan.ayaydin@hceмм.eu

Website: www.hceмм.eu

Visit our website:

<https://www.euglohria.eu>



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Research Structures at the University of Porto

EUGLOHRIA WP3 – Workshop 2

11th of May 2022, on-line conference



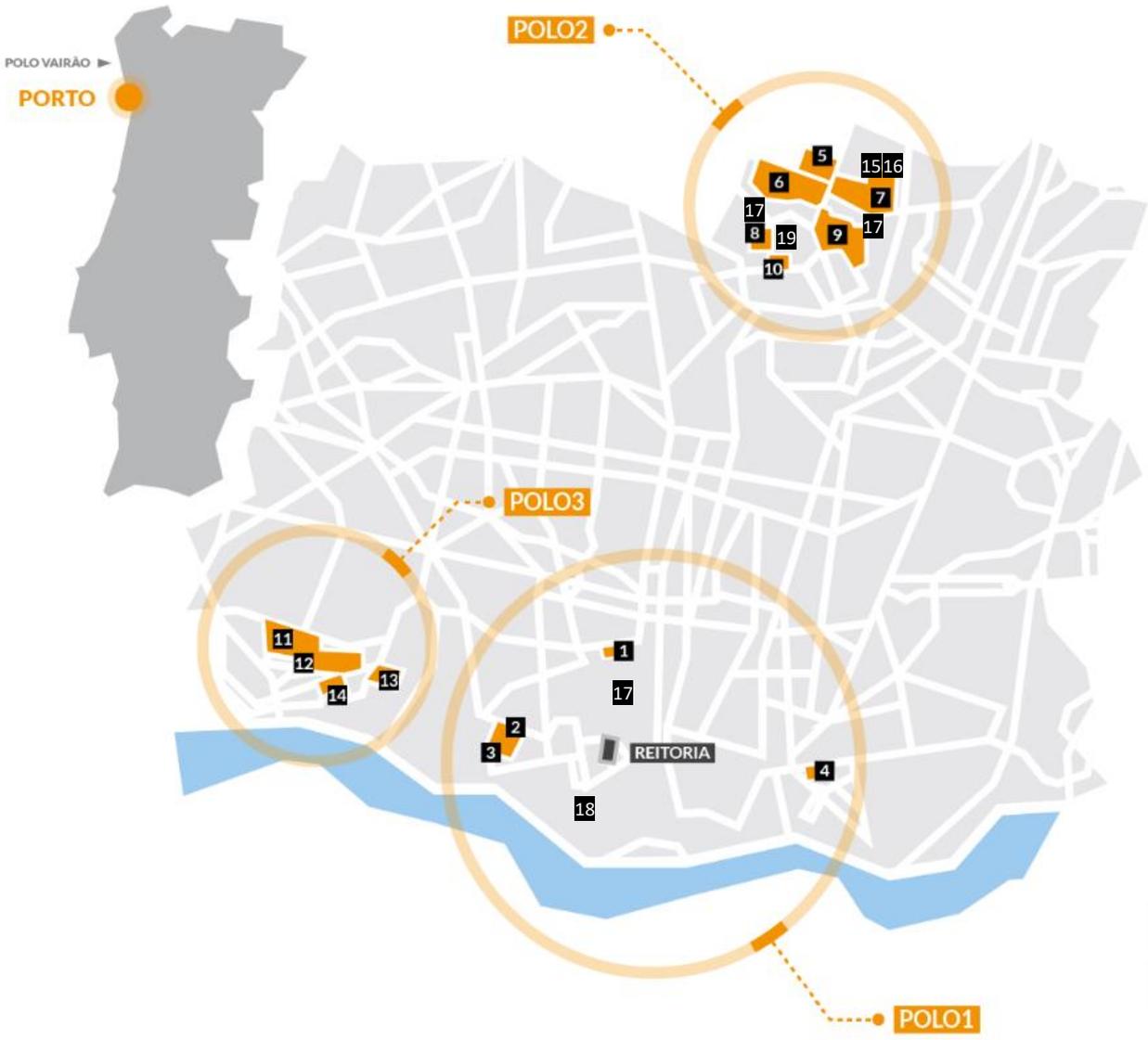
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>

OVERVIEW OF THE RESEARCH STRUCTURES AT U.PORTO

RESEARCH STRUCTURES AT U.PORTO

UNIVERSITY OF PORTO + LINKED THIRD PARTIES



- 1 Faculty of Law
- 2 Abel Salazar Institute of Biomedical Sciences
- 3 Faculty of Pharmacy
- 4 Faculty of Fine Arts
- 5 Faculty of Medicine
- 6 Faculty of Sports
- 7 Faculty of Engineering
- 8 Faculty of Psychology and Education Science
- 9 Faculty of Economics
- 10 Faculty of Dental Medicine
- 11 Faculty of Sciences
- 12 Faculty of Nutrition and Food Science
- 13 Faculty of Arts and Humanities
- 14 Faculty of Architecture

+

15 INESCTEC

16 ineqi driving science & innovation

17 UPTEC SCIENCE AND TECHNOLOGY PARK OF UNIVERSITY OF PORTO

18 ISPUP

19 INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE UNIVERSIDADE DO PORTO



3 Faculty of Pharmacy

- Laboratory of Bromatology and Hydrology
- Laboratory of Applied Chemistry
- Laboratory of Organic and Pharmaceutical Chemistry
- Laboratory of Pharmacognosy
- Laboratory of Biochemistry
- Laboratory of Microbiology
- Laboratory of Toxicology
- Laboratory of Pharmaceutical Technology
- Laboratory of Pharmacology

18 ISPUP

- Population Biobank**
- Cohorts (EPIteen, Generation XXI, Very Preterm babies, Men Who Have Sex With Men)



5 Faculty of Medicine

- Mutant and Transgenic Animal Unit (UAMT)
- Animal resource core (Animal Facility Unit)
- UnIC Cardiovascular Centre (Cardiac surgery databases, Heart Failure databases, Cardiobank, Small muscle tissue (cardiac and skeletal) function, ex-vivo), Biomimetic adult myocardium culture, ex-vivo, Molecular Biology applied to Cardiovascular Sciences; Histology applied to Cardiovascular Sciences)
- Global Congestive Heart Failure Registry
- Heart failure telemedicine technologies
- Inflammatory Diseases registry and software
- Severe Asthma registry and technology assessment
- Obstetric registry and software
- Primary health care data quality indicators
- Heart intervention technology data base

6 Faculty of Sports

LABIOMEPEP - Biomechanics Lab (Human Movement Analysis, Force Assessment, Muscle Activity and Pain, Training Evaluation and Assessment)

RESEARCH STRUCTURES IN POLO 2

POLO2



7 Faculty of Engineering

Hemodynamics Lab

Laboratory of Separation and Reaction Engineering / Laboratory of Catalysis and Materials (Cyclic Adsorption Processes, Process Intensification, Environmental Catalysis, Catalysis & Photocatalysis, Nanostructured Carbon Materials, Processes for Pollution Control, Waste Reuse, Recycling & Valorization, Mixing in Chemical Reactors, Nano-Micro Functionalized Materials, Agro-Food-Bio Processes and Valorization)

Laboratory for Process Engineering, Environment Biotechnology and Energy (Energy LAB, Adsorption and Membrane Gas Separation LAB, Graphene-based biomaterials LAB, Biofilm Eng LAB, FISH LAB, Nanotechnologies LAB, Crystallization LAB, AIR Quality and Health LAB, TRACES LAB, Multifunctional reactors Lab)

HEAL_ICT-ML Machine Learning for Clinical Diagnosis / HEAL_ICT-OCNL Optical control and non linear control for clinical decision support systems

8 Faculty of Psychology and Education Science

Laboratory of Neuropsychophysiology

10 Faculty of Dental Medicine

Dental Clinical Research Center

BoneLab (Biocompatibility and cytocompatibility / Genotoxicity assessment / Hemocompatibility assessment / Antibacterial activity assessment)



15 INESCTEC

- Smart Grids and Electrical Vehicles Laboratory (SGEVL)
- Modular Platform for Research, Test and Validation of Technologies supporting a Sustainable Blue Economy (TEC4Sea)
- European Multidisciplinary Seafloor Observatory – Portugal (EMSO-PT)
- iiLab - Industry and Innovation Lab
- Robotics and Autonomous Systems Laboratory
- INESC TEC Institutional & Research Data Repository

16 inegi driving science & innovation

Biomechanics

19 INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE UNIVERSIDADE DO PORTO

- Animal Facility
- Advanced Light Microscopy
- Genomics
- Proteomics Scientific Platform
- BioSciences Screening



11 Faculty of Sciences

Laboratory for Scanning Electron Microscopy and X-Ray Microanalysis
Laboratory for Mass Spectrometry
Laboratory for Electron Paramagnetic Resonance Spectrometry
Laboratory for Nuclear Magnetic Resonance Spectrometry
Ultrafast laser spectroscopy for biomedicine
Peptide and Peptide-Nucleic Acids Synthesis Facility (POP-UP)
FCUP | DQB - Lab&Services

12 Faculty of Nutrition and Food Science

BODYCOMPNUIT - DXA Body Composition, Nutrition & Health
FERMFOODS - Fermented Foods Lab

13 Faculty of Arts and Humanities

Genealogy data base

RESEARCH STRUCTURES AT U.PORTO

RESEARCH STRUCTURES TO BE PRESENTED TODAY

In order to better understand the best practices of U.Porto's Linked Third Parties, three of its Third Parties were invited to present one of their research structures, handling of IP rights/scientific results regarding research infrastructure share.

The research structures to be presented were selected by each of the invited Linked Third Parties:



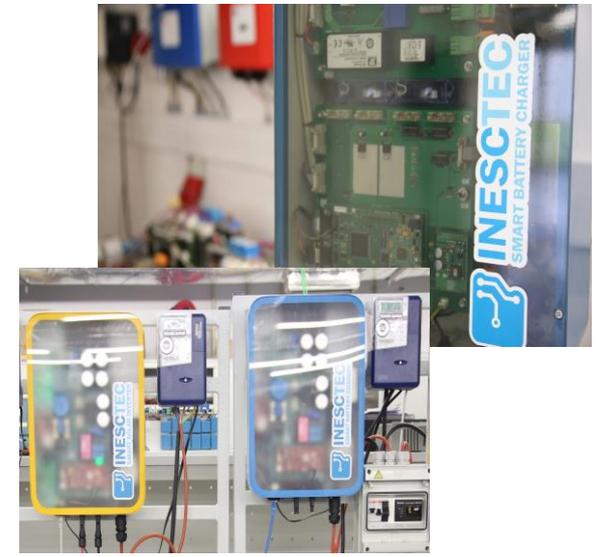
- **BIOSCIENCES SCREENING**
(DR ANDRE MAIA)



- **BIOBANK**
(PROF. HENRIQUE BARROS)



- **SGEVL - SMART GRIDS AND ELECTRICAL VEHICLES LABORATORY**
(PROF. LUÍS MIRANDA)





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

BioSciences Screening – i3S

EUGLOHRIA WP3 – Workshop 2

11th May 2022, on-line conference



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<https://www.euglohria.eu>



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Biobank – ISPUP

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference



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The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Smart Grids and Electrical Vehicles Laboratory SGEVL – INESC TEC

EUGLOHRIA WP3 – Workshop 2
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The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

BioSciences Screening – i3S

André Maia, PhD

*EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference*



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



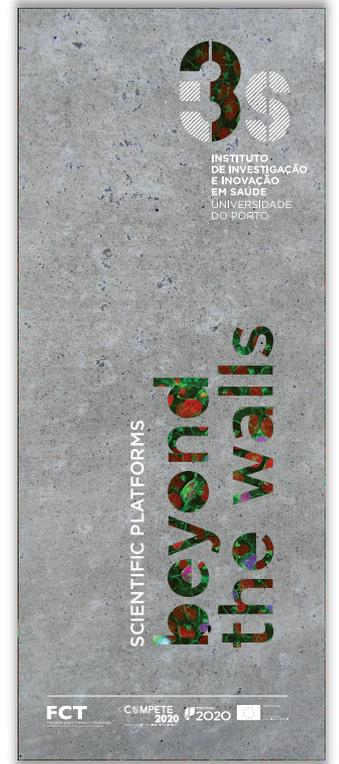
900 researchers

74 research groups

cancer

host interaction & response

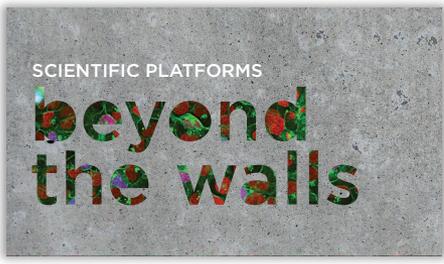
neurobiology & neurologic disorders



13 platforms



**INSTITUTO DE INVESTIGAÇÃO
E INOVAÇÃO EM SAÚDE**
UNIVERSIDADE DO PORTO



Biosciences Screening

The Biosciences Screening platform provides state-of-the-art technology and expertise to solve challenging questions with high throughput and high content technologies.



Highly qualified scientists with experience on project evaluation, assay and 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 compound screening libraries and is actively establishing collaborations in order to receive and expand its own libraries. Training is provided to all users and regular courses are organized for the general scientific community.

The Biosciences Screening platform is part of the PPBI - Portuguese Platform of Bioluminescence, and participates in the COST Actions NEUBIAS - Network of European Bioluminescence Analysts and the GENIE - Collaborative European Network of C.elegans early-stage researchers and young investigators.



André Mala

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Animal Facility

The i3S animal facility is an AAALAC accredited facility dedicated to the production and maintenance of laboratory animals. The facility provides care and veterinary advice on laboratory animals, mainly mice, rats and rabbits and holds approximately 2500 cages in SPF conditions.



Zebrafish and seabass models are also available (associated with specific research groups). The aim of the facility is to support scientific projects with animal experimentation ensuring high animal welfare standards by encouraging the application of the 3R's. The development of new models (both surgical and genetically modified - CrisprCas9) is supported by the facility team. Biocontainment areas for microbiological risk agents (level 2 and 3) are also available. The facility participates in the training of researchers, users and staff on laboratory animal science and promotes animal welfare practices.

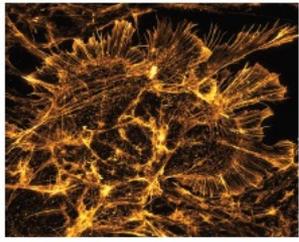


Sofia Lamas

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Advanced Light Microscopy

The Advanced Light Microscopy (ALM) platform specializes in biological imaging technologies to study cellular systems in all biosciences research areas.



The platform provides scientific guiding in project development including experimental planning and data analysis, training, access to equipment, technical support in image acquisition and analysis, and development of new technologies or applications. The ALM is accessible to academy, research institutes and industry on a fee basis open-access policy.

The Advanced Light Microscopy platform integrates the PPBI-Portuguese Platform of Bioluminescence, a member of the ELM- European Light Microscopy Initiative, and participates in COST actions NEUBIAS - Network of European Bioluminescence Analysts and COMULIS - Correlated Multimodal Imaging in Life Sciences.



Paula Sampaio

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Genomics

The Genomics platform was established in 2006 at Ipatimup. Since then, the facility has been steadily growing, both in human resources and equipment.



Today, it is a full service facility dedicated to providing researchers state-of-the-art technological solutions in the field of genomics and high throughput analysis. The platform offers technical expertise and support to experimental design, protocol development, and data analysis guidance, as well as training. Due to the very dynamic and rapidly evolving field of genomics, the platform's team actively collaborate with different companies in developing NGS-related products both for sample preparation and for bioinformatics data analysis.

The Genomics Platform is part of the GenomePT consortium and an Ion Torrent certified service provider.

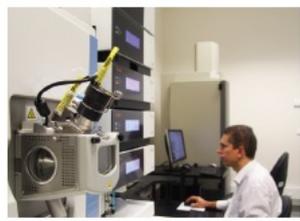


Ana Mafalda Rocha

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Proteomics

i3S Proteomics platform provides access to mass spectrometry analysis of protein samples from extracts, solutions and gel bands. The Proteomics platform is prepared to work in a variety of experimental workflows in order to provide answers to scientific questions and to address researchers' needs.



The team offers scientific and technical expertise with protocol design, experimental strategy, results/data interpretation and consultancy including assistance in grant proposals and project setup. We also provide training in workshops and pre-/ post-graduate courses.

The Proteomics platform is integrated at RNEM, the Portuguese Mass Spectrometry Network. RNEM is included in the FCT's Research Infrastructures Roadmap.



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i3S Scientific Platform

BioSciences Screening

Mission

Provide 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.

Expertise

- High throughput screening
- High Content screening
- Drug discovery
- Assay preparation and automation
- Digital image analysis
- Data analysis

Team



A. Maia, PhD

Head
HCS specialist
Bioimage analyst



A. Pombinho, PhD

HTS specialist
PT-OPENSREEN
EU-OPENSREEN



R. Reis, PhD

Assay development
specialist
Lab coordinator

i3S Scientific Platform BioSciences Screening

Resources / Key equipment

Assay preparation



Multidrop Combi



Liquidator g6



ALPS 50



JANUS w/MDT96

Data acquisition



INCELL Analyzer



Operetta CLS



Opera Phenix Plus

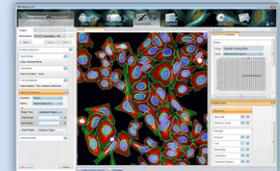


Synergy 2



Victor Nivo

Image, data visualization and analysis



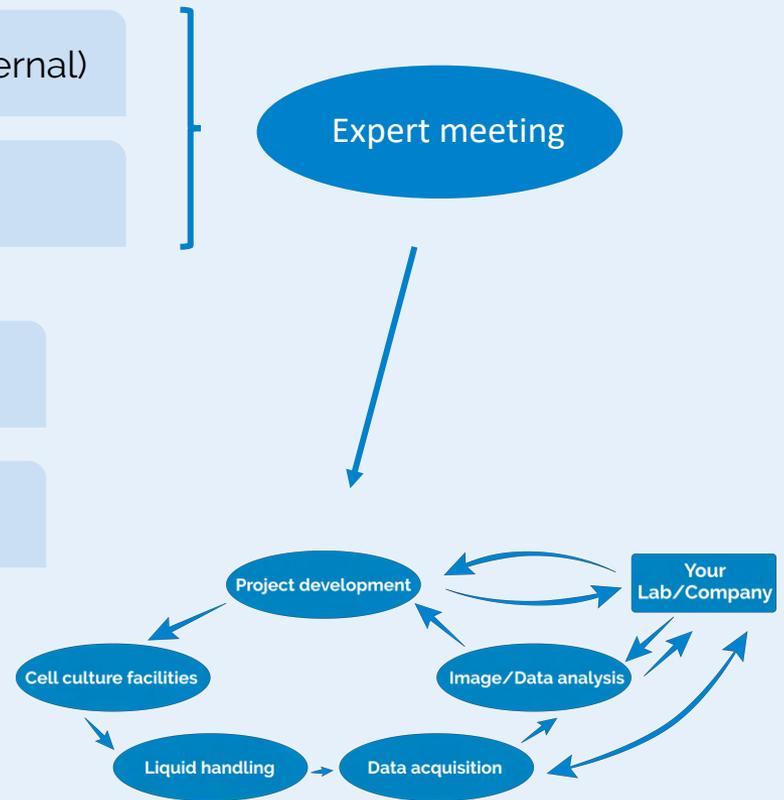
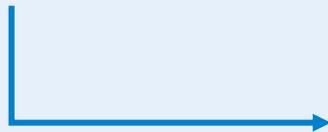
i3S Scientific Platform BioSciences Screening

Topic 1

Incoming requests & workflow

- Direct contact of the platform (internal/external)
- Service request (turnkey)

- Equipment reservation (scheduler, training required)
- External request for equipment usage (via on-line form, training required)



i3S Scientific Platform

BioSciences Screening

Topic 1

Incoming requests & workflow

- Direct contact of the platform (internal/external)
- Service request (turnkey)
- Equipment reservation
(scheduler, training required)
- External request for equipment usage
(via on-line form, training required)

First come first served

Priority is given to
internal requests

i3S Scientific Platform

BioSciences Screening

Topic 2

Platform costs, fees, remuneration

Costs

- HR
- Equipment maintenance
- Equipment consumables
- General running costs

Fees

** Price list is available for internal users, for externals we provide quotes by request*

Internal (i3S)

External academic
(Uporto)

External academic
(Non-Uporto)

Non-academic
(e.g. company)

i3S Scientific Platform

BioSciences Screening

Topic 2

Platform costs, fees, remuneration

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- Equipment maintenance
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- General running costs

Fees

** Price list is available for internal users, for externals we provide quotes by request*

Internal (i3S)

External academic
(Uporto)External academic
(Non-Uporto)Non-academic
(e.g. company)

€ consumables (100%)

€ equipment maintenance
contract (50%)

i3S Scientific Platform BioSciences Screening

Topic 2

Platform costs, fees, remuneration

Costs

- HR
- Equipment maintenance
- Equipment consumables
- General running costs

Fees

** Price list is available for internal users, for externals we provide quotes by request*

Internal (i3S)

External academic (Uporto)

External academic (Non-Uporto)

Non-academic (e.g. company)

€ consumables (100%)

€ equipment maintenance contract (50%)

+ 25% €

i3S Scientific Platform

BioSciences Screening

Topic 2

Platform costs, fees, remuneration

Costs

- HR
- Equipment maintenance
- Equipment consumables
- General running costs

Fees

** Price list is available for internal users, for externals we provide quotes by request*

Internal (i3S)

External academic
(Uporto)External academic
(Non-Uporto)Non-academic
(e.g. company)

€ consumables (100%)

€ equipment maintenance
contract (50%)

+ 30% €

Topic 2

Platform costs, fees, remuneration

Costs

- HR
- Equipment maintenance
- Equipment consumables
- General running costs

Fees

** Price list is available for internal users, for externals we provide quotes by request*

Internal (i3S)

External academic
(Uporto)

External academic
(Non-Uporto)

Non-academic
(e.g. company)

€ consumables (100%)

€ equipment maintenance contract

€ HR

€ facilities usage

+ x% concerning market

i3S Scientific Platform

BioSciences Screening

Topic 3

IP rights & publication of scientific results

Equipment usage only



Acknowledgment citation

Scientific collaboration with one or more team members (assay development, data analysis)



Authorship should be considered

Service (e.g. turnkey)



