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Core Facility Day 2024

Life Sciences

16 OCTOBER, 2024
CEITEC, E35/211 + ATRIUM

Curious about what expert services are available to researchers on campus? What instruments can you use in shared mode and under what conditions? Do you want to see everything for yourself?

Register at: muni.cz/go/fba265



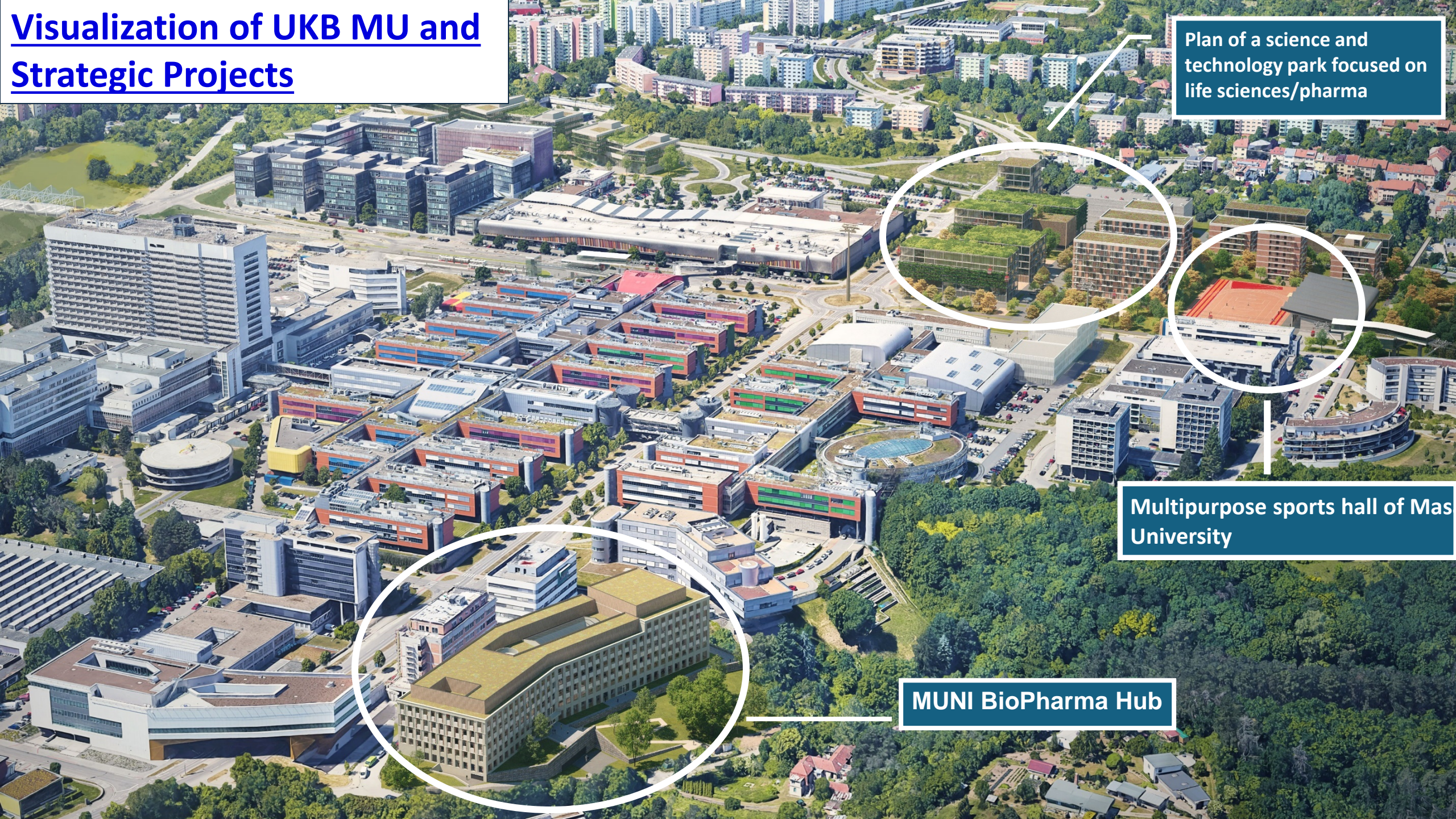
MUNI

MUNI BioPharma Hub

Šárka Pospíšilová

Vice-rector for research and doctoral studies

Visualization of UKB MU and Strategic Projects



Plan of a science and technology park focused on life sciences/pharma

Multipurpose sports hall of Mas University

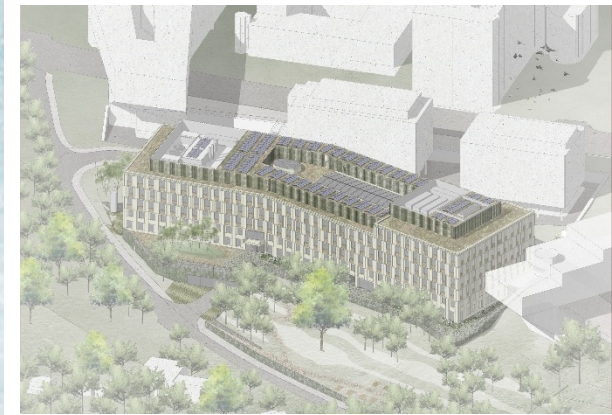
MUNI BioPharma Hub

„MUNI BioPharma Hub“ Project

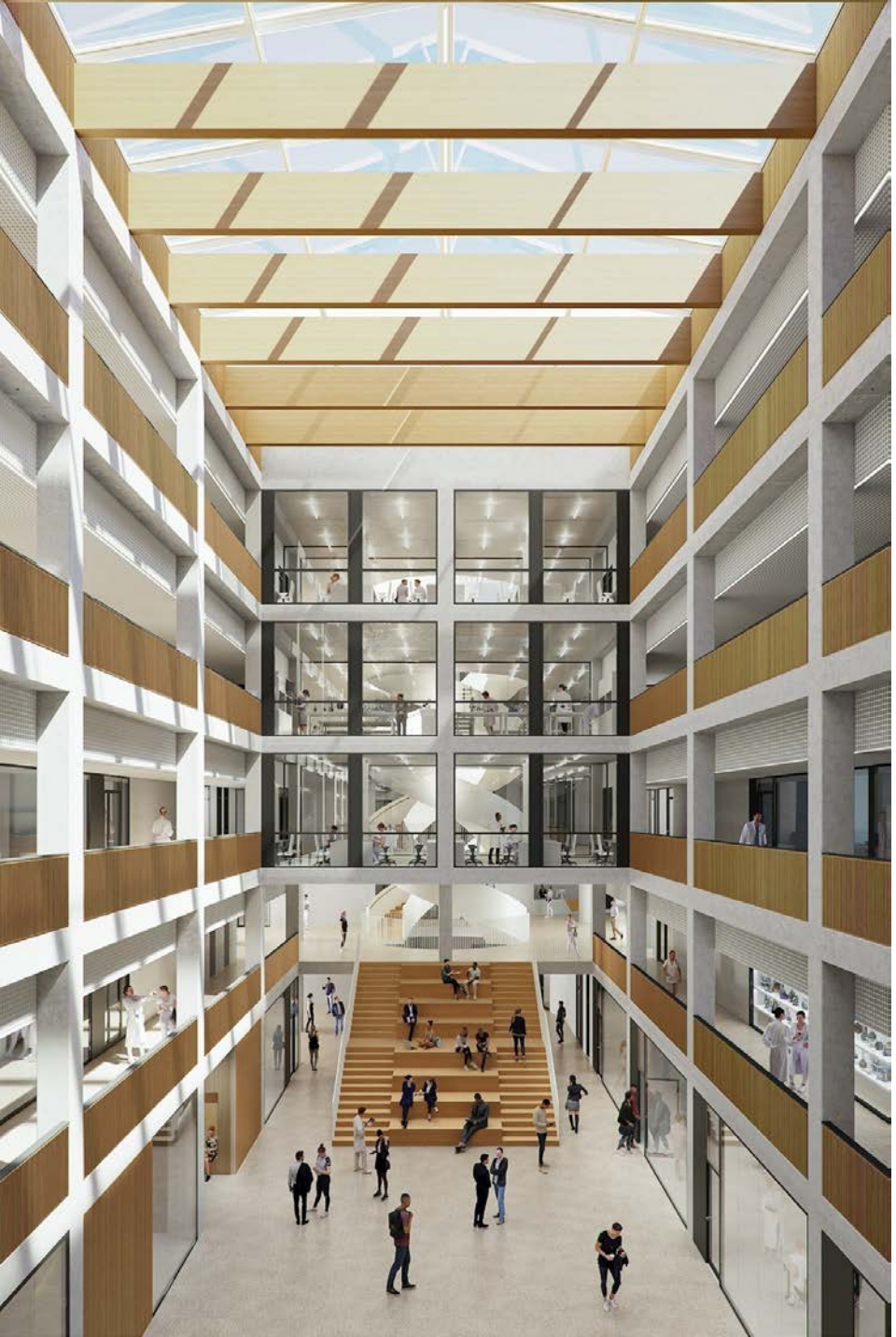
- Unique concentration of capacities at the University Campus Brno - Bohunice
- Supported by the National Recovery Plan 3.2.4 – active communication with the Ministry of Industry and Trade, Ministry of Education, and other stakeholders, essential support for the entire ecosystem (new study programs focused on supporting the pharmaceutical industry in the Czech Republic, etc.)
- BioPharma Hub represents a unique integration of modern teaching spaces for the Faculty of Pharmacy (FaF) and advanced research infrastructures of the Preclinical Center (PC) and the Center for Molecular Medicine (CMM).
- Server and computing infrastructure of Institute of Computer Science – involved in e-health, big data, AI, etc.
- Infrastructure for scientific education in biomedical research, linked to applications (already a functioning platform/technological cluster „Life Sciences 4.0" of Regional Chamber of Commerce and the City of Brno).
- Enhanced resilience of Czech society to both expected and unexpected threats, and improving pharmaceutical self-sufficiency