All data and IP is given to the client

Research Innovation Unit (Knowledge transfer, Research funding, Industry partnerships)

i3S Scientific Platform BioSciences Screening

Contact

André Maia – Head of platform

E-mail: andre.maia@i3s.up.pt

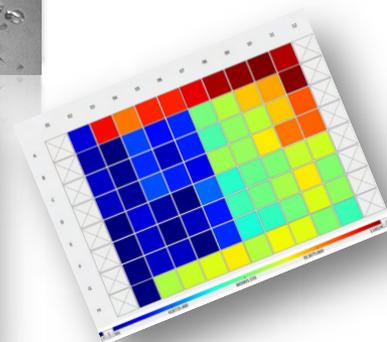
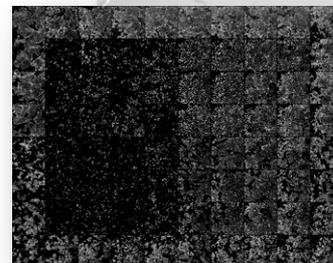
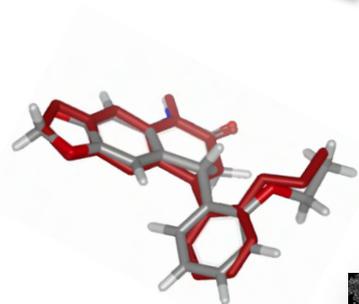
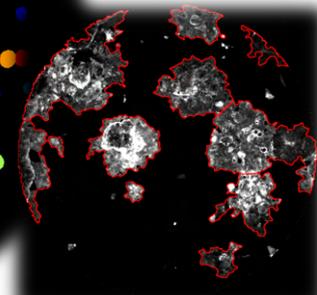
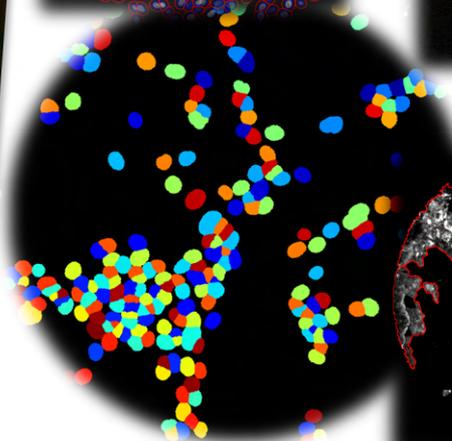
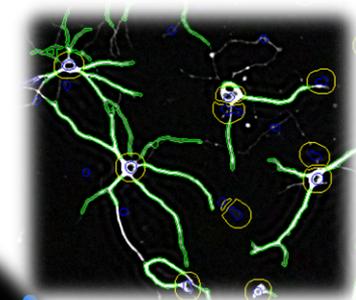
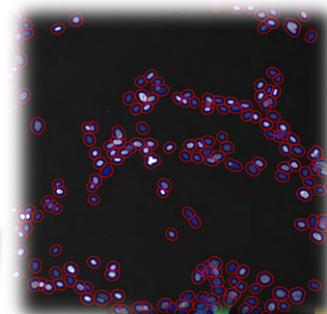
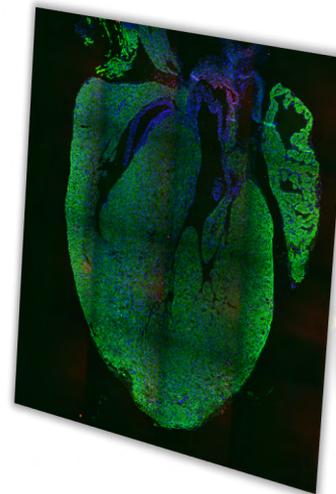
Phone: +351 226 074 981

Website

<https://www.i3s.up.pt/scientific-platform.php?groupid=93#about>

External request link

<https://portal.i3s.up.pt/index.php?id=386>



Henrique Barros

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- **WHY WE DID IT**
- **HOW WE DID IT**
- **WHAT WE FOUND**
- **SO WHAT**

- **POPULATION BASED - NOT DISEASE DRIVEN; MULTIPURPOSE**
- **REPRESENTATIVE SAMPLES OF THE GENERAL POPULATION**
- **INFORMED CONSENT. “DATA” OWNERSHIP - PARTICIPANTS**
- **RESEARCH ONLY: NON COMERCIAL, NON PROFIT UTILIZATION
(AS PER ENGAGEMENT WITH PARTICIPANTS)**
- **RECORD LINKAGE**
- **INTERNATIONAL EXCHANGE**

450,000 SAMPLES (AVAILABLE NOW)

~ 40,000 INDIVIDUALS

- **Blood (Serum, Plasma, buffy coat)**
- **DNA**
- **Teeth**
- **Breast Milk, Hair...**
- **Urine**

STAFF

SCIENTIFIC COMMITTEE

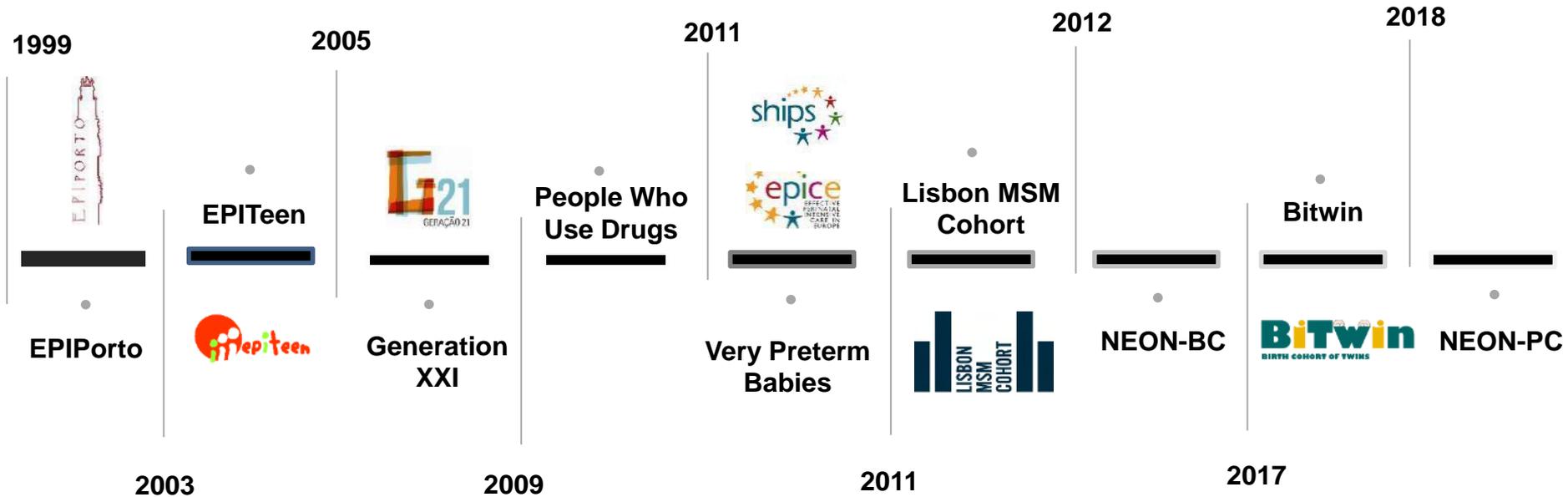
ETHICAL COMMITTEE

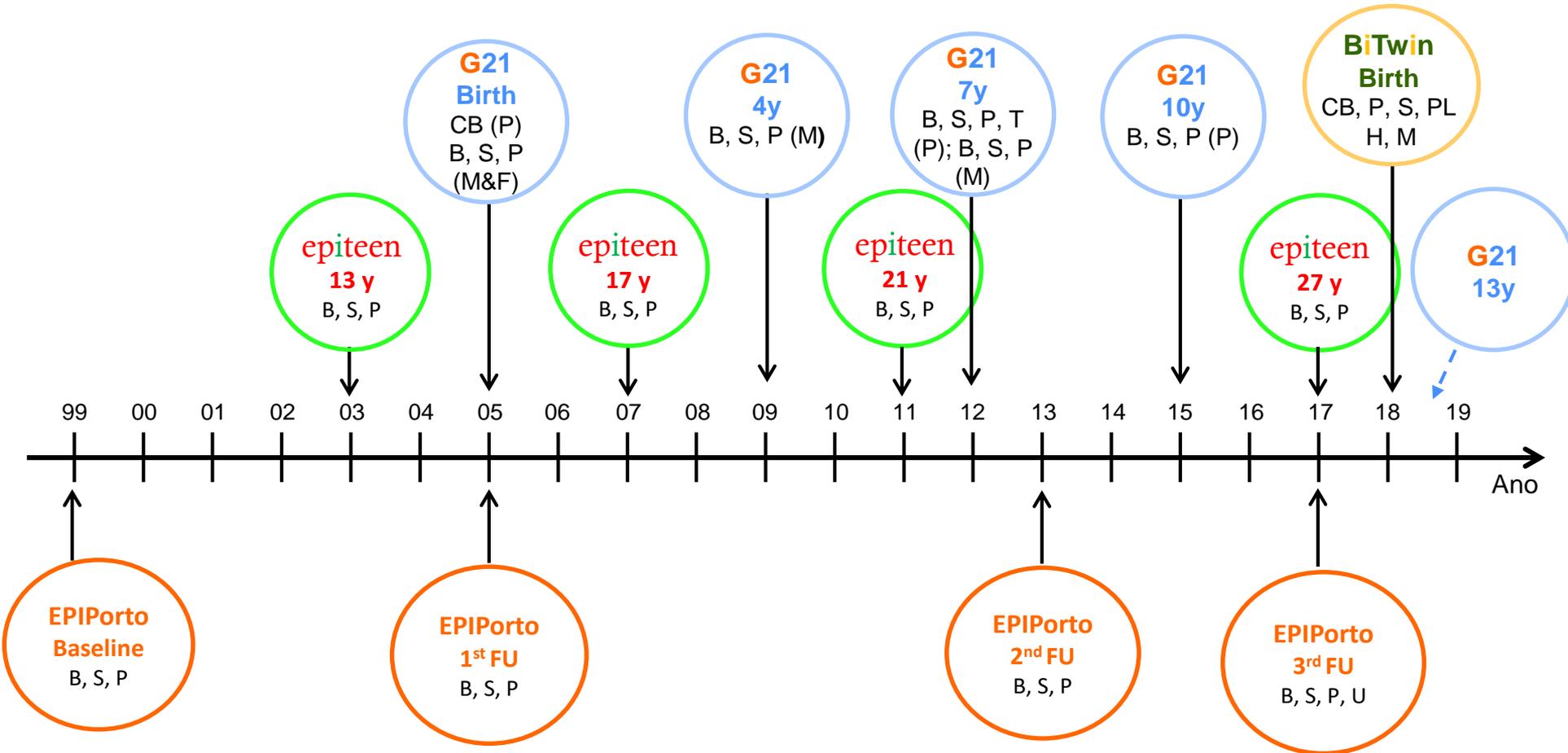
DPO

EXTERNAL ADVISERS

Funding and Sustainability

COHORTS **TIMELINE**





M – Mother
F – Father
P – Participant

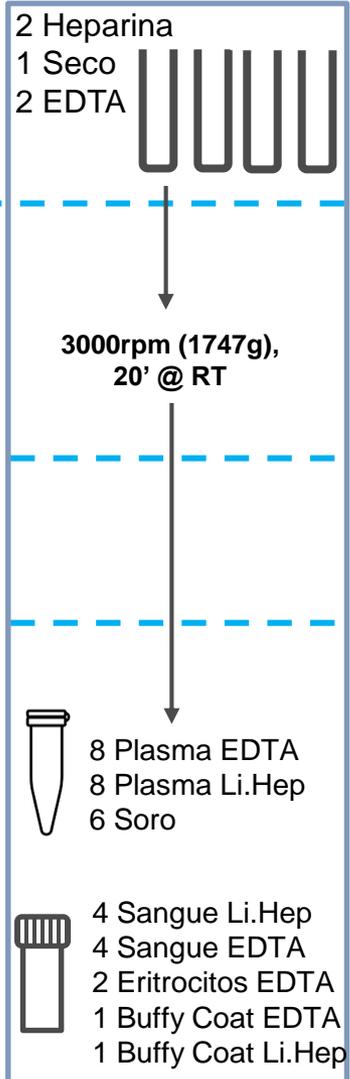
B – Venous blood
CB – Cord blood
P – Plasma

S – Serum
U – Urine
PL – Placenta

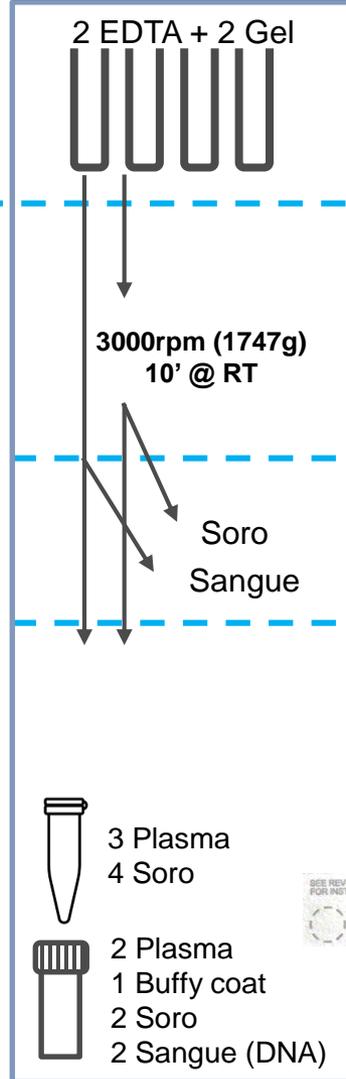
H – Hair
T – Deciduous teeth
M – Milk

FU – Follow-up

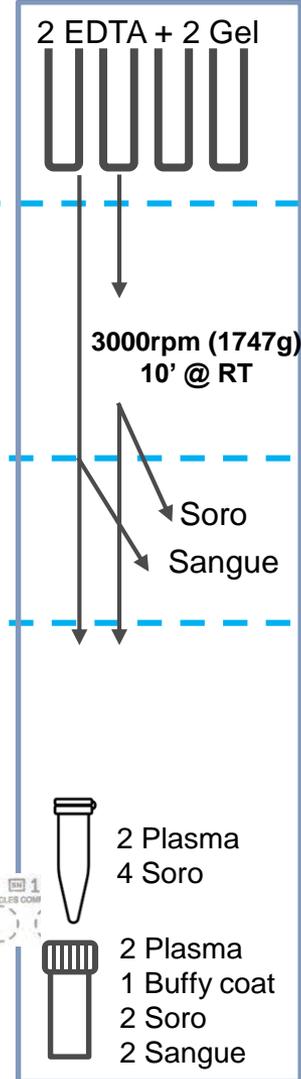
BiTwin Sangue cordão



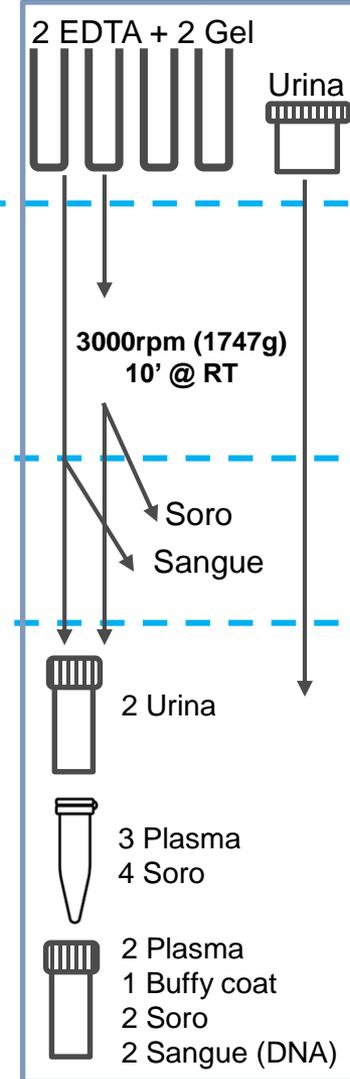
Geração XXI 10 anos (2015)



EPITeen 27 anos (2017)



EPIPorto 3º FU (2017)



Recolha

Processamento

Análises

Armazenamento

Colheita1

Colheita

ID1: IDA: membroid: data Nasc.:

Data Ingestão: Hora Ingestão:

Data Colheita: Hora Colheita:

Data Centrifugação Gel: Hora Centrifugação Gel:

Data Centrifugação EDTA: Hora Centrifugação EDTA:

Data Separação: Hora Separação:

Data Congelamento -80: Hora Congelamento -80:

Eppendorf:

Código Z:

Z Urina24h:

observações:

sangue Inteiro

		Posição						
Caixa:		Coluna	Linha	Estado	Presente	Volume	N Saldas	
<input checked="" type="radio"/> Sim	<input type="radio"/> Não	<input type="text" value="SI_01_156_2_CX44"/>	<input type="text" value="7"/>	<input type="text" value="H"/>	<input type="text" value="3"/>	<input type="text" value="1"/>	<input type="text" value="1000"/>	<input type="text" value="0"/> <input type="button" value="registo"/>
<input checked="" type="radio"/> Sim	<input type="radio"/> Não	<input type="text" value="SI_01_156_2_CX43"/>	<input type="text" value="7"/>	<input type="text" value="H"/>	<input type="text" value="3"/>	<input type="text" value="1"/>	<input type="text" value="1000"/>	<input type="text" value="0"/> <input type="button" value="registo"/>
<input checked="" type="radio"/> Sim	<input checked="" type="radio"/> Não	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="3"/>	<input type="text" value="1"/>	<input type="text" value="1000"/>	<input type="text" value="0"/> <input type="button" value="registo"/>

Eppendorf

amostra: Caixa:		Coluna	Linha	Estado	nSaldas:	volAmostra:	
<input checked="" type="checkbox"/>	<input type="text" value="SORO_01_156_0_5_CX100"/>	<input type="text" value="10"/>	<input type="text" value="J"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="450"/>	<input type="button" value="registo"/> 179489
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<input checked="" type="checkbox"/>	<input type="text" value="PLASMA_01_156_0_5_CX38"/>	<input type="text" value="1"/>	<input type="text" value="E"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="450"/>	<input type="button" value="registo"/> 179491
<input checked="" type="checkbox"/>	<input type="text" value="PLASMA_01_156_0_5_CX38"/>	<input type="text" value="2"/>	<input type="text" value="E"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="450"/>	<input type="button" value="registo"/> 179492
<input checked="" type="checkbox"/>	<input type="text" value="PLASMA_01_156_2_CX45"/>	<input type="text" value="4"/>	<input type="text" value="C"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="1200"/>	<input type="button" value="registo"/> 179493
<input checked="" type="checkbox"/>	<input type="text" value="PLASMA_01_156_2_CX45"/>	<input type="text" value="5"/>	<input type="text" value="C"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="1200"/>	<input type="button" value="registo"/> 179494
<input checked="" type="checkbox"/>	<input type="text" value="BC_01_156_2_CX22"/>	<input type="text" value="7"/>	<input type="text" value="H"/>	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="800"/>	<input type="button" value="registo"/> 179495

Registo: 1 de 10 | Sem Filtro | Procurar

Registo: 96 de 26174 | Não Filtrado | Procurar

Painel de Navegação

Biobank ISPUP 2022



N=15 @ -80°C

ROOM +20°C

N=5 @ -20°C

Freezers Monitoring (AdvanLab, Laborial)

Biobank ISPUP 2022



How are handled the incoming requests for facility usage ?

- Written request using a standard template asking for:
 - Identification of the Investigators
 - Project summary
 - Financing involved
 - Ethical issues
 - Type and extent of data needed
 - Involvement of ISPUP researchers



Formulário para acesso a dados da coorte de nascimentos Geração XXI (G21)

1. Identificação

Primeiro autor

Coautores:

Coautores G21: [CLIQUE AQUI PARA INTRODUIR TEXTO.](#)

Coautores (externos à coorte) - Nomes: [CLIQUE AQUI PARA INTRODUIR TEXTO.](#)

a. Nome provisório do artigo:

b. Data início

c. Data fim

(o draft do artigo deverá ser enviado à coordenação do Geração 21)

2. Financiamento

O projeto irá ser submetido a financiamento?

Se sim, data limite para submissão da proposta [Clique aqui para introduzir uma data.](#)

Fontes de financiamento:

How are determined the costs/fees/remuneration of facility usage ?

- Based on the number of samples
- Based on involved preparation steps
- + transport

How are Intellectual Property rights and scientific results handled in connection with shared facility usage

- Written agreement considering expected results and involvement of Biobank team members

BIOBANCOS, INVESTIGAÇÃO E SAÚDE PÚBLICA: PROMESSAS E DESAFIOS

José Pedro Silva
Henrique Barros
editores

Índice

Introdução	
<i>José Pedro Silva e Henrique Barros</i>	3
Parte I: Biobancos e saúde pública	9
Os biobancos de base populacional a partir de uma perspetiva epidemiológica e de saúde pública	
<i>Henrique Barros</i>	11
A importância da perceção do risco para a discussão sobre os biobancos com finalidades de investigação científica	
<i>Alexandre Quintanilha</i>	19
O que falta para ligar os biobancos à saúde pública em Portugal?	
<i>Jorge Torgal</i>	25
Parte II: Biobancos e recomposições sociais	32
Os portugueses e os biobancos: um primeiro mapeamento de uma realidade emergente	
<i>Brígida Riso</i>	35
Uma reflexão sobre os biobancos para fins de investigação a partir das coortes do Instituto de Saúde Pública da Universidade do Porto	
<i>João Tiago Guimarães</i>	43
Biobancos e investigação médica e em saúde: mudança e incerteza	
<i>José Pedro Silva</i>	49
Os biobancos e a questão das práticas tecnológicas e da dinâmica mercantil em torno da vida e dos bens que corporizam	
<i>José Luís Garcia</i>	59



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Smart Grids and Electric Vehicles Laboratory (SGEVL) – INESC TEC

EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017572.

<https://www.euglohria.eu>



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Brief presentation of the platform



**CENTER FOR POWER AND ENERGY SYSTEMS
LABORATORY INFRASTRUCTURES**

MONITORING, MANAGEMENT, CONTROL

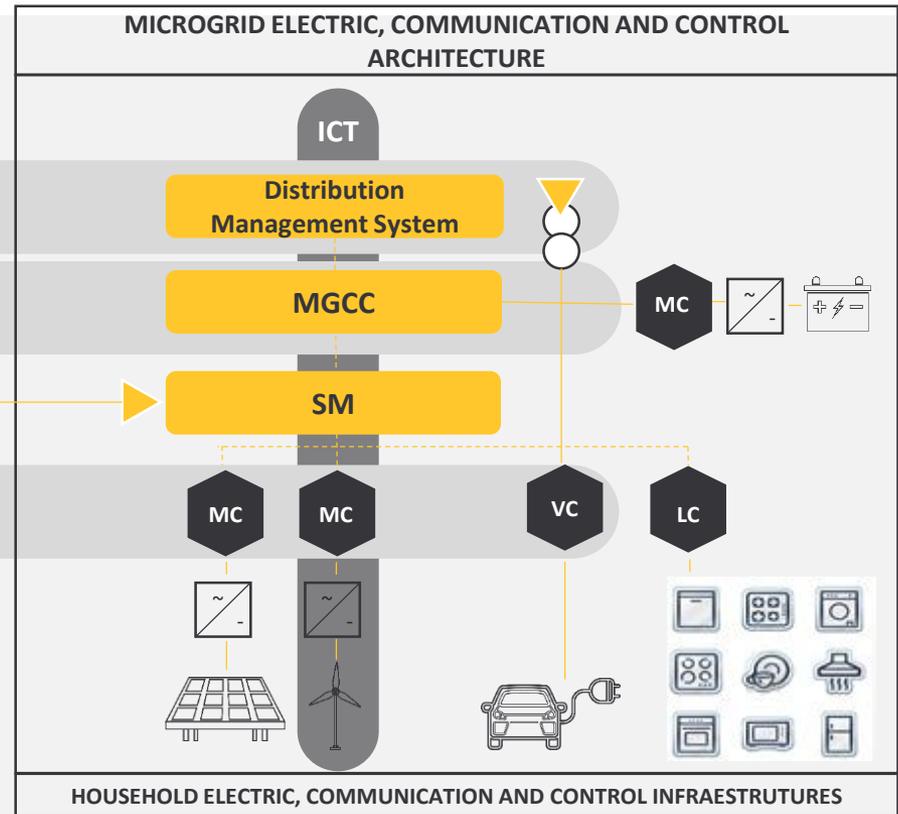
MONITORING, MANAGEMENT, CONTROL



LOCAL CONTROL

MODULARITY:

- Integrate devices and systems in real and flexible LV grid
- Make use of communications solutions for RT applications
- Emulation of larger grid, systems and devices



Brief presentation of the platform

- Laboratory of Smart Grids and Electric Vehicles (**SGEVL**) is one of the experimental and testing infrastructures of **INESC TEC**.
- It comprises applied research and deployment of novel technologies in the areas of Electric Mobility, Power Electronics, Smart Grids, Energy Management.
- Offers a vertical approach from conceptual design up to high TRL prototyping and field demonstration to Industry, Education and Community. Develop projects with national funding, European funding and direct contracts with companies.
- The research team is composed of several PhD, MSc students and contracted researchers, with extensive know how and highly motivated.
- Is currently member of **RNIE** (National Strategic Infrastructures Roadmap), **DERLab** (European Distributed Energy Resources Laboratories), **AIOTI** (The Alliance for the Internet of Things Innovation) and **ETSI** (European Telecommunications Standards Institute).

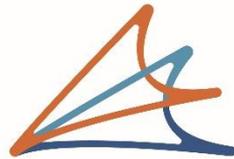


The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?

- Request come from multiple sources such as SGEVL/INESCTEC website, networking, exhibitions, project partners, etc.
- In a first step they are forward to infrastructure manager and CPES coordination.
- A team of experts from SGEVL and CPES is formed to evaluate the challenges.
- Meetings are promoted to better know and understand each other. Distinct type of user (commercial/non-commercial), challenges, needs, competences and equipment needed, timeline.
- The IP-related internal authority is involved since the beginning to help dealing with IP issues.
- All parties involved work together to find the most adequate way of collaboration (project, consulting service, rental, etc...). NDA are strongly encouraged since first steps.
- In case of success, we formalize, including definition of goals, deliverables, IP, timeline, costs, etc. We also define the adequate means of access to physical infrastructure.



EUGLOHRIA

The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

- We always try to find the most adequate way of remuneration for the partners who reach us with challenges.
 - For cost determination is crucial to distinct the type of activity of the partner (commercial/non-commercial).
 - Direct remuneration – usually adequate to commercial partners – pay for equipment use and/or man-hours, IP, others. Fixed only or hybrid (fixed + success fee).
 - Indirect remuneration – usually best suited for non-commercial partners – exchange of knowledge/data/resources, common scientific publications, etc.
- *As part of RNIE, SGEVL has national funding to support the scientific and technological ecosystem in Portugal for supporting non-commercial research activity.*



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

- The use of NDA for IP and sensitive data protection is strongly encouraged by SGEVL in all collaborations from first steps.
- Is key to identify clearly the IP/data/knowledge ownership prior the collaboration.
- Should be defined who will own the IP/publication rights after the collaboration.
- Joint-publications are usually a win-win situation for both parties!
- In collaborations with companies with commercial activity, the main goal of resulting IP is to be licensed or transferred to the company.
- On the other hand, in collaboration with other research and education entities, complementarity and achieving technical and scientific advances by joining efforts and knowledge is the way to go!

Get in touch:

Luís Miguel Miranda

SGEVL Manager

luis.m.miranda@inesctec.pt



Visit our website:

<https://www.euglohria.eu>



European University Alliance for Global Health

WP 3

Shared Use of Research Infrastructures

Ludwig-Maximilians-Universität - LMU

EUGLOHRIA WP3 – Workshop 2

11th May 2022, on-line conference



LMU Institutional Background

Students enrolled (2019/20):	53.091
Professors (2019):	787
Third-party funds (2019):	312 Million €
Core facilities:	38

Highly successful in all funding lines of the German Excellence Competitions since 2006, including 4 current Clusters of Excellence:

- MCQST: Munich Center for Quantum Science and Technology
- ORIGINS: From the Origin of the Universe to the First Building Blocks of Life
- SyNergy: Munich Cluster for Systems Neurology
- e-conversion

LMU Institutional Background

Global Engagement

Founding member of LERU and Venice International University (VIU)

Research oriented key partnerships with UC Berkeley, Tokyo, New York University, Tel Aviv University, University of Cambridge

Research partnerships with Singapore (NUS, NTU)

LMU – China Academic Network

LMU - Latin America Network

Participation in 19 Marie Skłodowska-Curie Innovative Training Networks (ITN) and 6 International Max Planck Research Schools (IMPRS)

Strong Performance in European Programmes

International Campus

International Students - 9000 from 139 countries
Europe – 63%

Asia - 26% (China 1000)
Americas – 6,5% (USA 250)
Africa – 3,5%
Oceania 0,5%

27 English taught Master programmes

7 joint double and triple master degree courses, incl. two Erasmus Mundus programs (Evolutionary Biology, Materials Science)

Munich International Summer University – MISU

EUGLOH

Mobility

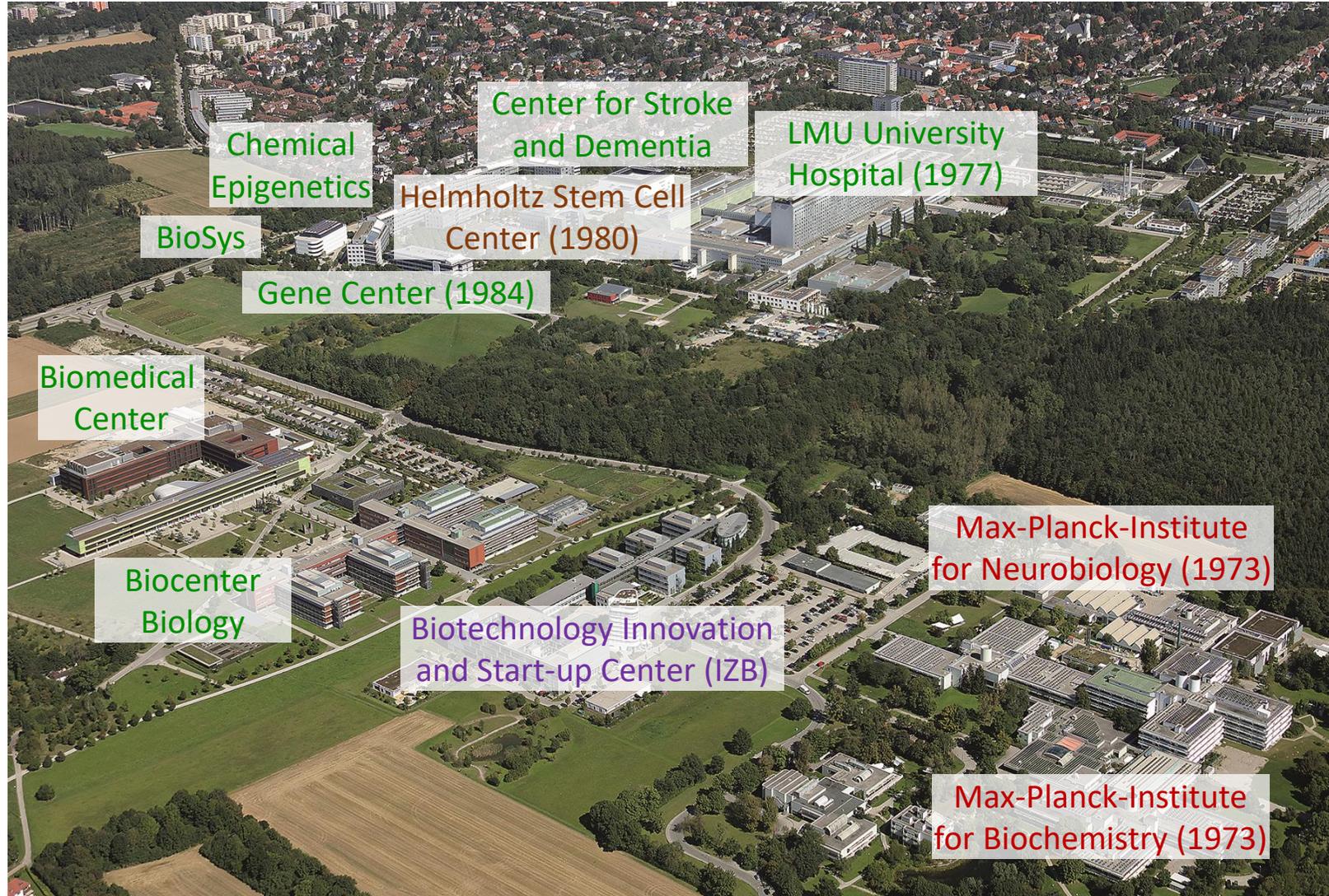
800 Exchange students in/out

Cooperation with well over 500 partner institutions worldwide

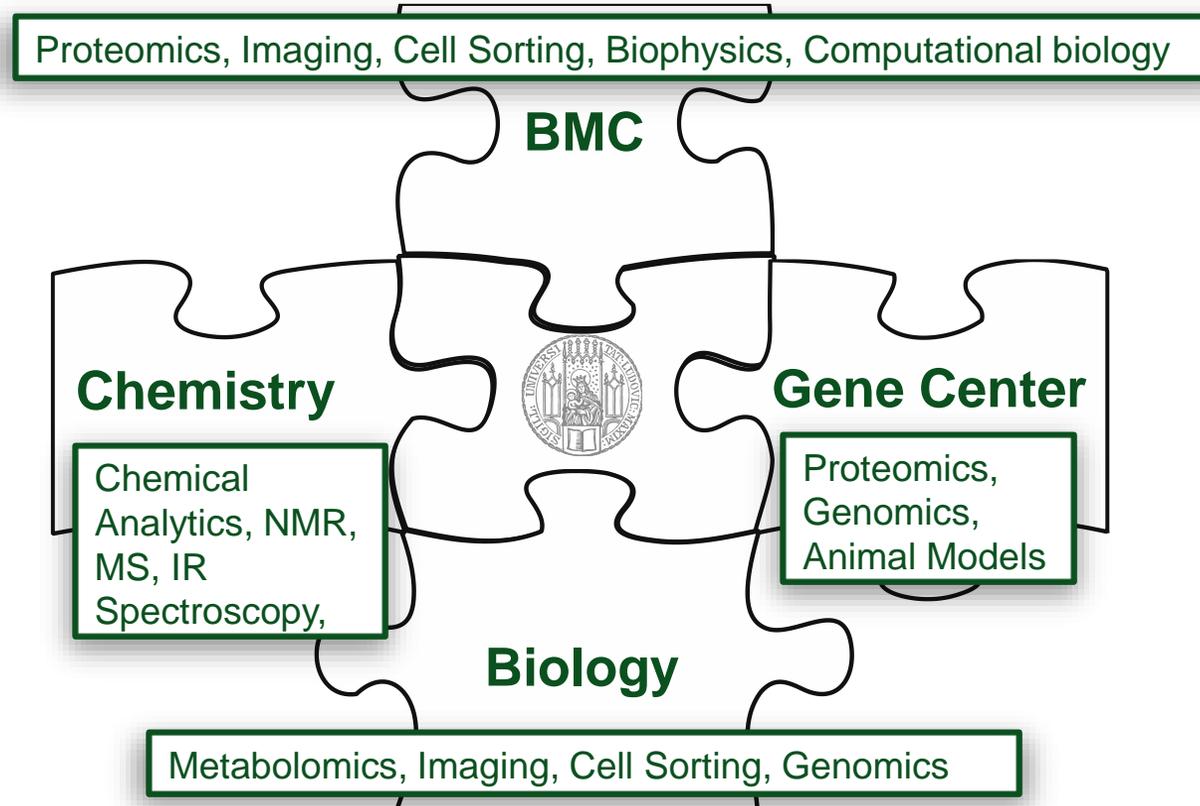
Erasmus+ partner countries: Brazil, Australia, Canada, Israel, Thailand, Vietnam, Ethiopia



LMU Life Science Campus



LMU Life Science Core Facilities



LMU Core Facilities:

- 20 M€ Total Investment
- 357 Publications within the last 5 years
- Contribution to >100 Master and PhD's within the last 5 years
- 12 Advanced courses within the last 5 years.

BMC Core Facilities

LMU

LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN



BIOMEDICAL CENTER MUNICH
BIOMEDIZINISCHES CENTRUM MÜNCHEN

CORE FACILITIES



CORE FACILITY PROTEOMICS

ZENTRALLABOR FÜR PROTEINANALYTIK

OUR MISSION

The three fundamental missions of the Core Facility Proteomics (ZfP) are to provide a state-of-the-art service in protein identification, characterization and quantification, to develop and establish key methodology and to do original research in the areas defined by the clients and our personnel.

OUR KEY SERVICES

- Stoichiometry of non-covalent complexes
- Separation and identification of complex peptide mixtures (immunoprecipitation, affinity purification, organelle XXX) by LC-MS/MS
- *de novo* sequencing of proteins
- Analysis of post-translational modifications
- Analysis of crosslinked samples
- Spatial MS analysis by MALDI imaging
- Measurement of clinical sample cohorts like human plasma, serum, tissue (fixed or fresh), laser-dissected tissue or sorted cells



OUR FEATURED INSTRUMENTS

- timsTOF Pro LC MS System
- Exploris480 LC MS System
- QExactive HF LC MS System
- RapiFlex
- Triple TOF 6600 CESI-MS System
- 4800 MALDI TOF/TOF



SOME OF OUR HIGHLIGHTS

The ZfP was established at the Medical Faculty in 2002 and is based in the BMC since 2015. Our methods range from characterizing and quantifying specific proteins, modifications, or complexes to performing deep analyses of entire proteomes, phospho-proteomes and acetylomes. We belong to the world's leading laboratories in the quantitative investigation of histone modifications.

Recently, we also established a branch dedicated to the high-throughput analysis of clinical specimens for diagnostic purposes (ClinZfP).



OUR NETWORK

We are:

- member of the *Munich Cluster of Clinical Mass Spectrometry*
- member of the *Core Facility Interest Group of the Deutsche Gesellschaft für Massenspektrometrie*
- member of the *European Society of Core Technologies for Life Sciences* (<https://ctls-org.eu/>)
- listed in the Research Infrastructure data base *RISources* of the DFG

OUR TEAM

Head
Prof. Dr. Axel Imhof

Technical director
Dr. Igansi Forne

Scientists
Dr. Teresa Barth
Dr. Marco Borso
Dr. Shibojyoti Lahiri

Technicians
Pierre Schilcher
Marc Wirth

OUR CONTACT

Zentrallabor für Proteinanalytik
Biomedical Center
LMU Munich
Großhaderner Str. 9
82152 Planegg-Martinsried

Phone:
0049 89 2180-75420/-75775

Email: imhof@lmu.de

Website:
www.proteinanalytik.abi.med.uni-muenchen.de



BMC Core Facilities

LMU

LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN



BIOMEDICAL CENTER MUNICH
BIOMEDIZINISCHES CENTRUM MÜNCHEN

CORE FACILITIES

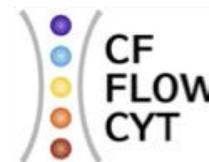


CORE FACILITY FLOW CYTOMETRY

DURCHFLUSSZYTOMETRIE

OUR MISSION

The Core Facility Flow Cytometry provides training and cutting edge instruments (including service operation) for flow cytometry analysis, cell sorting and imaging cytometry, enhancing the research of both the academic and industrial biomedical research community.



OUR FEATURED INSTRUMENTS

- A range of high-end cell sorters with up to 5 lasers
- BD LSRFortessa 5-laser
- Cytek Aurora 5-laser (full spectrum cytometer)
- ImageStream MarkII Imaging Flow Cytometer 5-laser

OUR KEY SERVICES

- Flow cytometric analyses (including "exotic" applications)
- Cell sorting (including biosafety option)
- Imaging cytometry
- Instrument usage training
- Workshops & classroom courses in flow cytometry and data analysis



SOME OF OUR HIGHLIGHTS

Besides a strong focus on robust routine workflows we have implemented and continuously develop cutting edge applications such as high-parameter flow cytometry, sorting of highly sensitive/fragile cells (e.g. adipocytes), high-throughput screening and 'niche' applications such as bacterial analysis and virometry. Our Imaging Cytometry equipment combines the analysis abilities of flow cytometry with spatial resolution and automated image analysis.



OUR NETWORK

We are

- member of the *International Society for the Advancement of Cytometry*
- member of the *Deutsche Gesellschaft für Zytometrie*
- member of the national platform *Cytometry.de*
- listed in the Research Infrastructure data base *RISources* of the DFG

OUR TEAM

Head
Prof. Dr. Ludger Klein
Technical director
Dr. Lisa Richter
Scientist
Pardis Khosravani, M.Sc.



OUR CONTACT

Core Facility Flow Cytometry
Biomedical Center
LMU Munich
Großhaderner Str. 9
82152 Planegg-Martinsried

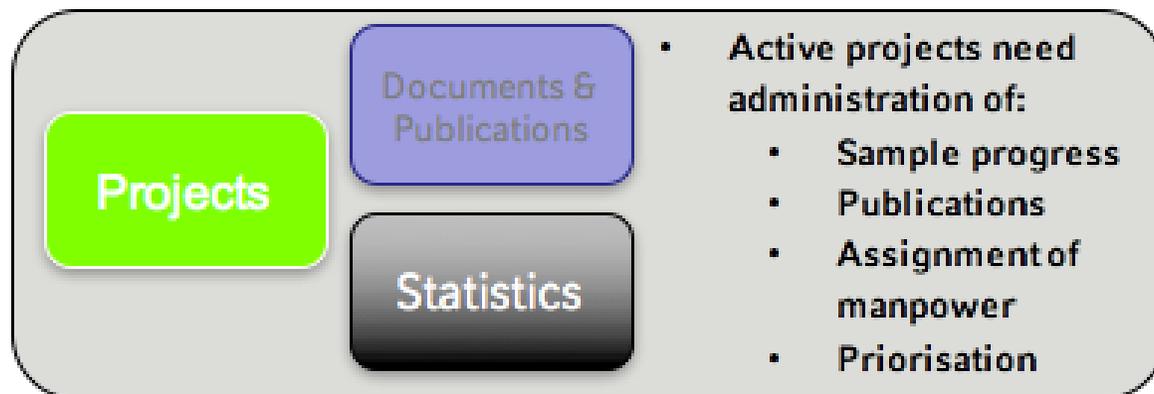
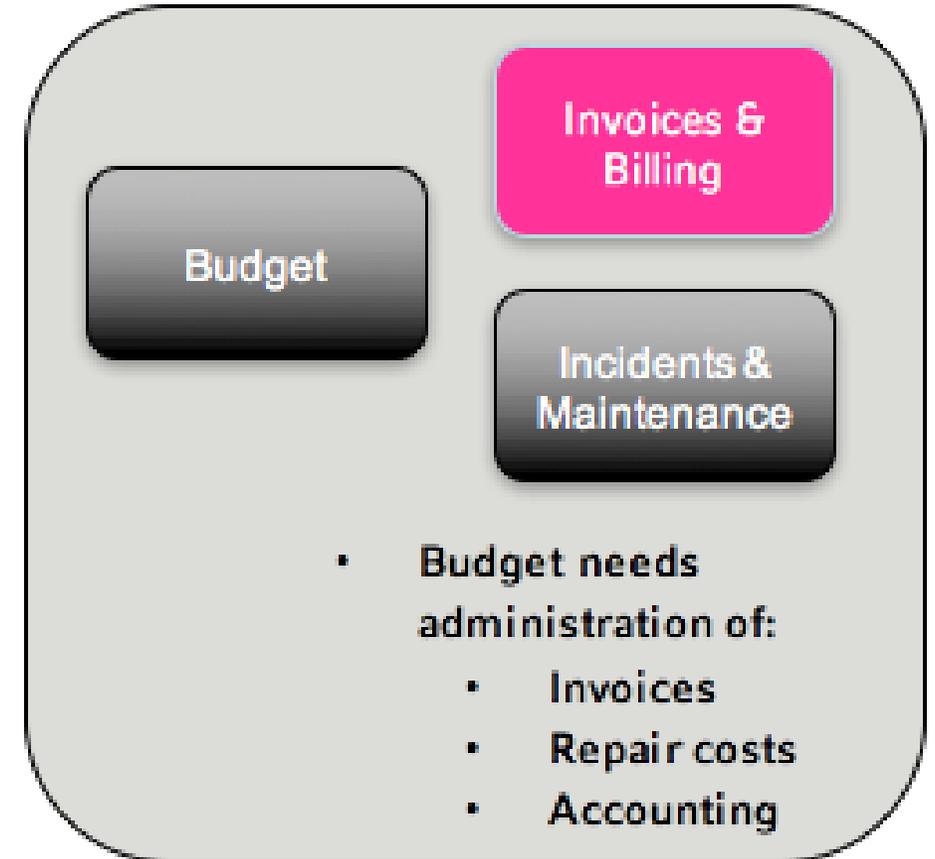
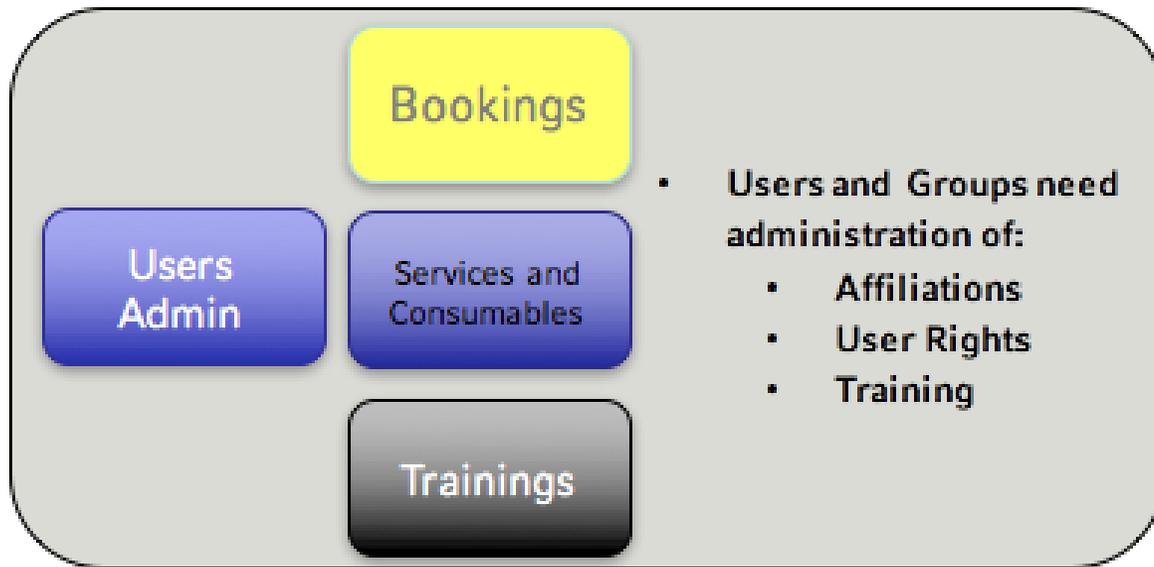
Phone:
0049 89 2180 71856