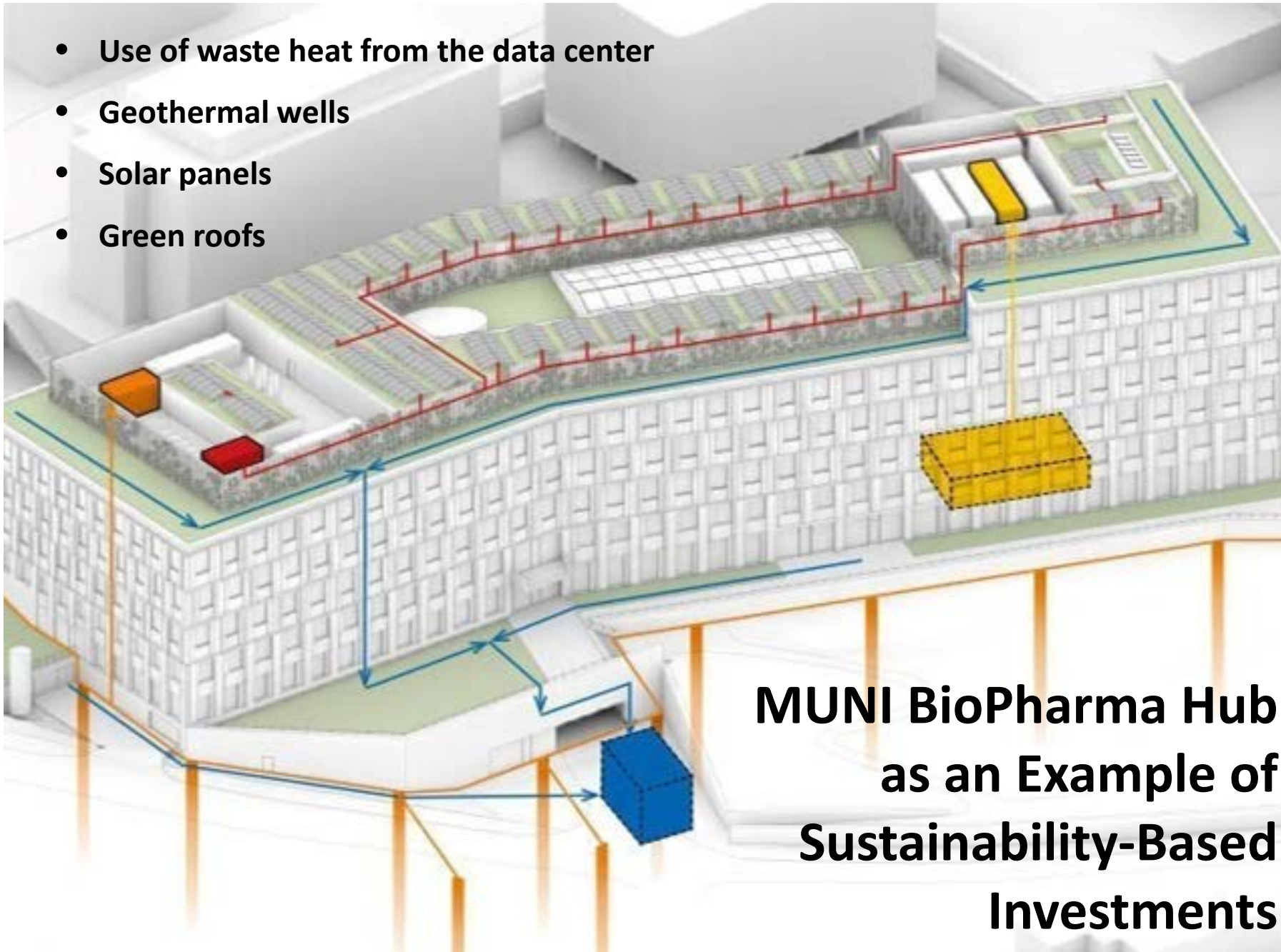
- The largest investment at MU since the completion of the University Campus Brno - Bohunice (total investment exceeds 4 billion CZK).
- MUNI BioPharma Hub offers more than 30,000 m² of space for education, research, and development (with a net usable area of almost 17,500 m², including two key core facilities – Preclinical Center and GMP for clinical drug batch production).
- Grant decision issued in June 2024 (MU co-finances about 30% of the budget beyond the 10% required by the National Recovery Plan).
- Completion of construction expected in 2026