Email:
Richter@med.uni-muenchen.de

Website:
www.flowcytometry.bmc.med.uni-muenchen.de



Core Facility challenges



One web platform

The screenshot shows a web browser window with the URL `ppms.eu`. The browser's address bar contains several tabs, including 'LabCollector ...cular Biology', 'LRZ: Id-Portal', 'DaMaRIS Startseite', 'MWN Storage Cloud', 'PPMS for the ZfP Facility', 'Referat VI.5... LMU München', 'LRZ_DATWeb 3.0', 'Medizinische ...taet der LMU', 'STRING: func...ion networks', and 'WetterOnline ...rschlagsbild'. The PPMS logo is visible in the browser's address bar.

The main content area of the page features a dark blue header with the text 'PPMS'. Below this, the section 'Start page' is displayed, followed by a search bar with the placeholder text 'Search ...'. A section titled 'Facilities available in Ludwig-Maximilians-Universität München:' lists several facilities with bullet points:

- Biomedical Center - BioPhysics Core Facility (BPCF) details
- Biomedical Center - Core Facility Animal Models (CAM) details
- Biomedical Center - Core Facility Bioimaging (CFBim) details
- Biomedical Center - Flow Cytometry (FlowCyt) details
- Biomedical Center - Zentrallabor für Proteinanalytik (ZfP) details
- Gene Center - Flow Cytometry Facility (GCFowCyt) details
- Klinikum - Martinsried Forschungshaus (MaRiFor) details

Below the list, a section titled 'My PPMS dashboard:' contains a single bullet point:

- My PPMS: for an overview of your activity and pending requests system-wide (on all facilities).

The page concludes with a note: 'You can use the links above to access directly these facilities. Note: If you have not used the system for more than 320 minutes, you will automatically log-out and you may be redirected to this page. Also, if your browser does not accept 'cookies' you will be redirected here.'

One web platform

The screenshot shows a web browser window with the URL `ppms.eu`. The browser's address bar and tabs are visible at the top. The page header includes the LMU logo, the text "LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN", and "PPMS FOR THE GENE CENTER - FLOW CYTOMETRY FACILITY - GCFlowCyt". A navigation menu is located below the header, with a blue bar containing links: Home, Book, Request, Documents, Schedules, Statistics, Reports, Publications, Profile, Logout. A second bar contains: Incidents, Rights, Training, Projects, Settings, Users, Accounts, Admins, Invoicing, Help.

The main content area is titled "Home" and shows the current user as "Imhof Axel (super-admin) see PPMS as a regular admin". It features several summary boxes:

- 1 Financial Account Creation Request
- 4 Session(s) Scheduled Today
- 1 Unvalidated Incident
- 2 User Financial Account Number Modification Requests

Below these is a "Book a system:" section with a dropdown menu labeled "Systems available:" and a "book" button. Underneath is a link: "Make a new request: request a training".

At the bottom, there are two expandable sections:

- Report a Publication**: "Please report any publication that used GCFlowCyt resources. This is very important for us when we submit grant applications or grant renewals, so thanks in advance for your help!"
- My Sessions**: "No sessions booked on this core."

Additional UI elements include "Restore Default Sections" and "+ Add a New Section to the Home Page" buttons.

One web platform

The screenshot shows a web browser window with the URL `ppms.eu`. The browser's address bar and tabs are visible at the top. The main content area features a green header with the LMU logo and the text "LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN" and "PPMS FOR THE BIOMEDICAL CENTER - ZENTRALLABOR FÜR PROTEINANALYTIK - ZFP". Below the header is a navigation menu with links: Home, Book, Order, Request, Documents, Schedules, Statistics, Reports, Publications, Profile, Logout, Incidents, Rights, Training, Projects, Orders, Settings, Users, Accounts, Admins, Invoicing, and Help.

The main content area is titled "Home" and includes a user status indicator: "Current user: Imhof Axel (super-admin) see PPMS as a regular admin".

Key statistics and actions are displayed in a grid:

- 12 Accepted Orders**
- 1 Financial Account Creation Request**
- 12 Prepaid Account Low Warnings**
- 6 Quotes**
- 2 User Financial Account Number Modification Requests**

Two main action buttons are present:

- Book a system:** A dropdown menu labeled "Systems available:" followed by a **book** button.
- Order a service or a consumable:** A dropdown menu labeled "Services/consumables available:" followed by an **order** button.

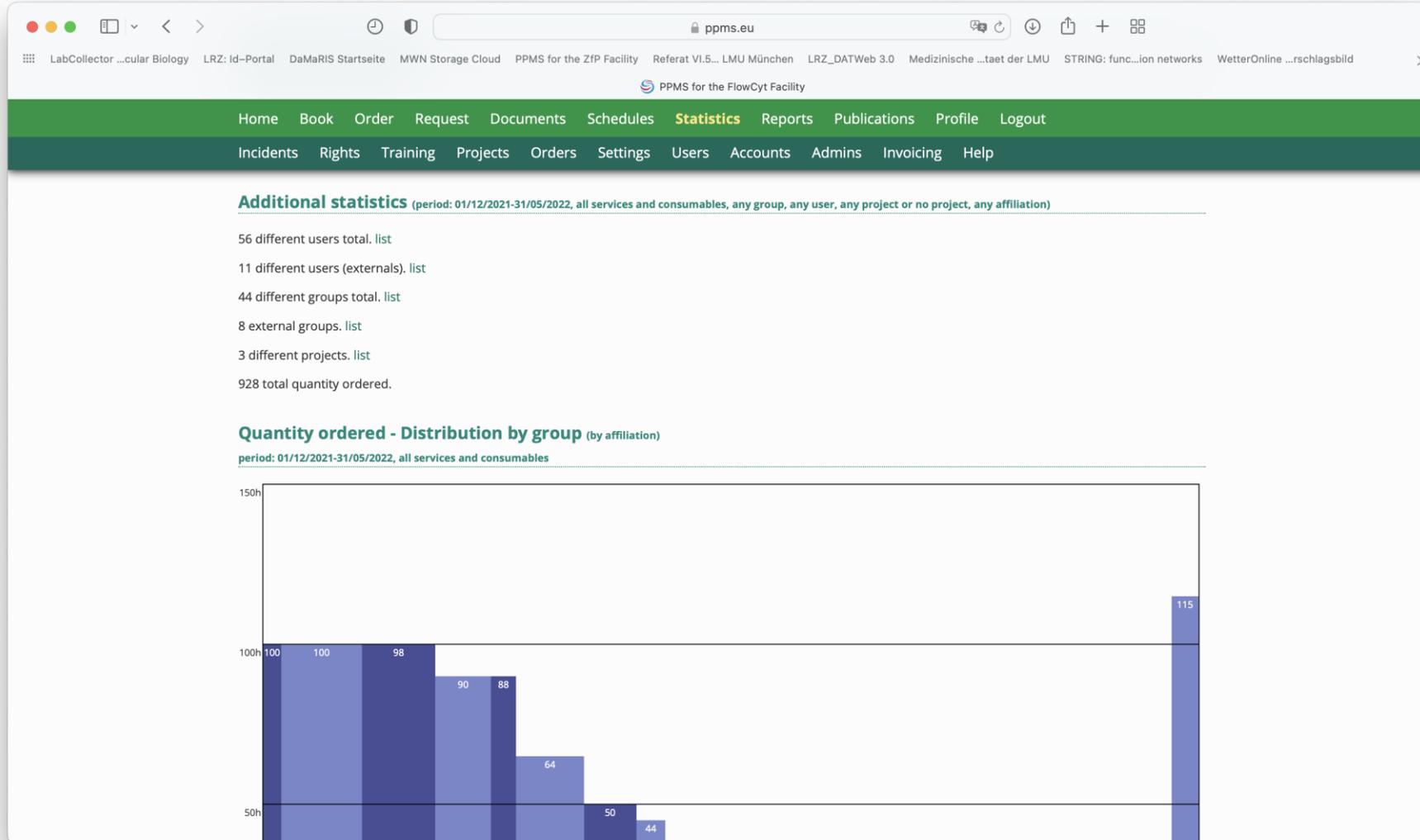
Below these buttons, there is a link: **Make a new request: request/start a new project**.

At the bottom, there are two summary cards:

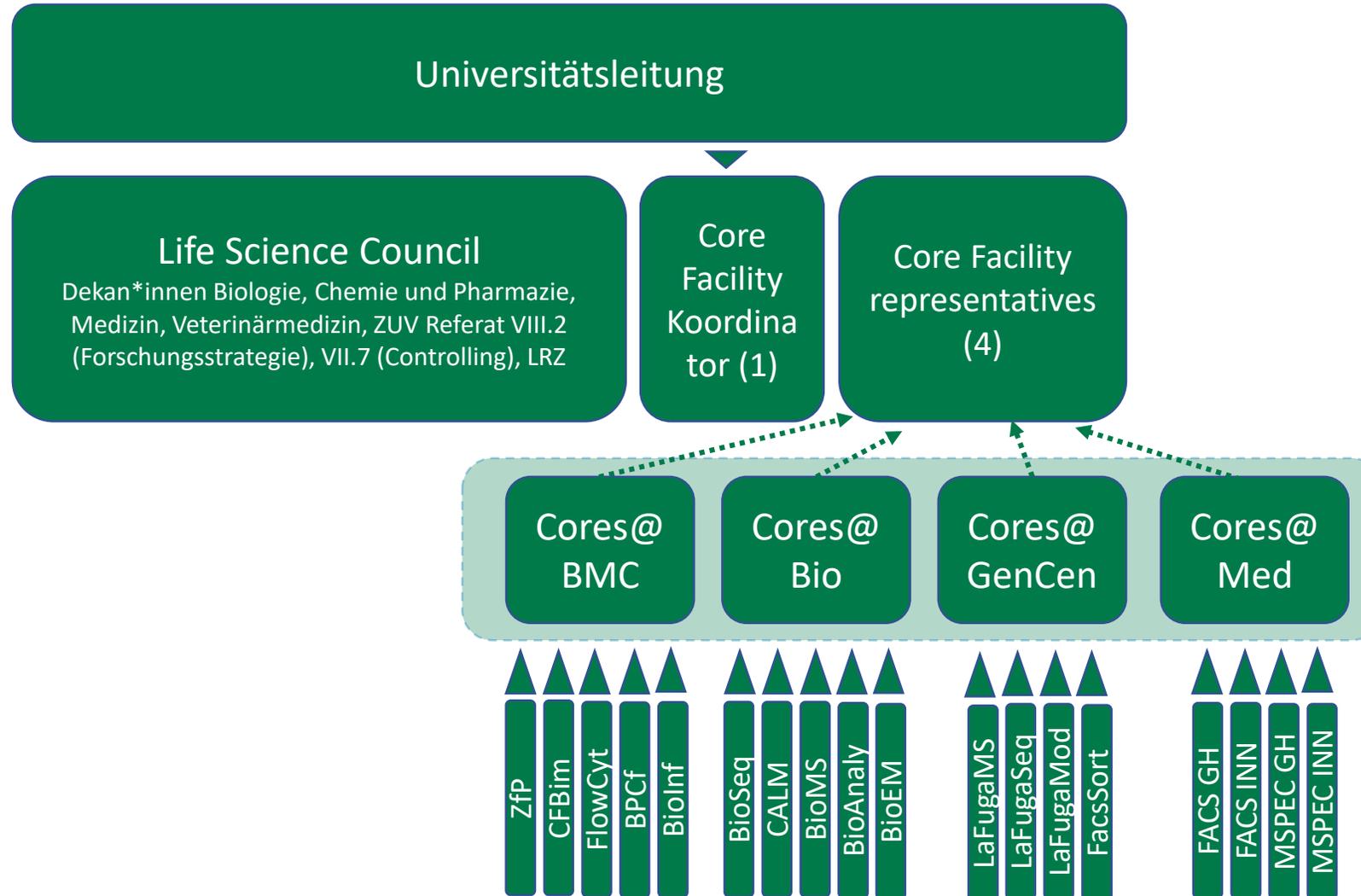
- Report a Publication:** "Please report any publication that used Zfp resources. This is very important for us when we submit grant applications or grant" (with a yellow highlight).
- Orders - New:** "No new orders on this core."

Utility buttons at the bottom include "Restore Default Sections" and "+ Add a New Section to the Home Page".

Evaluation



Cores @ LMU







The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

*Department of Orthopaedics and Trauma Surgery,
Musculoskeletal University Center Munich (MUM),
University Hospital, LMU Munich
MariFor Core Facility*

*EUGLOHRIA WP3 – Workshop 2
11th May 2022, on-line conference*





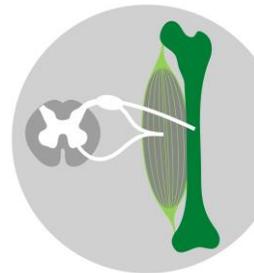
The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Brief presentation of the platform

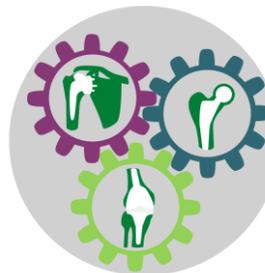
Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?



**Translational
Musculoskeletal Medicine**



**Interaction of the Neuronal
and Musculoskeletal
Systems**

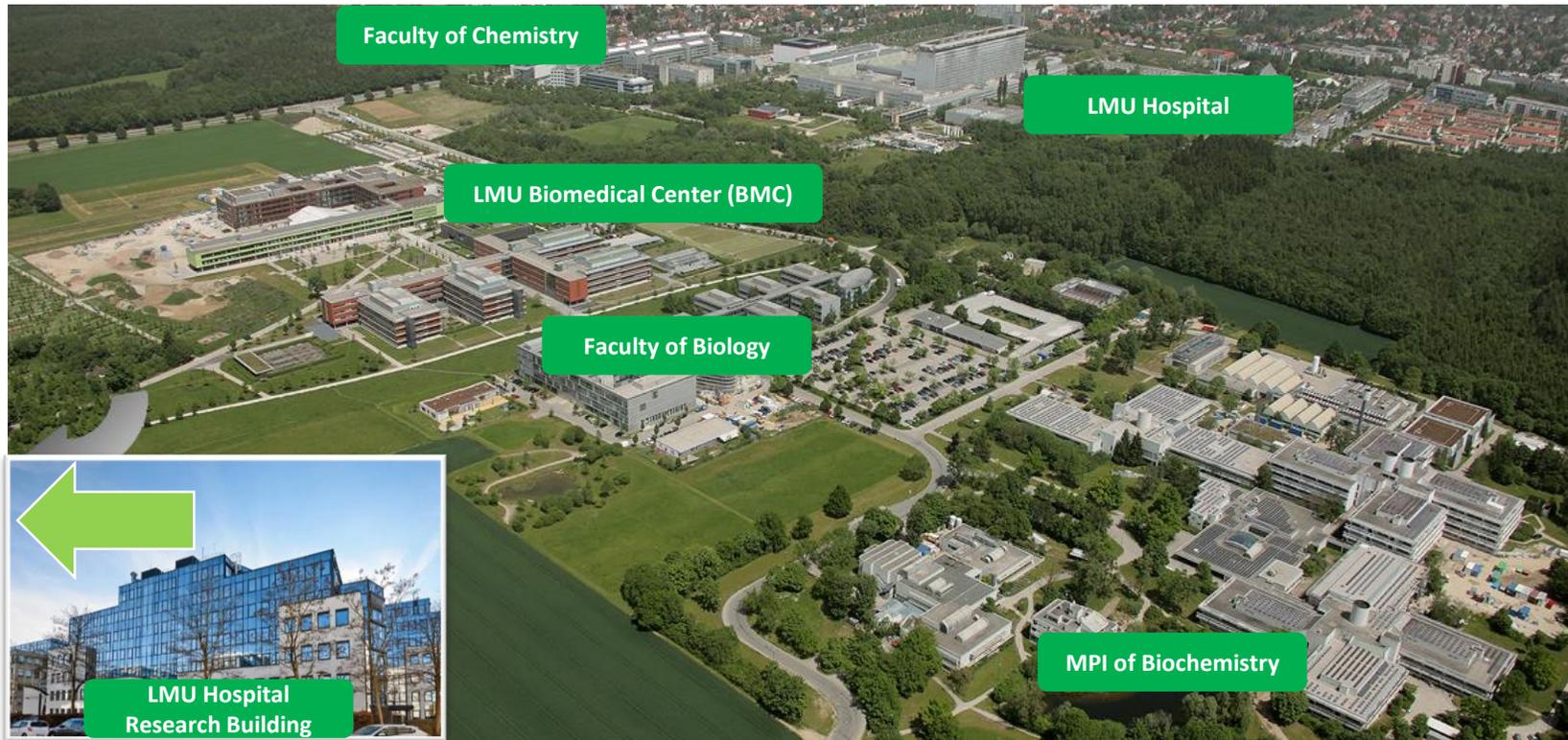


**Applied Biomechanics and
Retrieval Analysis**



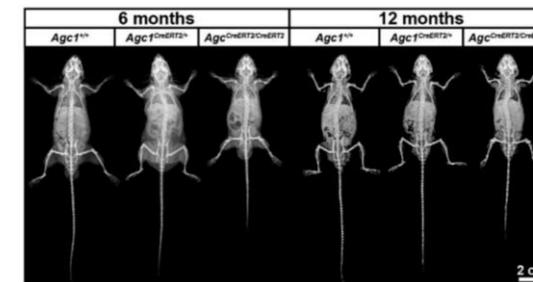
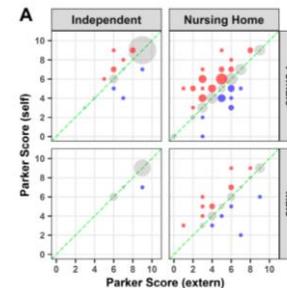
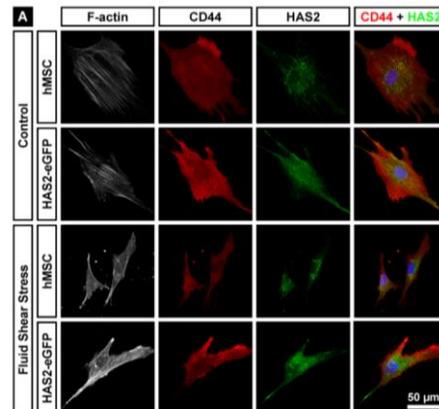
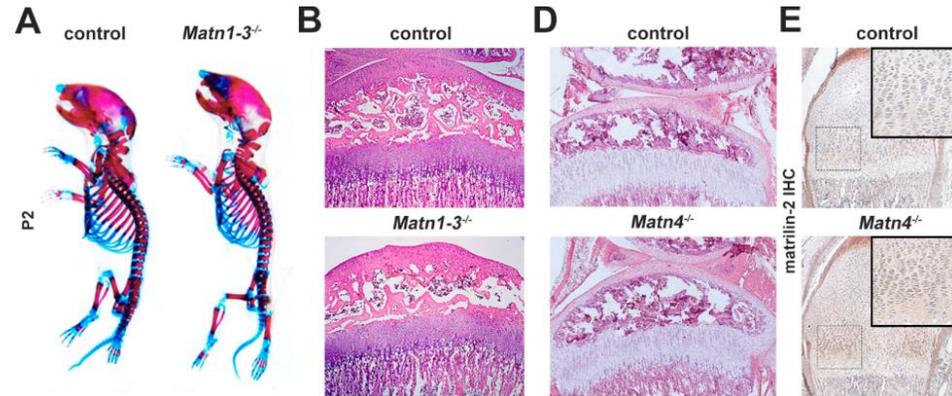
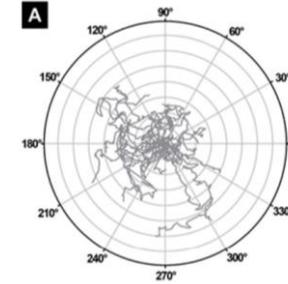
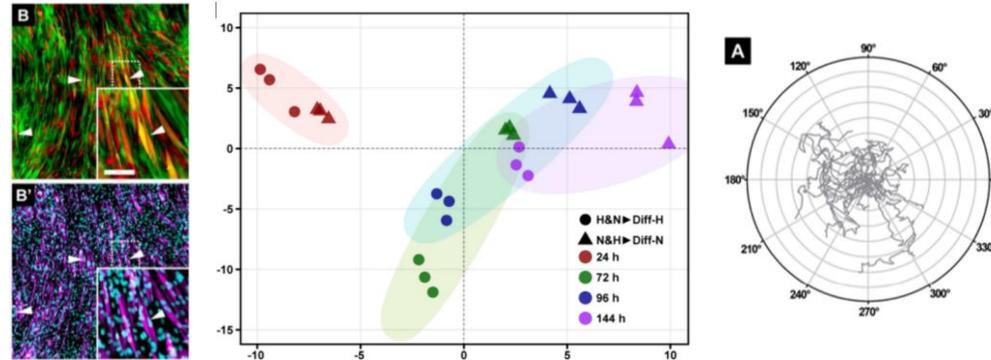
**Cartilage Development,
Diseases and Regeneration**

Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?



Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

- Tissue Engineering
- Developmental Biology
 - Bone
 - Cartilage
 - Muscle
 - Tendon / Ligaments
- Musculoskeletal Diseases
 - Osteoarthritis
 - Osteoporosis
 - Muscle Wasting / Sarkopenia
 - Cancer



Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

Zeiss AxioObserver Z1

- *automated stage*
- *Deconvulation*
- *polarization*

Zeiss AxioVert

- *automated stage*
- *CO2 incubation*

Procon CT-Alpha

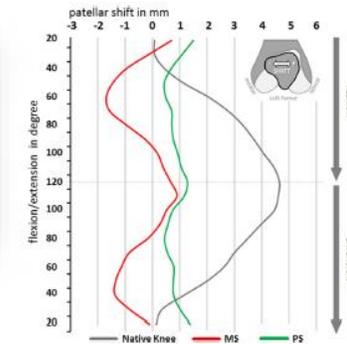
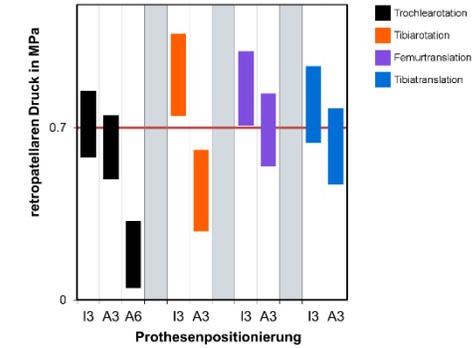
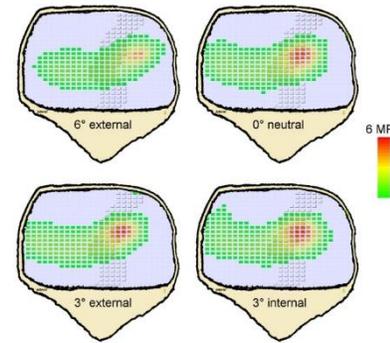
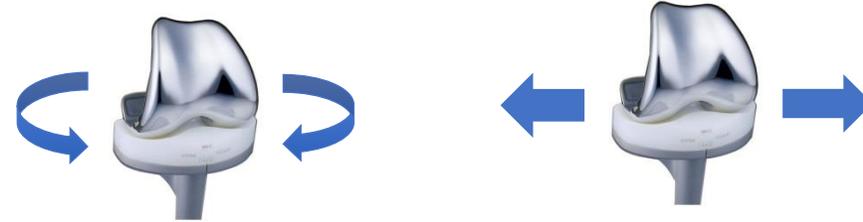
- *nanofocus*
open transmission x-ray source (up to 225 kV)
- *sample size up to 50x60 cm*
- *resolution approx. 800 nm with a 6 mm sample*

Leica SP8 WLL

- *full spectral imaging (AOBS)*
- *white-light laser (up to 8 lines)*
- *2xHyD & 1 PMT detectors*
- *time-lapse (normoxia & hypoxia)*
- *DIC*

Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

- *Applied biomechanics and retrieval analysis*
- TKA knee rig > 16 publications
 - Malposition, different designs, TKA sizing, ligament releases, combination with registry data, finite element model, trochlea design



Arch Orthop Trauma Surg
DOI 10.1007/s00132-014-1050-1
KNEE ARTHROPLASTY

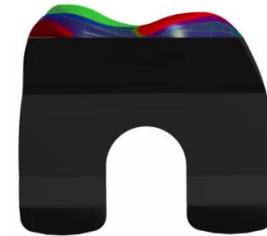
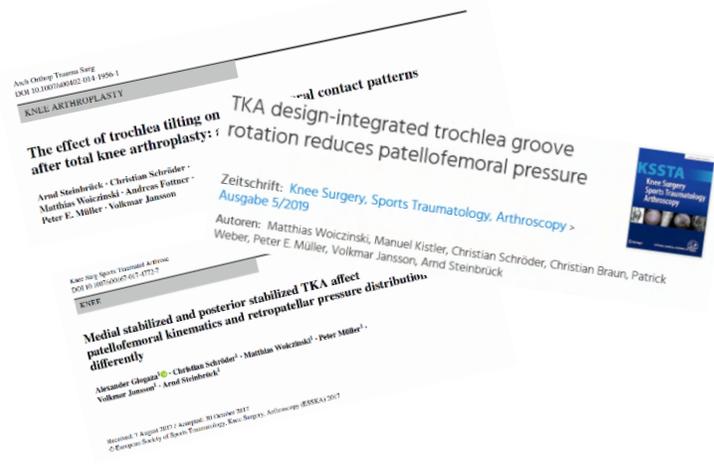
The effect of trochlea tilting on patellofemoral contact patterns after total knee arthroplasty: TKA design-integrated trochlea groove rotation reduces patellofemoral pressure
Arnd Steinbrück · Christian Schröder · Matthias Woiczinski · Andreas Fortner · Peter E. Müller · Volkmar Jansson
Zeitschrift: *Knee Surgery, Sports Traumatology, Arthroscopy*
Ausgabe 5/2019
Autoren: Matthias Woiczinski, Manuel Kistler, Christian Schröder, Christian Braun, Patrick Weber, Peter E. Müller, Volkmar Jansson, Arnd Steinbrück

Knee Surg Sports Traumatol Arthrosc
DOI 10.1007/s00132-015-0772-7
Knee

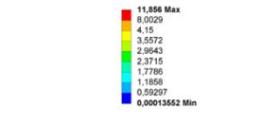
Medial stabilized and posterior stabilized TKA affect patellofemoral kinematics and retropatellar pressure distribution differently
Alexander Gogaza · Christian Schröder · Matthias Woiczinski · Peter Müller · Volkmar Jansson · Arnd Steinbrück
Knee Surg Sports Traumatol Arthrosc
DOI 10.1007/s00132-017-0110-7
© Springer 2017

Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

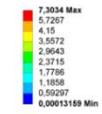
- *Applied biomechanics and retrieval analysis*
- TKA knee rig > 16 publications
 - Malposition, different designs, TKA sizing, ligament releases, combination with registry data, finite element model, trochlea design



0,000 15,000 30,000 (mm)
7,000 22,500

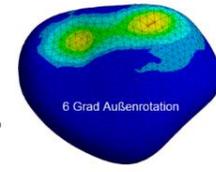
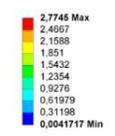


6 Grad Außenrotation der Femurkomponente

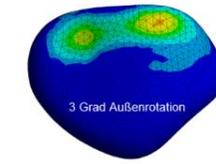
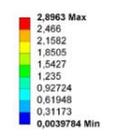


3 Grad Außenrotation der Femurkomponente

00 30,000 (mm)
22,500



6 Grad Außenrotation



3 Grad Außenrotation

15,000 30,000 (mm)
22,500

Brief presentation of the platform – who are you and what are your expertises ? your key-equipments ?

- *Applied biomechanics and retrieval analysis*
- *GOM*
- *3D Printer*
- *Instron*





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are handled the incoming requests for facility usage ?





The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

Officially defined user groups:

A1: Members of the own group

A2: all other members of the w

B1: members of the LMU Medi

B2: members of the whole LMU

C1: Cooperation Partners of LM

C2: Cooperation Partners of LM

D1: all other public research ins

D2: Industry



Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

User Groups	Non-Service Costs [€]	Service Costs [€]	
	A1, A2, B1, B2, C1, C2, D1	A1, A2, B1, B2, C1, C2, D1	D2
Instron	40	75	115
GOM	15	50	65
NanoCT	75	110	185
Time-Lapse Microscope	1	36	37
Laser-Scanning Microscope	25	60	85
Fluorescence Microscope	2	37	39

We also pay the normal usage fees!

Topic 2 : How are determined the costs/fees/remuneration of facility usage ?

The screenshot shows the user interface of the PPMS (Patient Planning and Management System) for the Klinikum - Martinsried Forschungshaus - MaRiFor. The interface features a dark blue header with the application name and a dropdown menu. Below the header is a navigation menu with various options. The main content area displays the 'Home' page, which includes a status bar showing '2 Session(s) Scheduled Today' and '2 User Financial Account Number Modification Requests'. A 'Book a system:' section contains a dropdown menu labeled 'Systems available:' and a 'book' button. At the bottom, there are links for 'Make a new request: request a training request/start a new project'. The current user is identified as 'Saller Maximilian (administrator) see PPMS as a regular user'.

PPMS for the Klinikum - Martinsried Forschungshaus - MaRiFor ▾

[Home](#) [Book](#) [Request](#) [Documents](#) [Schedules](#) [Statistics](#) [Reports](#) [Publications](#) [Profile](#) [Logout](#)

[Incidents](#) [Rights](#) [Training](#) [Projects](#) [Settings](#) [Users](#) [Accounts](#) [Invoicing](#) [Help](#)

Home Current user: Saller Maximilian (administrator) see PPMS as a regular user

2 Session(s) Scheduled Today 2 User Financial Account Number Modification Requests

Book a system:

Systems available: ▾ [book](#)

Make a new request: [request a training](#) [request/start a new project](#)

Final costs will be determined according to actual usage and not booked time.



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

Contribution of Core Staff	Non-Service	Service	
	A1, A2, B1, B2, C1, C2, D1	A1, A2, B1, B2, C1, C2, D1	D2
complete autonomous usage	Acknowledgment of the Core Facility		N/A
scientific input / technical support	Co-Authorship		
major scientific input / own project ideas	relevant Authorship depends on Discussion		

IP rights are individually handled in cooperation agreements.

Get in touch:

Matthias Woiczinski

matthias.woiczinski@med.uni-muenchen.de

Maximilian Saller

maximilian.saller@med.uni-muenchen.de

<https://www.lmu-klinikum.de/mum-lmu>

Visit our website:

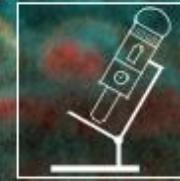
<https://www.euglohria.eu>



LMU

LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

BIOMEDICAL CENTER
CORE FACILITY BIOIMAGING



Steffen Dietzel

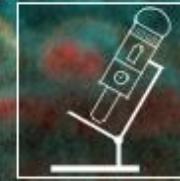
Core Facility Bioimaging at the Biomedical Center

Ludwig-Maximilians-Universität München



The Core Facility Bioimaging at the Biomedical Center of the LMU





Available techniques



STED superresolution

stereo

FRET

bright field

tile stitching

deconvolution

live cell

confocal

multi-color (6-10)

multi-photon

intravital

Thunder

TIRF

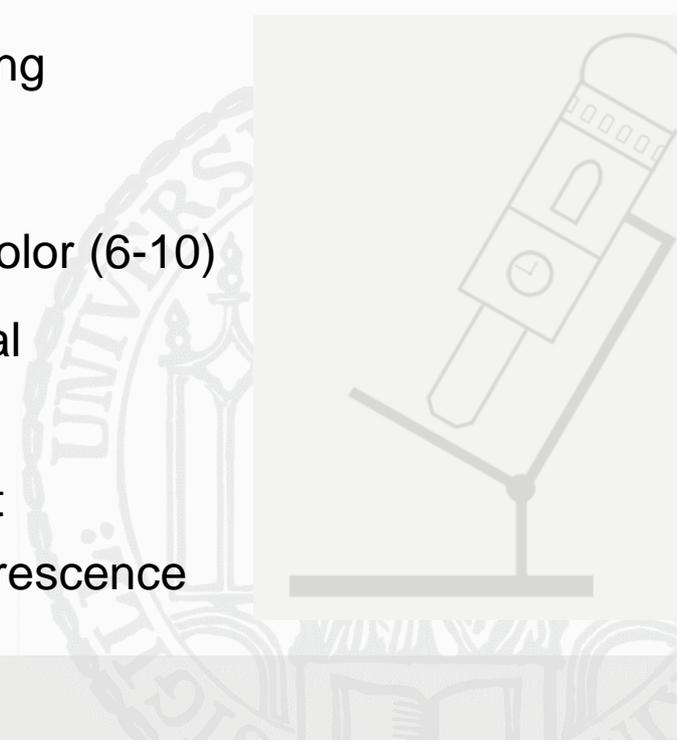
FRAP

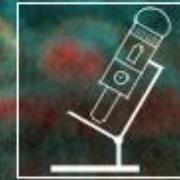
light sheet

cleared samples

wide field fluorescence

fluorescence lifetime (FLIM)

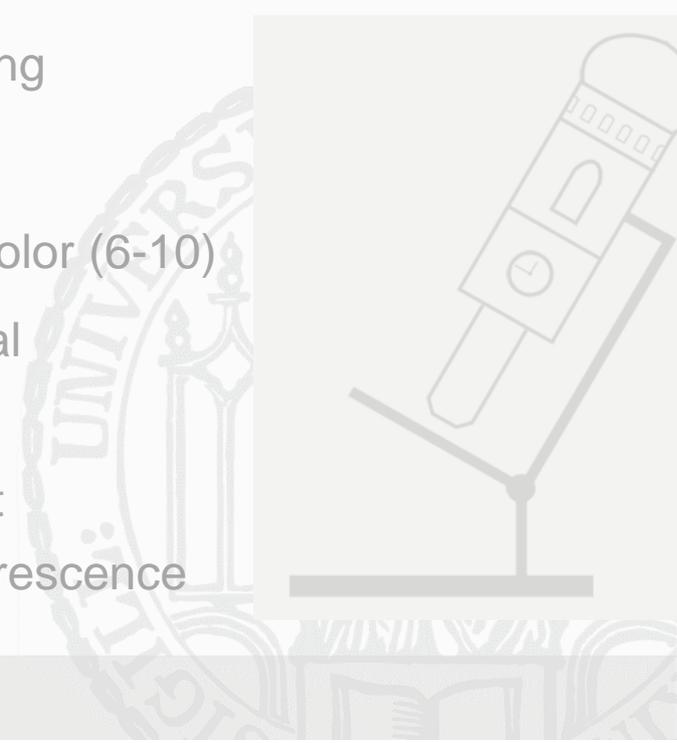




>100 trainings/year
>130 users/year

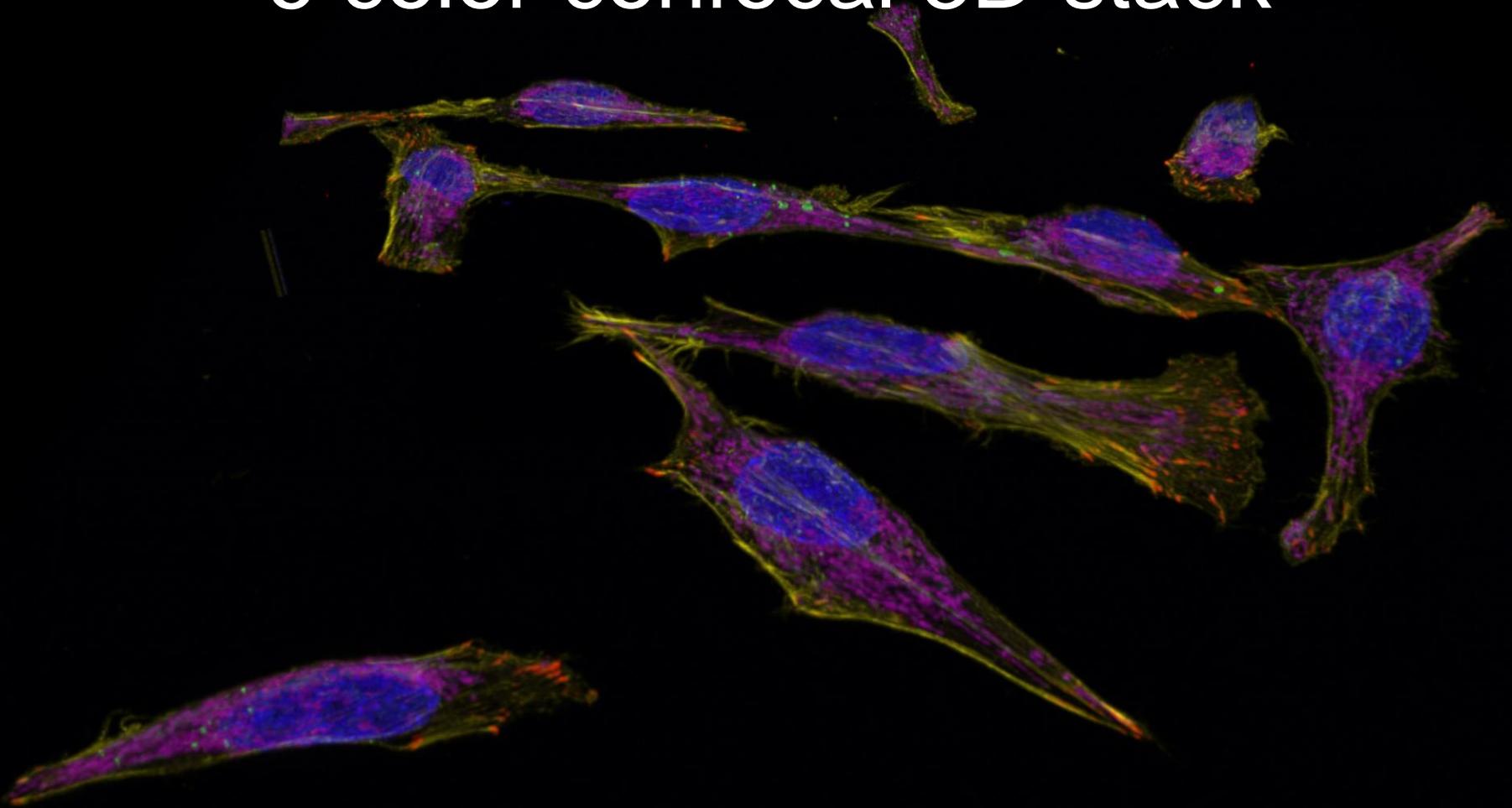


STED superresolution
FRET
stereo
bright field
tile stitching
deconvolution
live cell
The hardware and the team to help with imaging
multi-color (6-10)
confocal
intravital
multi-photon
Thunder
TIRF
FRAP
light sheet
cleared samples
wide field fluorescence
fluorescence lifetime (FLIM)