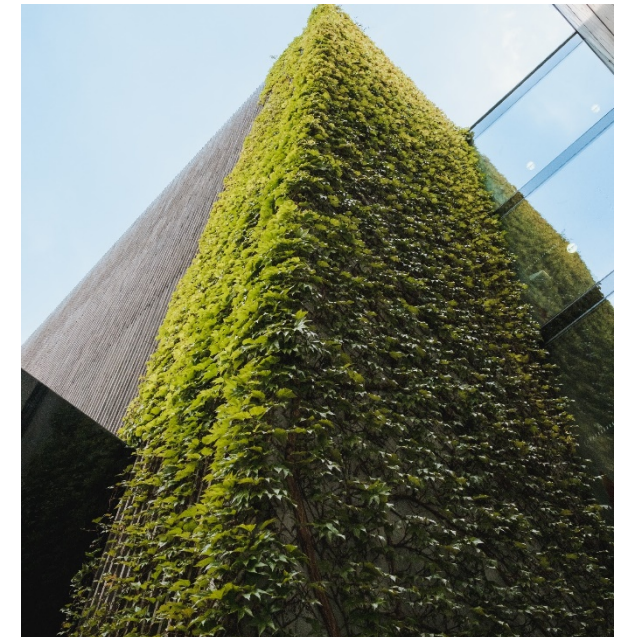
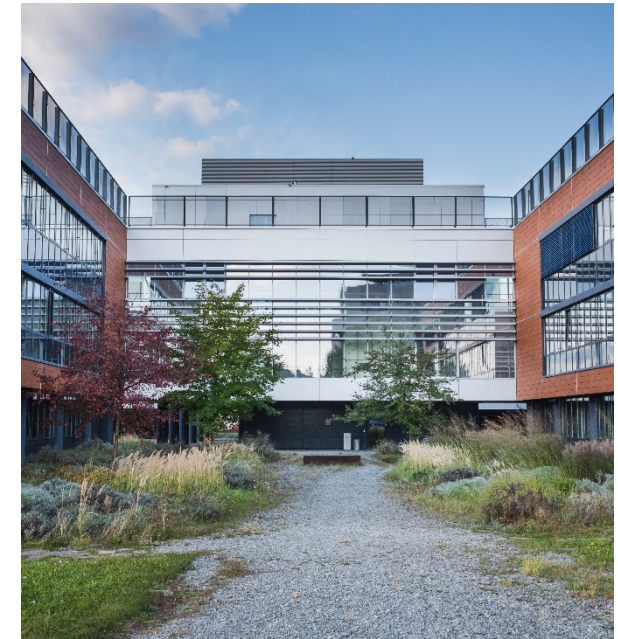




- Use of waste heat from the data center
- Geothermal wells
- Solar panels
- Green roofs



MUNI BioPharma Hub as an Example of Sustainability-Based Investments



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MUNI BioPharma Hub



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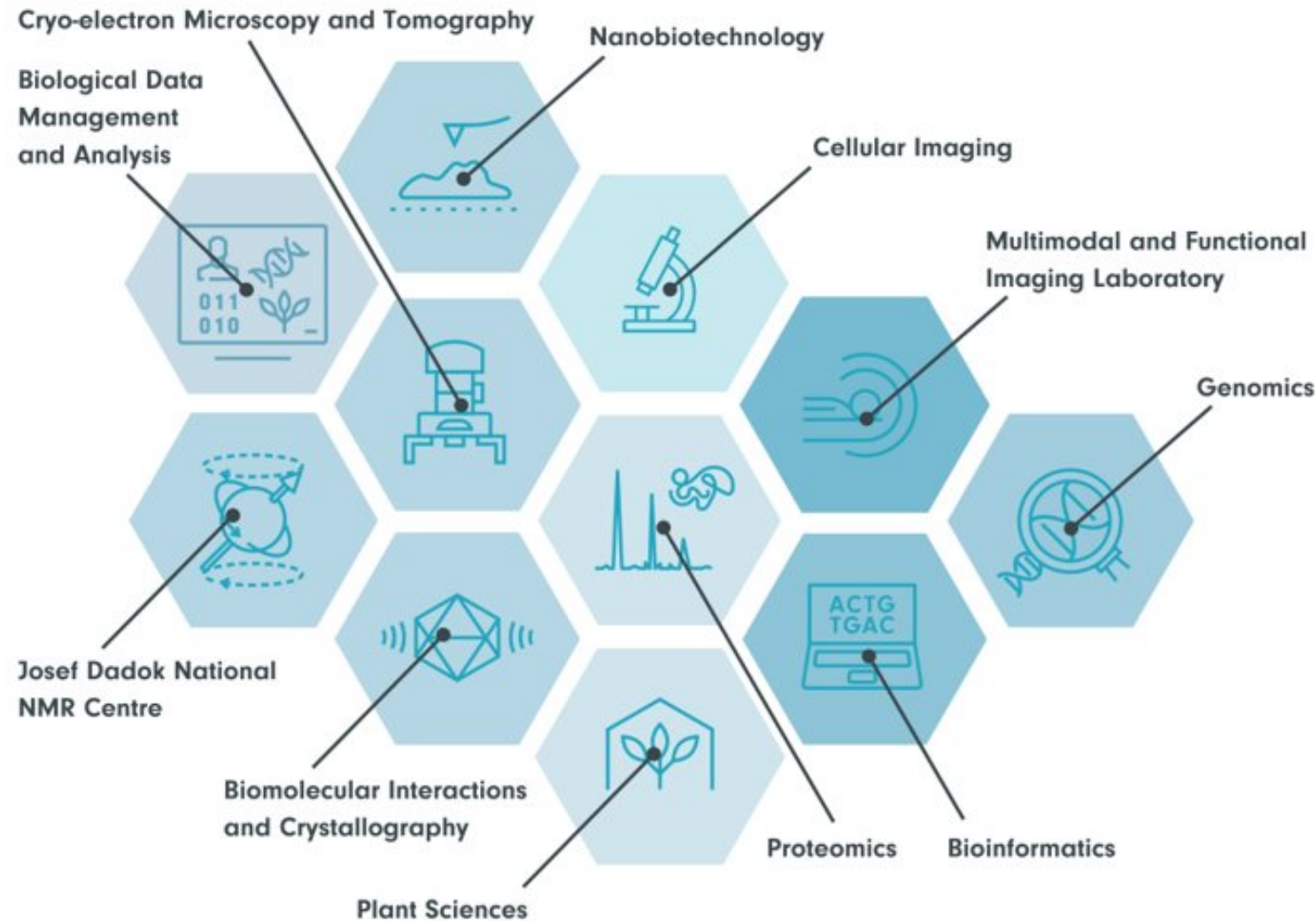




CEITEC MUNI Core Facilities

Jiří Nováček, Deputy Director for Research Infrastructure
CF Day Life Sciences, 16 October 2024

CEITEC MUNI Core Facilities



• WHO?:

- technological (service) units
- state-of-the-art instrumentation

• WHAT?:

- access to instrumentation
- training
- complete service
- expertise & consultations

• HOW?:

- open-access
- domestic & foreign users
- academia & industry

CFs in Large Research Infrastructure consortia



- Large Research Infrastructure (LRI) financing – 2nd pillar of institutional financing in the Czech Republic
 - CEITEC involved in **5 LRIs**
 - very convenient service cost for the researchers thanks to LRI support by MEYS
- participation in other **15 national** and **8 international projects**
- partners in the European RI consortia
 - access to complementary equipment
 - transfer of knowledge
 - joint research activities



CF administration team

core.facility@ceitec.muni.cz
booking.support@ceitec.cz



Jiří Nováček

Deputy Director for Research Infrastructure



Kateřina Hošková

Secretary for Research Infrastructures



Lenka Bojanovská

CF Manager



Ivana Kozáková

Quarterly and yearly reporting,
data processing



Klára Skopalová

Invoicing of CF services,
issuing offers



Jakub Johaník

Horizon projects

Vladimír Horský

Booking system
technical support

How to get access?

How to get access?