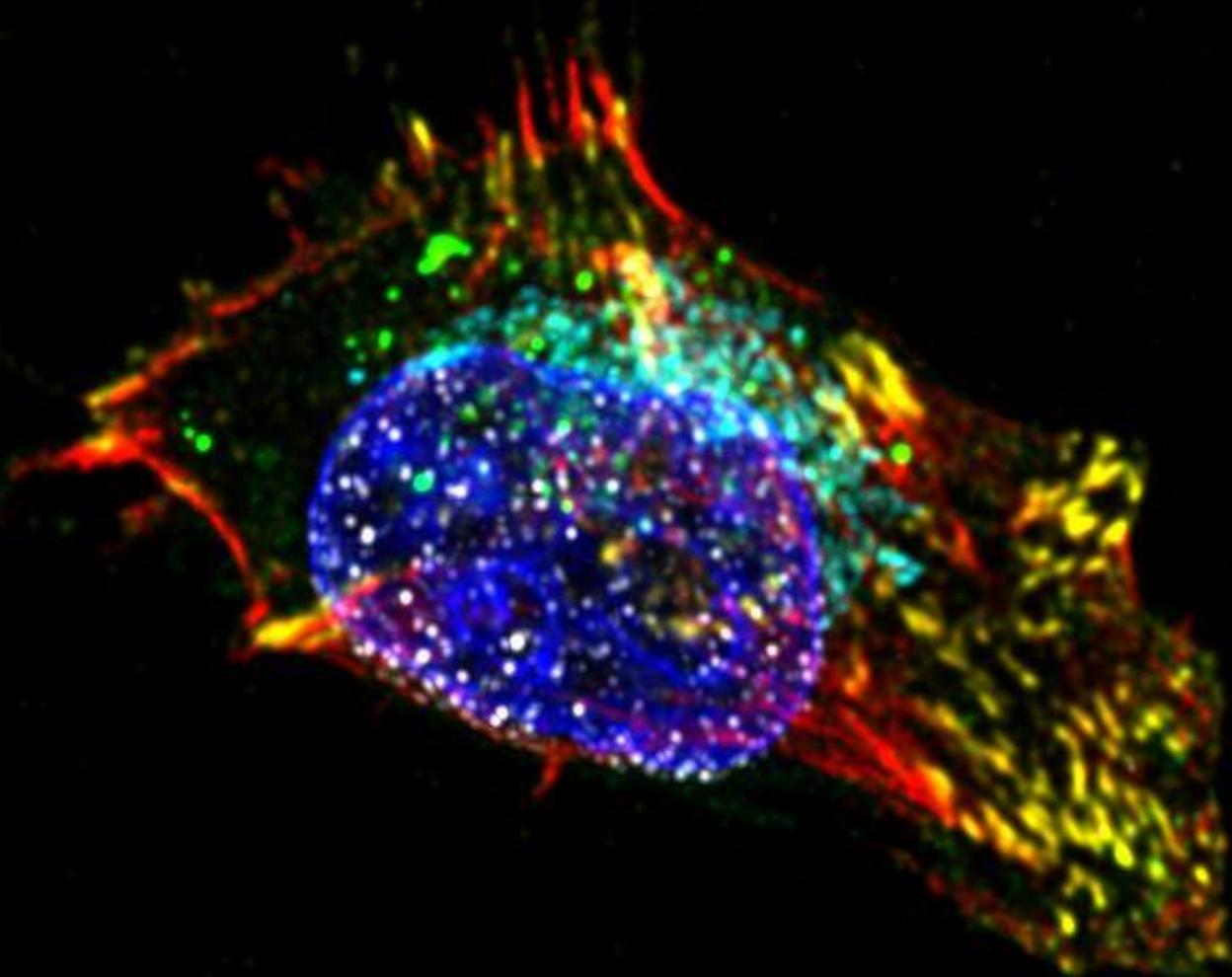


6 color confocal 3D stack

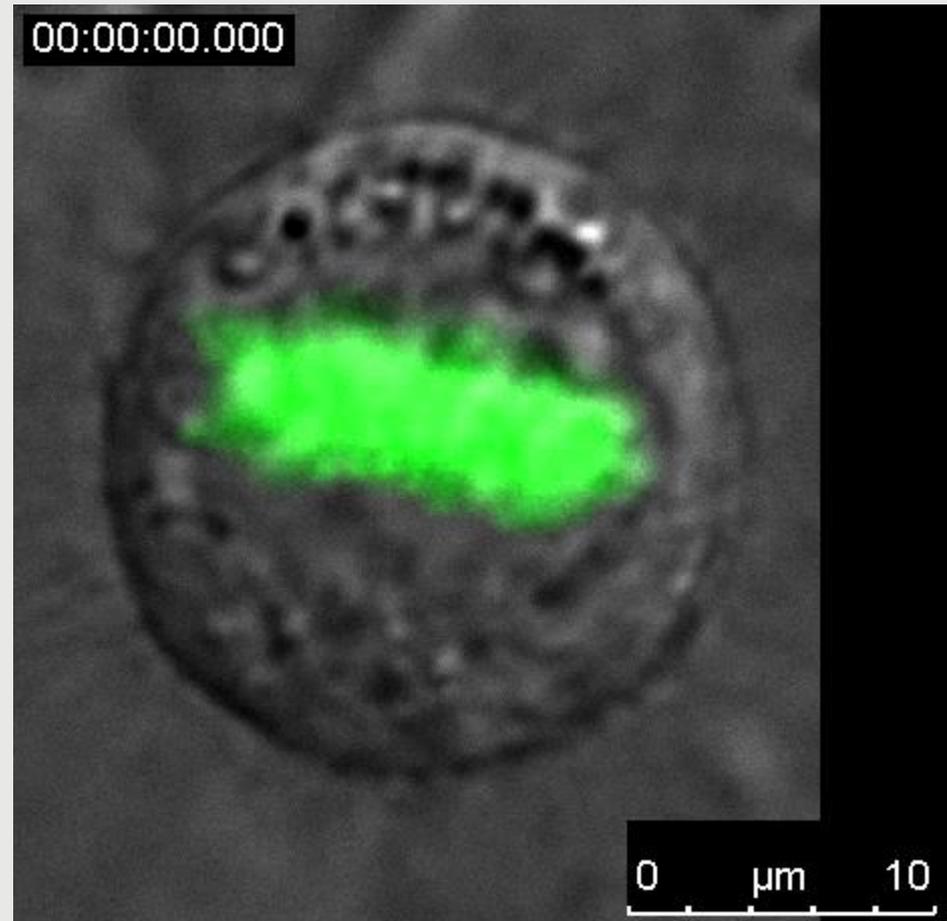
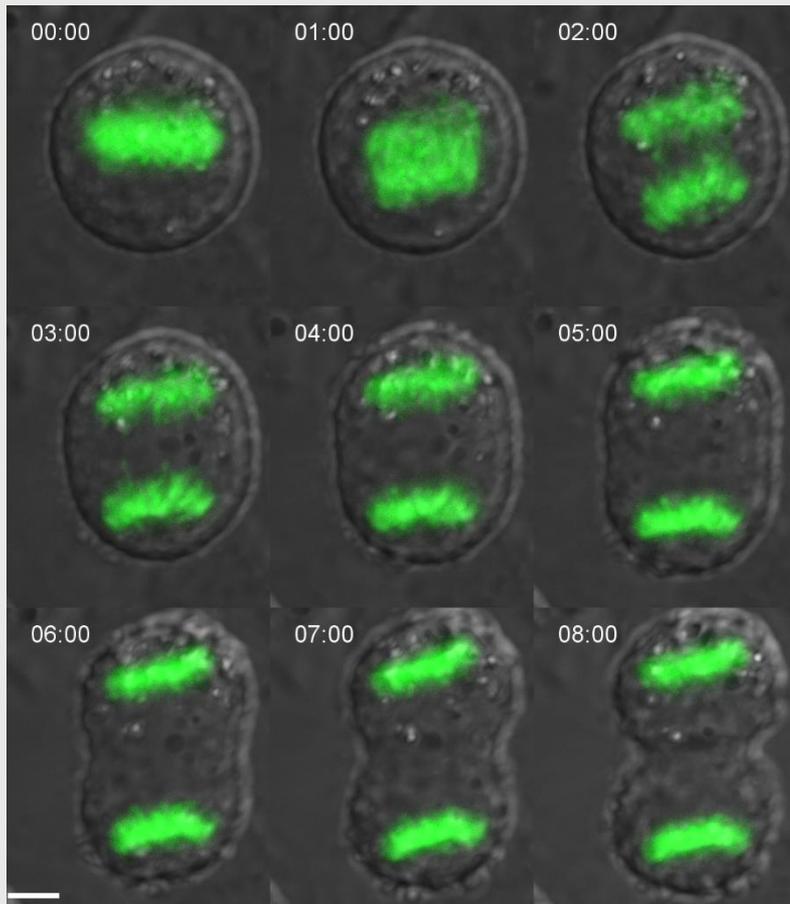


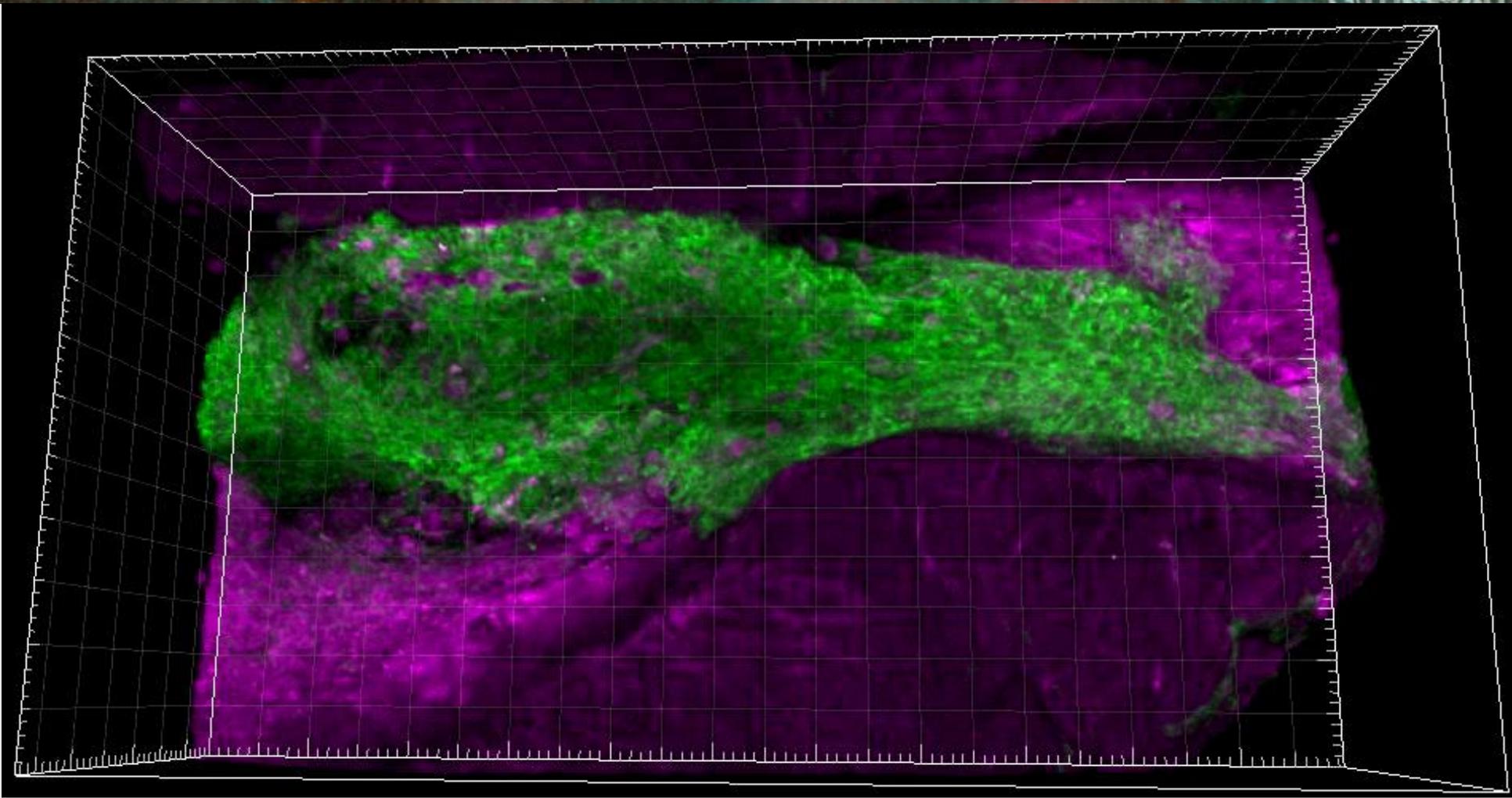


6 color confocal



Live cell imaging (wide field)



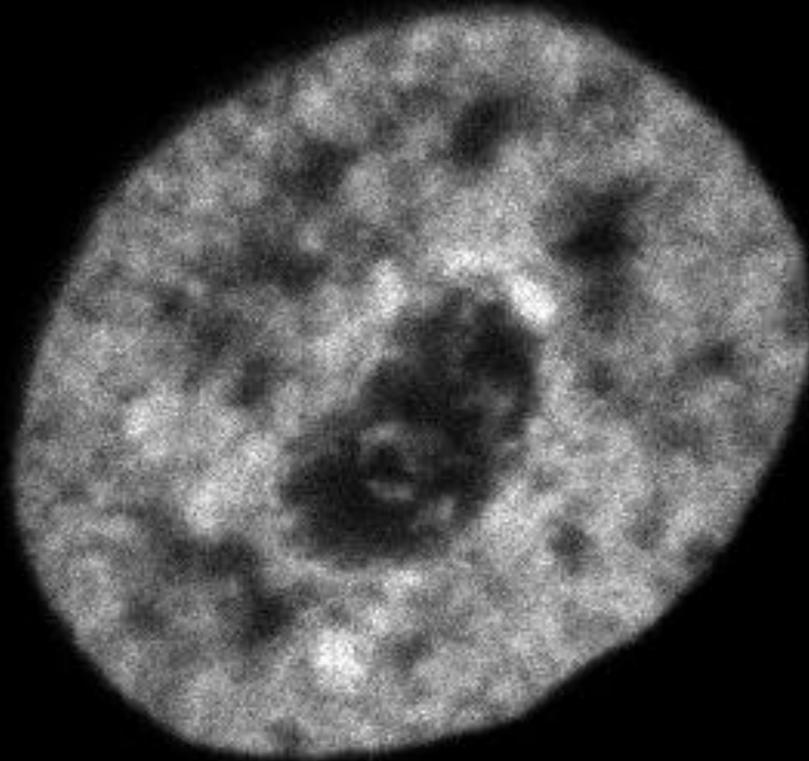


Multi-photon time laps tile scanning

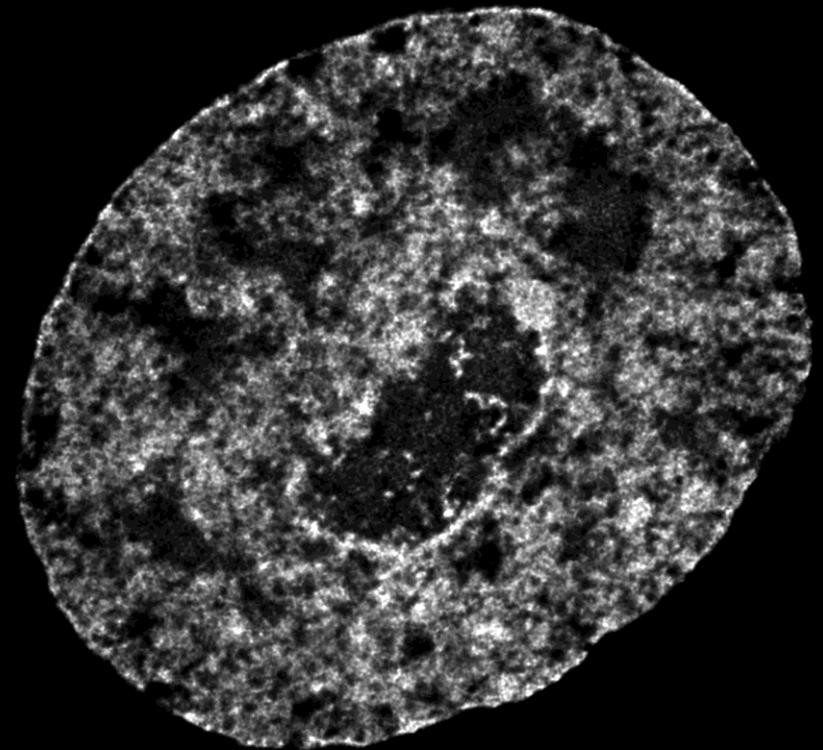
- 2 volumes, each with $0.6 \times 0.6 \times 0.2 \text{ mm}^3$. Merged: $1.1 \times 0.6 \text{ mm}$
- 900 nm and 1050 nm excitation for green and red FP
- 24 hours, every 20 min
- Original data size: 16.3 GB



Superresolution microscopy: Stimulated Emission Depletion (STED)



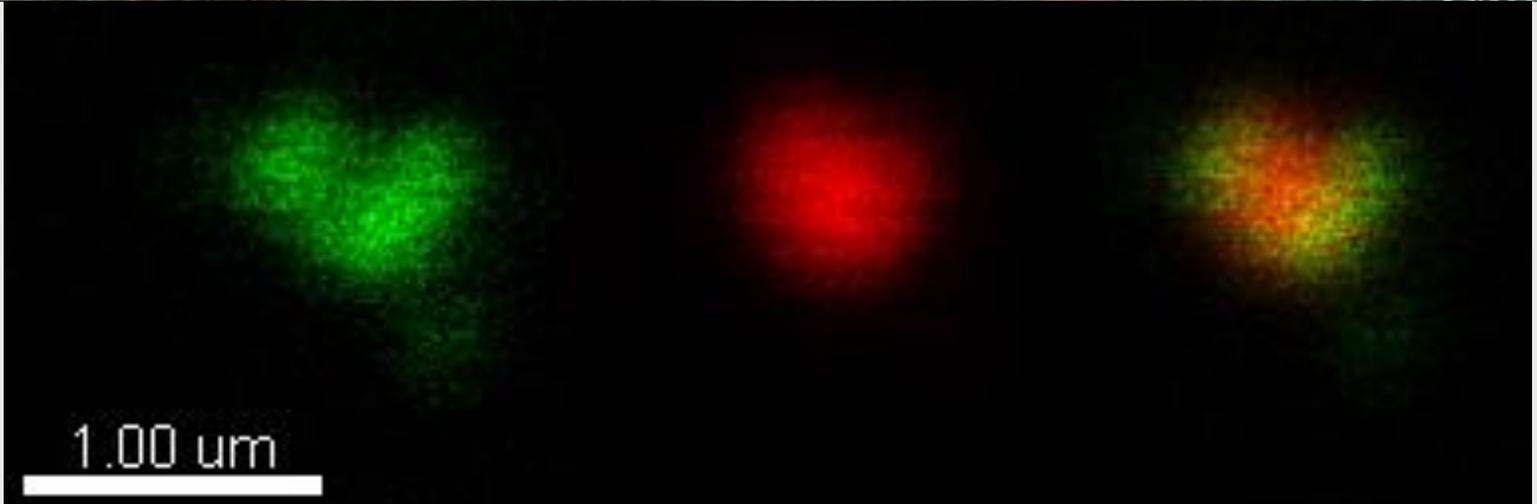
Confocal, no deconvolution



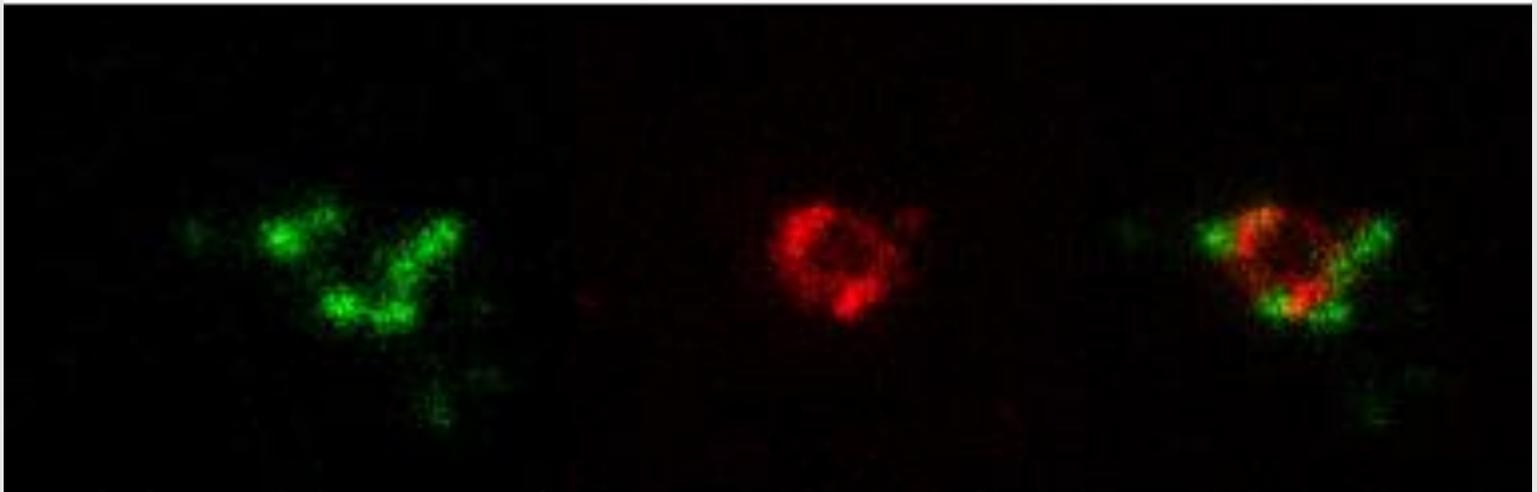
gSTED, deconvolved



Confocal



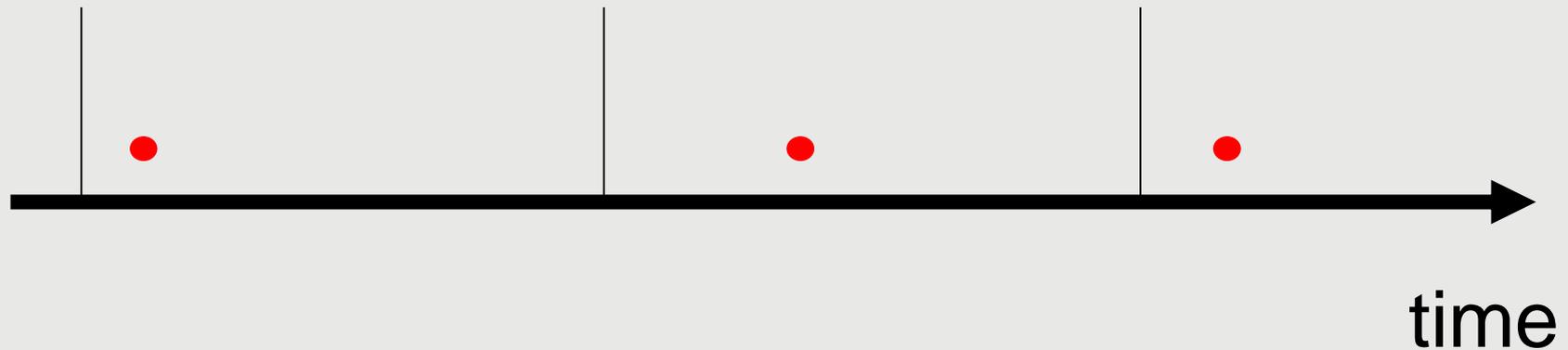
STED



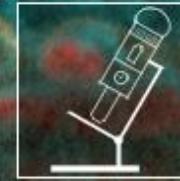
Sample by Germán Camargo Ortega, AG Götz. Centrosomes.
Green: Akna Aberrior 580. Red: ODF3 Aberrior 635P
Single optical sections. No deconvolution.