- Contact us at core.facility@ceitec.muni.cz
- Send email directly to **CF Head**
- Request an official quote or price list
- Register to **CEITEC booking system** – available at CF website
- Follow the **open access rules** of relevant Large Research Infrastructure (submit an open access proposal)
- **Acknowledge** our CF in the future publication resulting from the acquired data

Follow our website

Each CF has its website with updated content



MUNI MU

Josef Dadok National NMR Centre

Pavel Kadeřávek, Ph.D.



MUNI MU

Proteomics Core Facility

Prof. Zbyněk Zdráhal



MUNI MU

Biomolecular Interactions and Crystallography Core Facility

Josef Houser, Ph.D.



MUNI MU

Nanobiotechnology Core Facility

Jan Příbyl, Ph.D.



MUNI MU

Multimodal and Functional Imaging Laboratory

Michal Miki, Ph.D.



MUNI MU

Genomics Core Facility

Boris Tichý, Ph.D.



MUNI MU

Cellular Imaging Core Facility

Milan Ešner, Ph.D.



MUNI MU

Plant Sciences Core Facility

Petr Mokroš, Ph.D.



MUNI MU

Bioinformatics Core Facility

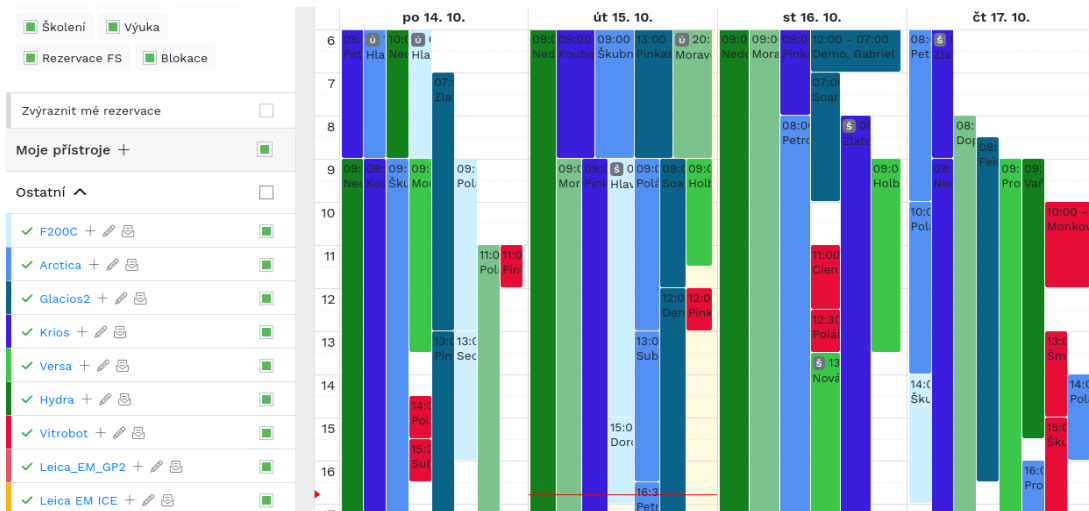
Vojtěch Bystrý, Ph.D.

- Access rules
- Equipment/services
- Events
- Acknowledgment
- Data policy
- Other

Access modes

<https://booking.ceitec.cz>

User mode



Core Facilities

Our Core Facilities equipped with cutting-edge technologies in nanotechnologies and life material sciences. High-end instrumentation, funded through national and European projects, accessible to internal and external users from academy and industry at national and international levels.

Service mode

The screenshot shows a 'Stav požadavku:' (Request Status) form. At the top, there is a progress bar with stages: 'Nový návrh řešení', 'Akceptace zákazníkem', 'Mýjato', 'V realizaci', 'Měření', 'Změněno', 'Předáno', 'Převzato', 'Hotovo', 'Zamítuto', and 'Zrušeno'. The 'Mýjato' stage is currently active. Below the progress bar, there are tabs for 'Požadavek', 'Rezervace', 'Dokumenty', 'Vzorky', 'Nabídka', 'Diskuze', 'Výsledek', and 'Audit'. The form fields include: 'Název:' (ID_Co9Dy_RK_DRY), 'Řešitel:' (Marek, Jaromír), 'Požadováno:' (Dorošenko, Jaroslav), 'Výzkumná skupina:' (XrayCF & Ústav chemie), 'Projekt:' (XrayCF & RG J.Pinkas), 'Počet vzorků:' (1), and 'Předběžná cena:' (0). On the right side, there is a 'Finanční kontrola:' section with buttons for 'Objednávka vystavena', 'Schváleno', and 'Fakturováno'.