Fluorescence Lifetime (TCSPC)

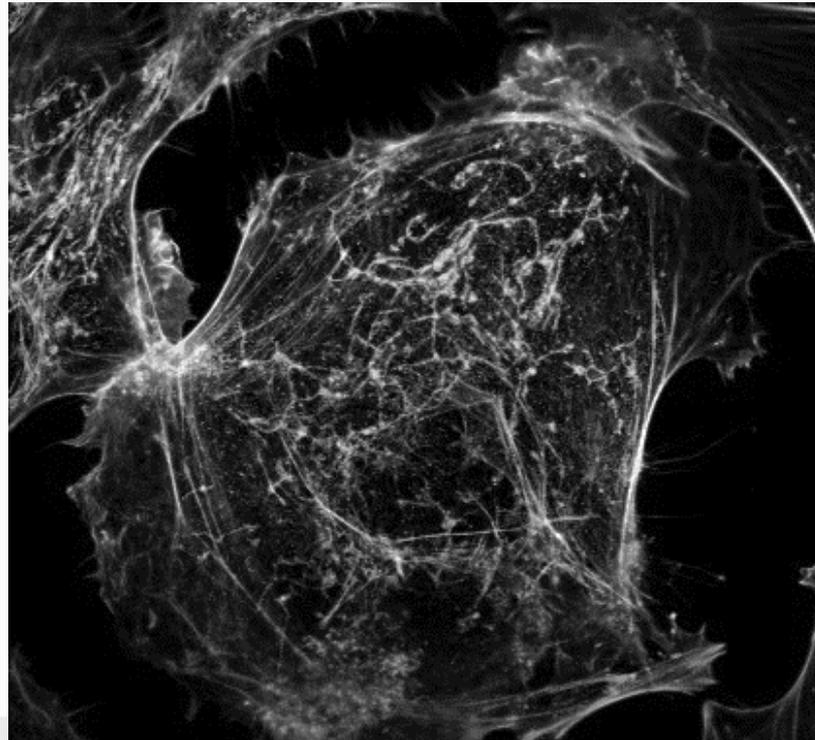
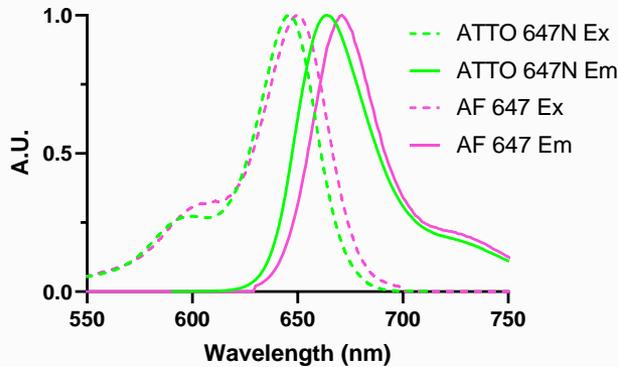


12.5 ns
@ 80 MHz



Fluorescence lifetime imaging

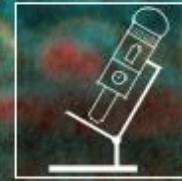
- Color separation within a channel
(to increase # of fluors or reduce autofluorescence)



HUVECs

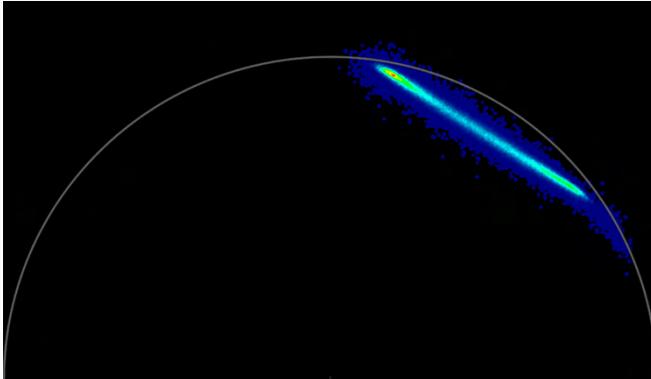
TOMM 20 Alexa Fluor 647: 1,6 ns

Phalloidin-ATTO647N: 3,3 ns



Fluorescence lifetime imaging

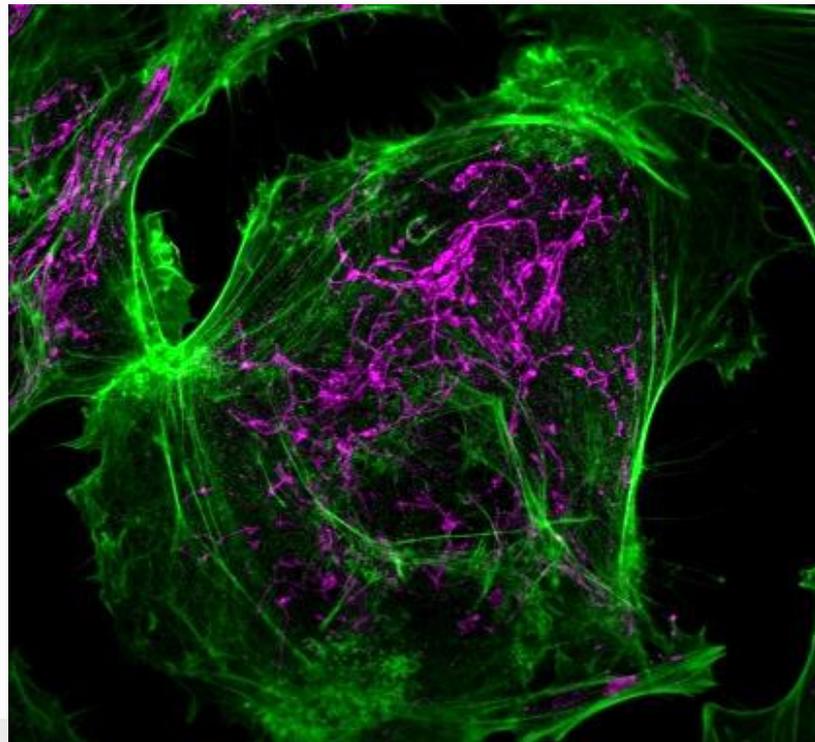
- Color separation within a channel
(to increase # of fluors or reduce autofluorescence)

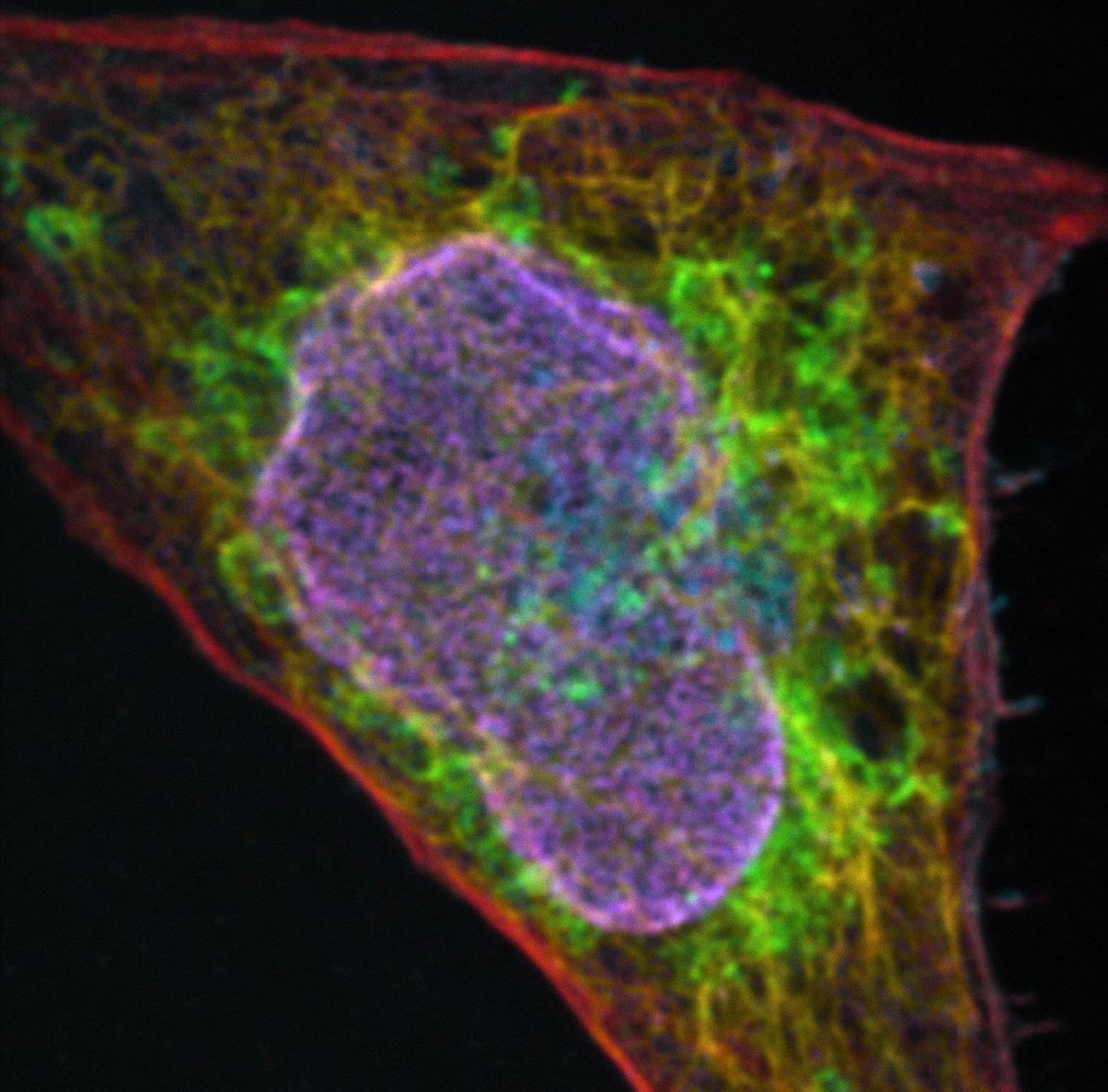


HUVECs

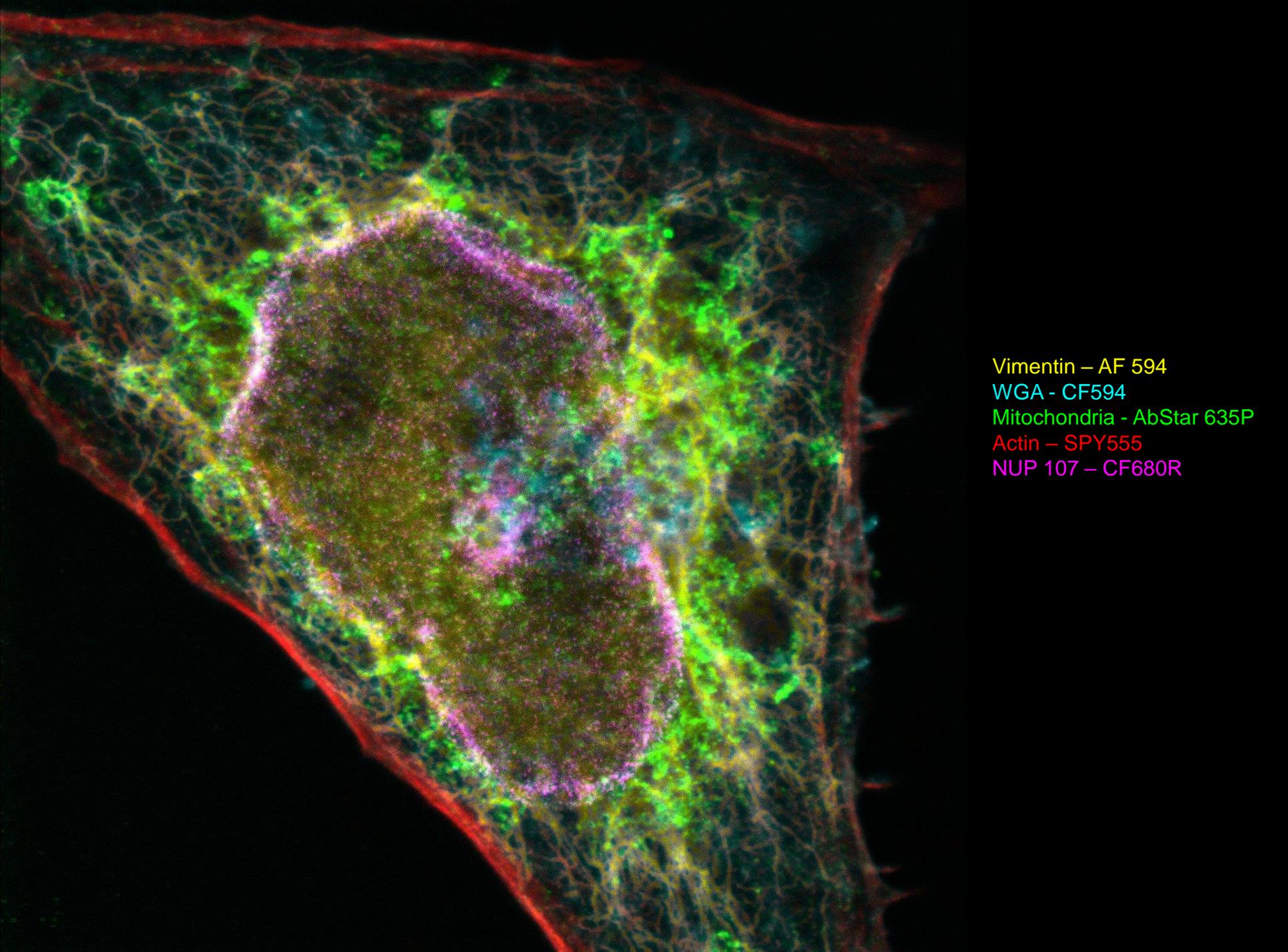
TOMM 20 Alexa Fluor 647: 1,6 ns

Phalloidin-ATTO647N: 3,3 ns

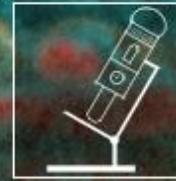




Vimentin – AF 594
WGA-CF594
Mitochondria AbStar 635P
Actin – SPY555
NUP 107 – CF680R



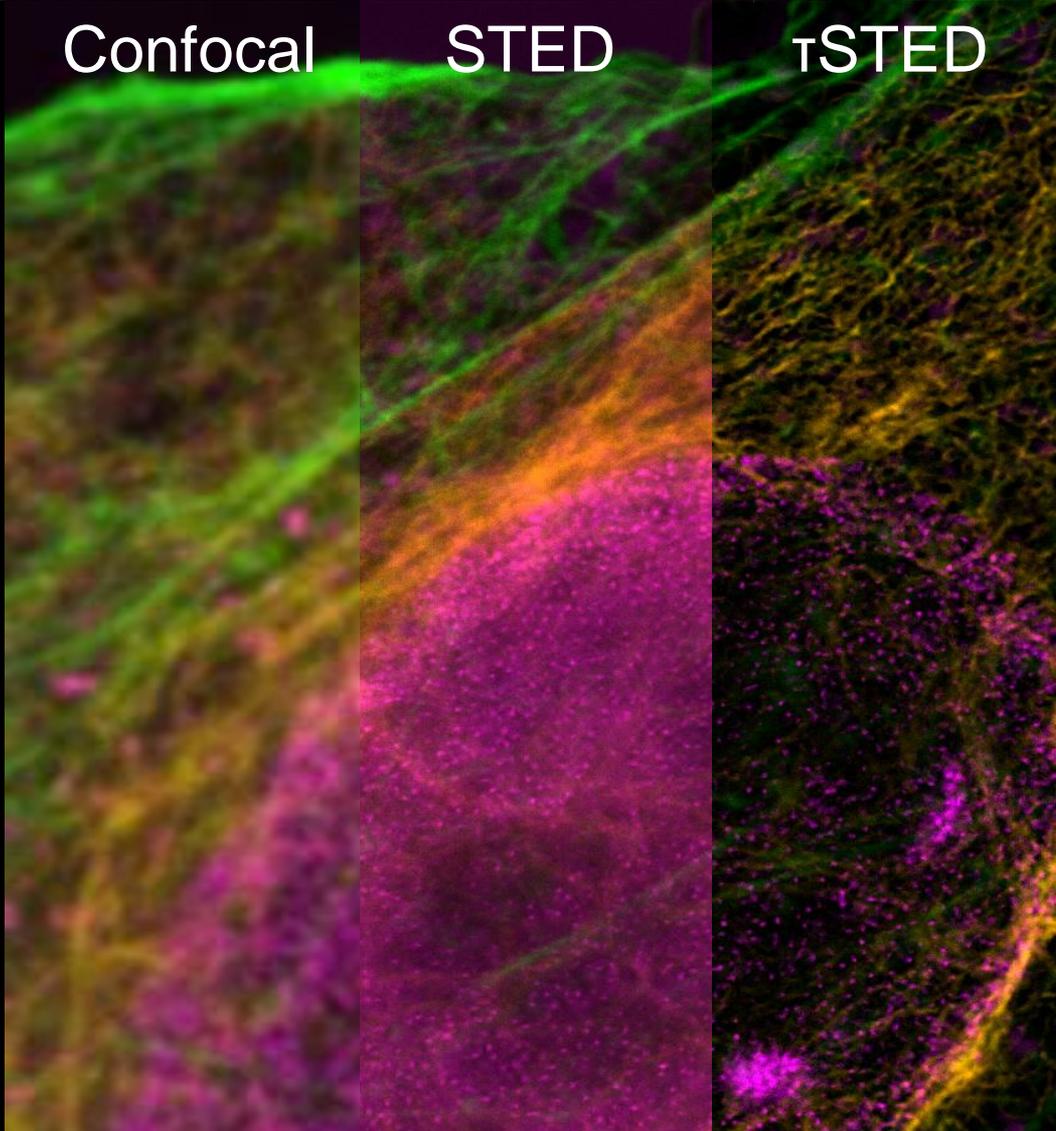
Vimentin – AF 594
WGA - CF594
Mitochondria - AbStar 635P
Actin – SPY555
NUP 107 – CF680R



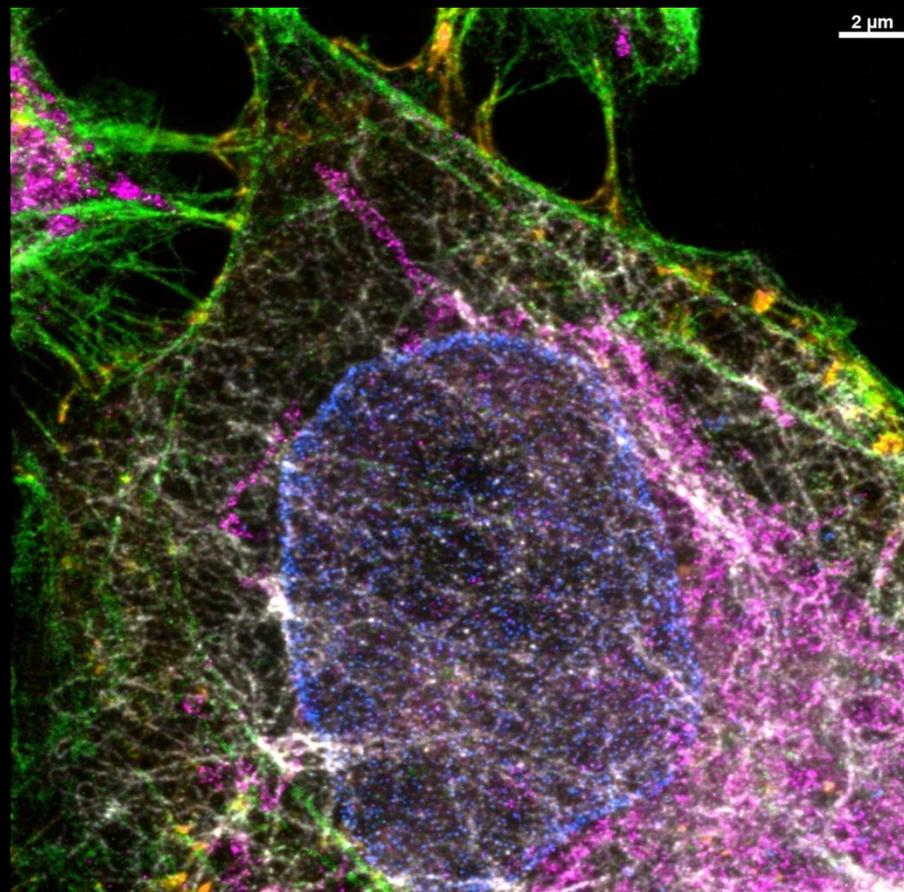
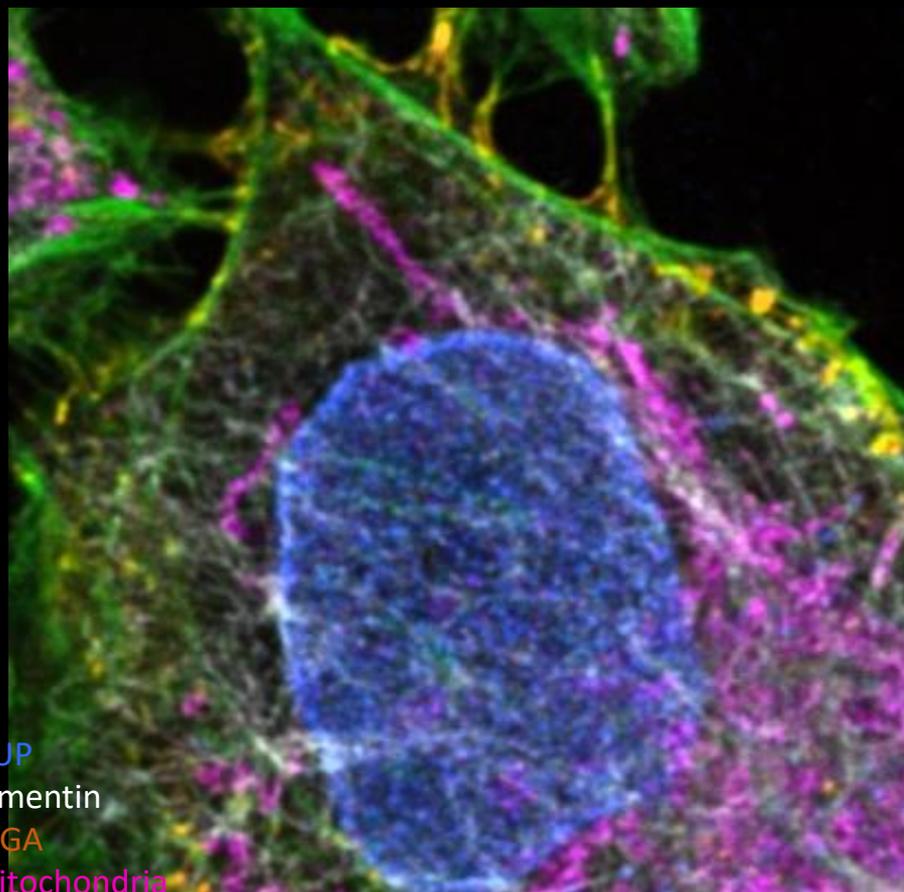
Confocal

STED

τSTED



NUP 107 – CF680R
Vimentin – AF 594
Actin – SPY555



NUP
Vimentin
WGA
Mitochondria
Actin



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 1 : Handling incoming requests for facility usage

Topic 1 : How are incoming requests for facility usage handled ?

- If you know what you need and which system you would like to use: Our website www.bioimaging.bmc.med.uni-muenchen.de links to the booking system where you can place a request for training.
- When in doubt: contact us to discuss your needs. We are happy to advise which microscope is best for your experiment.



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 2 : Determination of costs / fees / remuneration for facility usage

Topic 2 : How are costs/fees/remuneration of facility usage determined ?

- Usage fees are listed on the web site. See www.bioimaging.bmc.med.uni-muenchen.de/instrumentation/fees/
- Different fees apply to different user groups. **Example (€/hour):**

Confocal room

Name	Characterization	BMC 2020	BMC 2021*	LMU/ Klinikum	Academic	Non- Academic
<u>Kellner</u>	inverted confocal, STED, light sheet	14	16	25	35	245
<u>Malpighi</u>	upright confocal	10	12	15	25	130

- Rebates for overnight experiments. For training on laser scanning instruments €200 are charged and converted into a prepaid account to discourage training tourists.



The European University Alliance for Global Health –
Transformation through Joint Research and Innovation Action

Topic 3 : About IP rights and publication of scientific results

Topic 3 : How are IP rights and scientific results handled in connection with shared facility usage ?

- Any publication containing images or building on images made at the Core Facility must acknowledge the Core Facility (to justify our funding).
- If we only give an introduction and do not provide intellectual input, we do not seek coauthorship.
- Support beyond a mere introduction like establishing a new model, complicated experiments, etc., may warrant coauthorship.
- Your image data are yours, we have no claim on them.

**Core Facility Bioimaging
@ BMC**



Sonja Rottmeier

Andreas Thomae

Mariano Gonzalez Pisfil

Brigitte Bergner

Steffen Dietzel

www.bioimaging.bmc.med.uni-muenchen.de

Annex 3

Presentation from Study Tour

'EMBL Core Facilities & Services: Linking science with service'

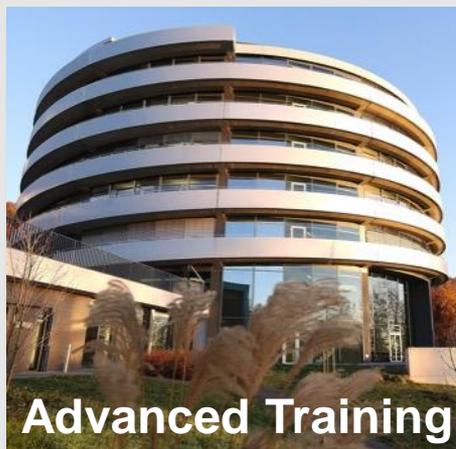
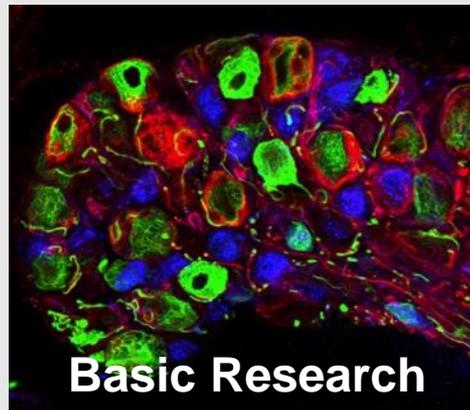
EMBL Core Facilities & Services: Linking science with service

Vladimír Beneš

26 April 2022



EMBL's Five Missions



Missions of Core Facilities

- Provide high quality services to EMBL scientists, visitors and scientists from member states, capacity permitting
- Offer access to and expertise in cutting-edge technology
- Integrate services with EMBL's scientific objectives
- Contribute to internal and external training courses and workshops
- Contribute to technology developments in collaboration with industrial partners

Core Facilities @ EMBL

- Current molecular biology is technology savvy
- Funding of heavy-duty instrumentation is mostly not easy for research groups of the EMBL scale
- Economy of centralization enables acquisition of state-of-the-art equipment and manageable operational cost
- Dedicated, highly qualified staff *support* scientists in their projects *facilitated* by frequent & open interactions with users, whose time is 'limited'
- “bottom-up” approach to implementation of new technology to core facilities, inter-CFs projects, synergies
- Core facilities are also regularly reviewed!
- ‘Reasonable’ prices (strictly non-profit)
- Frequently, CFs are the first contact point for the Industry

Core Facilities @ EMBL Heidelberg

- Advanced light microscopy CF (Rainer Pepperkok)
- Electron microscopy CF (Yannick Schwab)
- Protein expression & purification CF (Kim Remans)
- Proteomics CF (Mikhail Savitski)
- Flow cytometry CF (Diana Ordonez)
- Chemical biology CF (Ulrike & David)
- Genomics CF (Vladimir)
- Metabolomics CF (Theodore Alexandrov)
- *IT Services (Rupert Lueck)*

<https://www.embl.org/services-facilities/>

Different Core facilities

Different service models

Access-to-technology CFs

Advanced Light Microscopy
Electron Microscopy
Flow Cytometry

Service provided

Teaching of users in *instrument operation*
Consultation
Equipment maintenance and development

Users carry out their experiments

Service-based CFs

GeneCore
Proteomics
Chemical biology
Protein expression and purification
Metabolomics

Service provided

Teaching of users in *methodology*
Consultation
Equipment maintenance and development

Facility staff carries out experiments

Access Model

Access-to-technology CFs

Advanced Light Microscopy
Electron Microscopy
Flow Cytometry

Access

Competitive booking by users (internal/external)
Daily usage restrictions depending on capacity
Special projects are possible

Service-based CF

Gene Core
Proteomics
Protein expression and purification

Chemical biology

Access

First come first serviced
Special projects are possible

CBCF committee sets priorities

Core Facilities charging model

- Every CF is asking user fees according to the same model
- Fees aim to cover reagents, consumables and maintenance costs
- Equipment, staff and infrastructure are not included

Advanced light microscopy CF pushing limits of visible light



Rainer Pepperkok
Rm 506
pepperko@embl.de
almf@embl.de

- The first CF, inspiration for the rest; it also set the paradigm for interaction with industry, currently 30 microscope systems
- **Teaching** and **support** of users throughout the whole process of image data acquisition, analysis and documentation
- Development of streamlined application protocols, e.g. by automation, design, set-up, test and offering new equipment in collaboration with industrial partners
- siRNA HT screening libraries

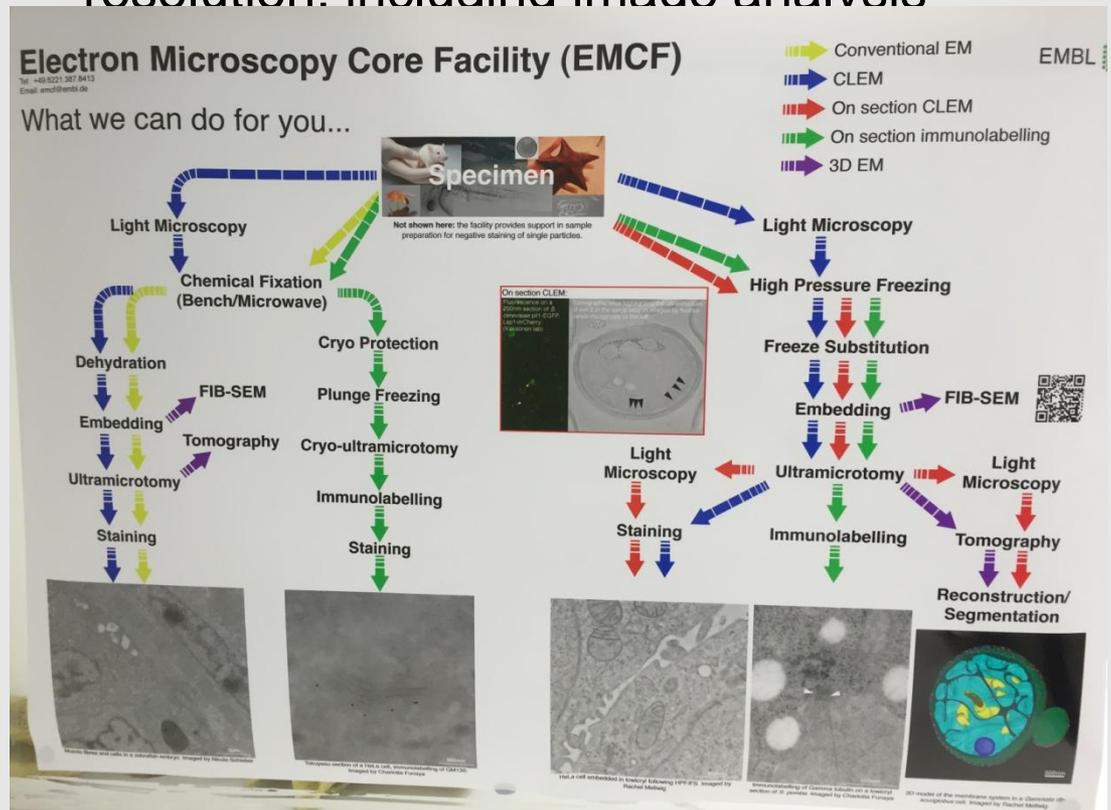
Electron microscopy CF



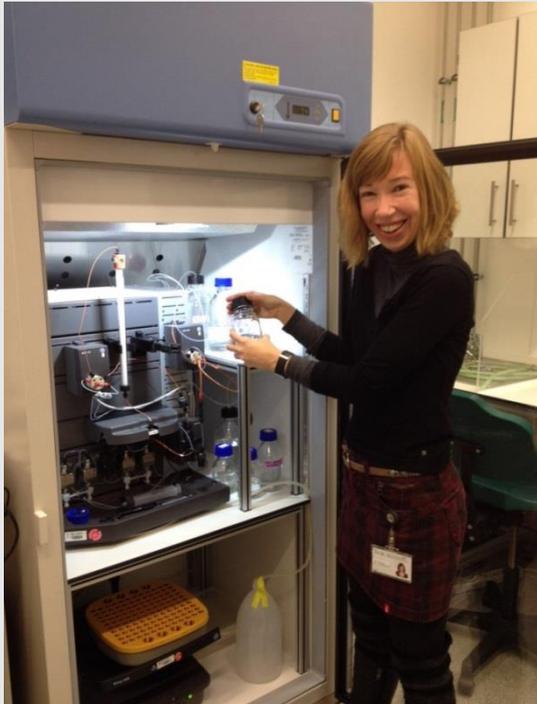
Yannick Schwab
Rm 310A

yannick.schwab@embl.de
emcf@embl.de

- Teaching sample preparation for EM and operation of EM instruments to study cell structure and organisation at the EM resolution. including image analysis



Protein expression and purification CF



- Production and purification of proteins from *E. coli*, insect and mammalian cells
- Collection of expression vectors and bacterial strains
- Production of enzymes for daily lab work
- Biophysical analyses (AUCFG, calorimetry)

Kim Remans

Rm 303

kim.remans@embl.de

pepcore@embl.de

Proteomics CF



- Infrastructure for identification, characterization and multiplexed quantification of proteins
- Identification and quantification of post-translational modifications
- Global and targeted proteome profiling
- Steps towards reduction of required input amount thanks to implementation of beads
- Data analysis

Mikhail Savitski

Rm V213A

mikhail.savitski@embl.de

pcf@embl.de

Chemical biology CF

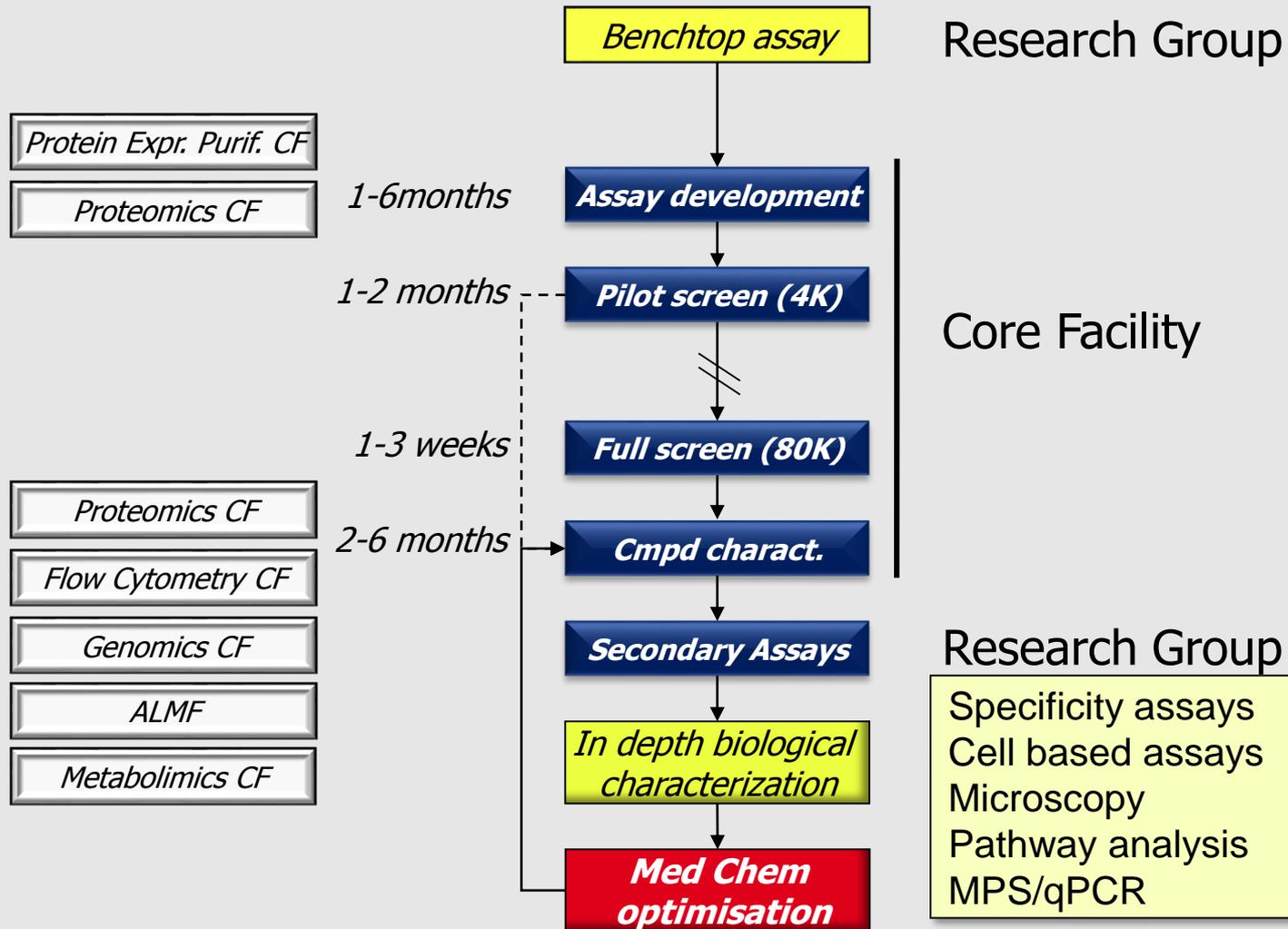


- Interfacing biology with chemistry
- Providing academic research groups access to screen small-molecule compound collections against their targets
- Identification of novel low molecular weight compounds to use as “biotools” to probe biological function
- Characterization of detected interactions
- Generating added value IP on in-house targets
- Medicinal chemistry, the compound synthesis

Ulrike Uhrig
Rm 1D4.54C

ulrike.uhrig@embl.de

Typical Project Flow



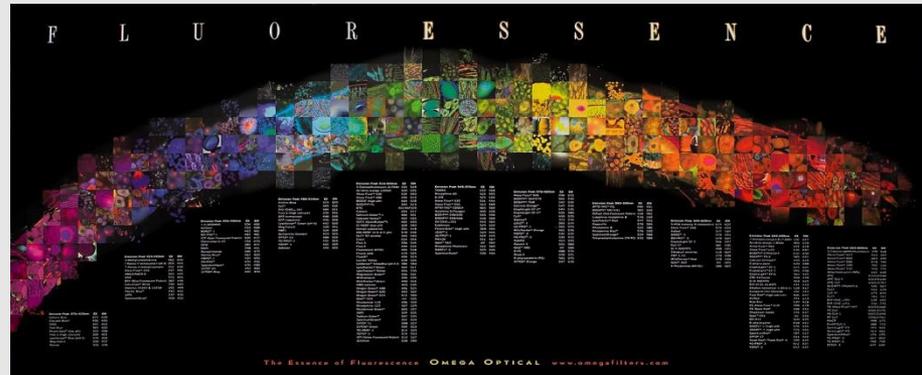
Flow cytometry CF



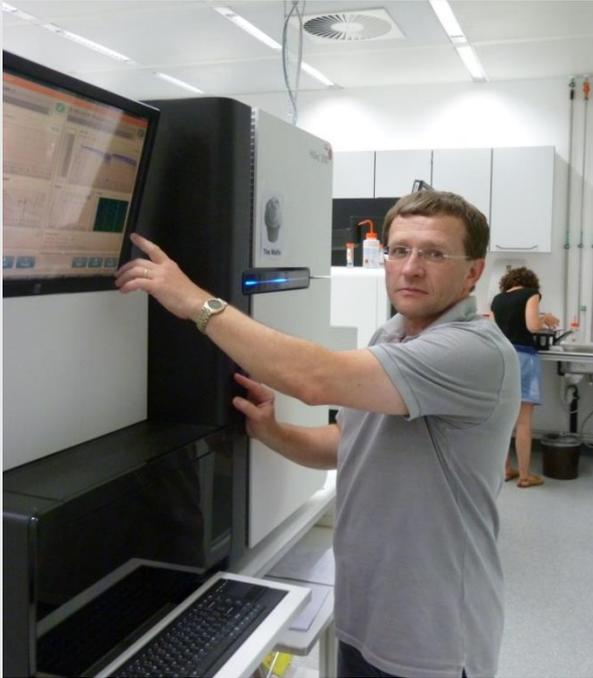
- Access to high-end FACS analysis
- Sorting heterogeneous populations according to many different criteria (cells, chromosomes) into homogeneous populations for experiments
- Analysis of single cell populations based on fluorescent probes and light intensities
- Imaging sorter

Diana Ordonez
Rm V104

diana.ordonez@embl.de
fccf-team@embl.de



Genomics CF



- Assisting scientists with unlocking genomes of their interest
- Complete sample processing for:
 - massively parallel sequencing
 - single-cell genomic analyses (NGS, qPCR)
- Full qPCR support
- Liquid handling automation of protocols
- Assistance with data analysis
- Collection of fruitfly, nematode, mouse cDNAs

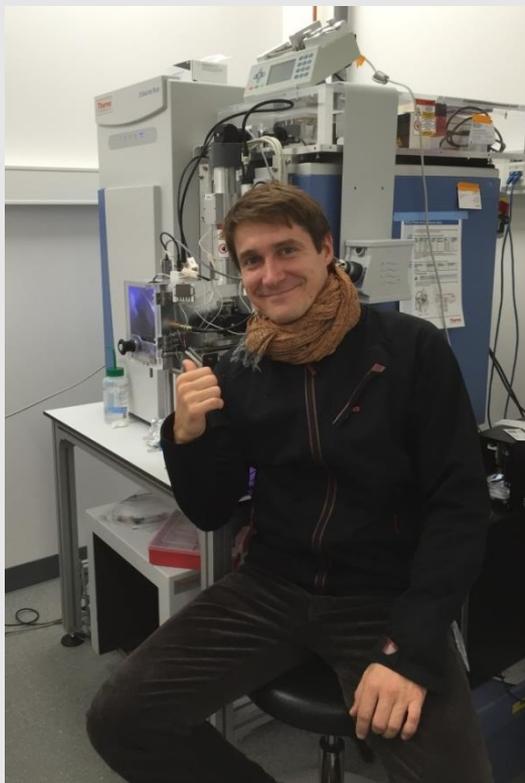
Vladimír Beneš

Rm V106

benes@embl.de

genecore@embl.de

Metabolomics CF



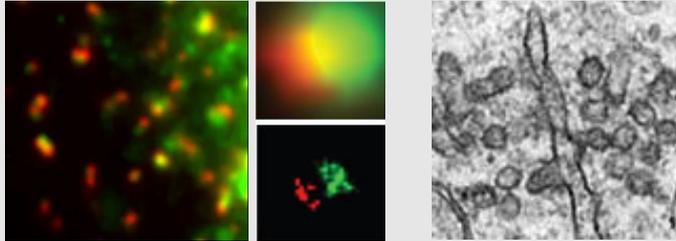
- Global metabolite/metabolomic profiling
- Targeted metabolomic profiling
- Lipidomic analysis
- Identification of small molecules and metabolites
- LC-MS development for special applications
- Data analysis

Theodore Alexandrov
Rm 428

theodore.alexandrov@embl.de
mcf@embl.de

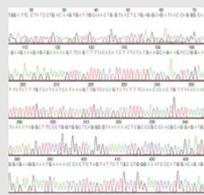
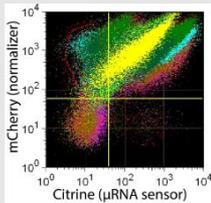
Cross-Facility workflows

Light & Electron Microscopy

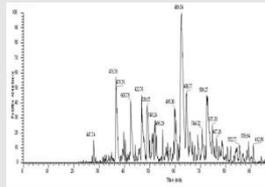


Bridging biological scales

Flow Cytometry Genomics

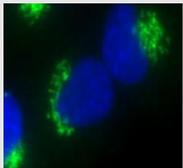


MassSpec

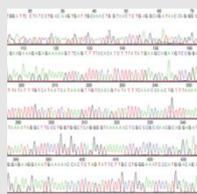
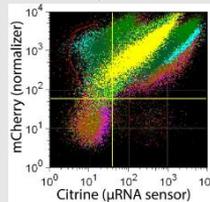


Single cell genomics, metabolomics

Light microscopy



Flow Cytometry Genomics



Correlating phenotype with transcriptome, proteome and metabolome

EMBL Core Facilities in Summary

- Established core facilities with a stable user base
- Critical mass in highly skilled staff and cutting edge equipment
- Subsidized affordable user fees
- Significant contribution to EMBL's scientific output
- Significant contribution to international training activities
- Active in international networking
- User feedback and technology scouting mechanisms

Christian Boulin Fellowships

- The fellowships support travel and accommodation cost of young scientists from Member & Prospect States visiting EMBL Core Facilities to benefit from access to the latest scientific techniques
- Funds provided by the Corporate Partnership Programme (CPP)
- ~15 fellowships annually, up to 1500 € each
- **www.embl.de/services/core_facilities/boulin-fellowship/index.html**
- Email: **boulinfellowship@embl.de**



Thank you!