Receive quarterly usage overview

- Online reporting system of CF usage to users – usage of all CFs in the **unified format**
- Connected to approval process and payment of the fee (quarterly)
- It contains the full price relevant to each user category (internal, external academic, commercial) and the **fee contribution (15 – 30%)** depending on LRI resources

| 2Q 2024 - [user group/name] | | | | | |
|--|--|----------------|----------------------|---------------------|------------------|
| CF CELLIM - 712022 - Milan Ešner <milan.esner@ceitec.muni.cz> | | | | | |
| Service | Price per unit | Units utilized | Total price | FEE calculation | Comment(s) |
| Advanced Confocal microscope | 663 CZK - hour | 37.83 | 25,081.29 CZK | 6,270.32 CZK | |
| Routine Confocal microscope | 517 CZK - hour | 23 | 11,891 CZK | 2,972.75 CZK | |
| Histological microscope | 108 CZK - hour | 14.5 | 1,566 CZK | 391.5 CZK | |
| Widefield microscope | 295 CZK - hour | 67.5 | 19,912.5 CZK | 4,978.13 CZK | |
| Group summary | Payment method: Internal invoice IP | | 58,450.79 CZK | 14,612.7 CZK | |
| CF summary | | | 58,450.79 CZK | 14,612.7 CZK | |
| CF Plants - 712023 - Petr Mokroš <petr.mokros@ceitec.muni.cz> | | | | | |
| Service | Price per unit | Units utilized | Total price | FEE calculation | Comment(s) |
| E26 Phytotrons 1,2,3,4,5 | 530 CZK - bank/week | 13 | 6,890 CZK | 2,067 CZK | |
| Group summary | Payment method: Internal invoice IP | | 6,890 CZK | 2,067 CZK | |
| CF summary | | | 6,890 CZK | 2,067 CZK | |
| CF Proteomics - 712021 - Zbyněk Zdráhal <zbynek.zdrahal@ceitec.muni.cz> | | | | | |
| Service | Price per unit | Units utilized | Total price | FEE calculation | Comment(s) |
| Identification protein | 3,269 CZK - sample | 6 | 19,614 CZK | 2,942.1 CZK | |
| Group summary | Payment method: Internal invoice IP | | 19,614 CZK | 2,942.1 CZK | |
| CF summary | | | 19,614 CZK | 2,942.1 CZK | |
| All CF summary | | | 84,954.79 CZK | 19,621.8 CZK | excl. VAT |

CF statistics

Usage of CFs in numbers (2023)

804 individual users per year from

- **25** countries
- **77** external academic institutions
- **10** companies

30% of measured hours provided to users outside CEITEC

216 papers acknowledging CEITEC CFs in 2023



922 papers acknowledging CEITEC CFs since 2015

Future plans

Core Facilities – Long term vision

- Anticipate developments in **research methods**:
 - Promote integrative services – analyses of samples by multiple CFs.
 - Reflect in future purchases of instruments.
- Expand support provided to users in **data analyses**.
- Strategy to handle increased amounts of **recorded data & open data**.
- Strategy to maintain / discontinue depreciated but useful instruments (risk management).
- **HR strategy** of CF focused on staff retainment and development/training.
- Implementation of **electronic tools** for data management and communication with users.



CTLS 2025
BRNO

SAVE THE DATE

CORE TECHNOLOGIES
FOR LIFE SCIENCES
CONGRESS 2025

10-12 JUNE 2025
BRNO, CZECH REPUBLIC



CORE TECHNOLOGIES
FOR LIFE SCIENCES



CEITEC

MUNI

WWW.CTLS2025.COM



Registration opened - <https://www.ctls2025.com/>



[HOMEPAGE](#) • [PROGRAMME](#) • [REGISTRATION](#) • [VENUE](#) • [PARTNERS](#) • [CONTACT](#)



WELCOME TO CTLS 2025

We're excited to invite you to join us at the CTLS 2025 Congress happening in the beautiful city of Brno! This gathering is going to be an excellent opportunity, bringing together core facility administrators, managers, researchers, and professionals to talk, collaborate, and dive into why core facilities are key to shaping the scientific world. Don't miss out!

Early bird registration deadline **February 2025** / Abstract submission deadline **March 2025**



CTLS 10-12 JUNE 2025
BRNO, CZECH REPUBLIC

Sessions – see abstracts on website

1. Fostering Innovation in Core Facilities and Research Infrastructures:

Session Co-Chairs: Zuzana Hlavenková, Barry Moran

2. Industry Engagement – Technological Showcases:

Session Co-Chairs: Julia Fernandez Rodriguez, Pavel Tomančák

3. How to make institutions/research groups aware of the importance of core facilities:

Session Co-Chairs: Kateřina Hošková, Gert Van Minnebruggen

4. Core Facilities and Open Science:

Session Co-Chairs: Jiří Marek, Ralph Palmisano

5. Professional development:

Session Co-Chairs: Valentina Adami, Eliška Handlířová

6. Building national CF community:

Session Co-Chairs: Ondřej Hradil, Gabriella Tedeschi

7. How to develop a successful training program:

Session Co-Chairs: Luisa Cortes, Daniel Hadraba

8. Cross-facility workflows and cooperation:

Session Co-Chairs: Aleš Benda, Josh Rappoport



ceitec_brno



CEITEC_Brno



CEITEC



CEITEC -
Central European
Institute of Technology

Thank you for your attention!

core.facility@ceitec.muni.cz

ceitec.eu/core-facilities/

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MUNI

Research Infrastructures at MUNI & EDUC-WIDE Project Opportunities

Ondřej Hradil, Rectorate, Research Office

Core Facility Day Life Sciences, 16.10.2024

MUNI

**Research Infrastructures at
Masaryk University**

Research Infrastructures (RI) Website

Enabling excellent research

Research infrastructure capacities and expertise enable excellent research, support technological innovation, and drive multidisciplinary data-based science.



Research infrastructures at Masaryk University

European infrastructures

Masaryk University's research infrastructures are part of the European Strategic Forum on Research Infrastructures (ESFRI) projects. Masaryk university coordinates the ESFRI infrastructure for human exposure Research, EIRENE.

[MORE](#)

National infrastructures

At the national level, Masaryk University is involved in 14 large research infrastructures, of which it coordinates four (CEPLANT, CIISB, CZECRIN a RECETOX). The infrastructures cover most of the scientific research areas.

[MORE](#)

University infrastructures

At Masaryk University, individual faculties and departments also provide access to additional research capacities that do not operate under the umbrella of national or European infrastructures.

[MORE](#)

<https://www.muni.cz/en/research/our-equipment>

MUNI

Research Infrastructures Website

Large research infrastructure projects

Our scientific teams are involved in 14 large research infrastructures, which are included in the [Roadmap of Large Research Infrastructures of the Czech Republic](#). All of them are funded by Czech Ministry of Education, Youth and Sports and provide open access to both Czech and international researchers. Our research infrastructures cover many areas of scientific research.

Health and food



Institutional Research Infrastructures

Masaryk University provides access to a number of institutional research infrastructures (also called core facilities) to its researchers and students as well as outside academic and commercial entities. A list of available core facilities can be found below.



European research infrastructures

At the European level, our scientific teams are involved in projects and landmarks on the so-called [ESFRI Roadmap](#) (2021 update). One of the new ESFRI projects focused on the human exposome, [EIRENE](#), is coordinated by Masaryk University. It is only the second ESFRI project coordinated by the Czech Republic.

MUEEL - Experimental Economics Laboratory [↗](#)

Masaryk University Experimental Economics Laboratory (MUEEL) provides the infrastructure for conducting experimental research in economics. MUEEL supports the development and execution of experiments that explore

GGP - Generations and Gender Program [↗](#)

GGP is a distributed social science research infrastructure, locally known as the "Contemporary Czech Family" project. It collects, processes, archives, and disseminates data about people's life courses, parents and children, partners, intergenerational relations, opinions about family, and

Environment



[ACTRIS – exploring the atmosphere ↗](#)



[EIRENE – human exposome ↗](#)



RIs at MUNI employee portal



<https://portal.muni.cz/research/support/research-infrastructure>

Research infrastructure

Research infrastructure means facilities, resources and related services that are used by the

9.9.

Call for Research Projects: Access to EDUC Research Infrastructures

The European Digital UniverCity - EDUC Alliance is excited to announce a call for research projects requiring access to its advanced technologies and services via core facilities and research infrastructures

1.7.

Register for Core Facility Day Life Sciences 2024

Curious about what expert services are available to researchers on campus? What instruments can you use in shared mode and under what conditions?

15.6.

Poskytovatelé grantů a systém projektové podpory na MU

Aktualizace přehledu Poskytovatelů grantů a systému projektové podpory na MU.

14.6.

Debata o výzvách programu HE do budoucna

Uskutečnila se debata o plánovaných výzvách programu HE v období 2025-2027 a o přípravách dalšího rámcového programu (FP10).

EDUC-WIDE

Call for Research Projects Requesting Access to
EDUC Research Infrastructures – for researchers
(researchers to core Facilities)

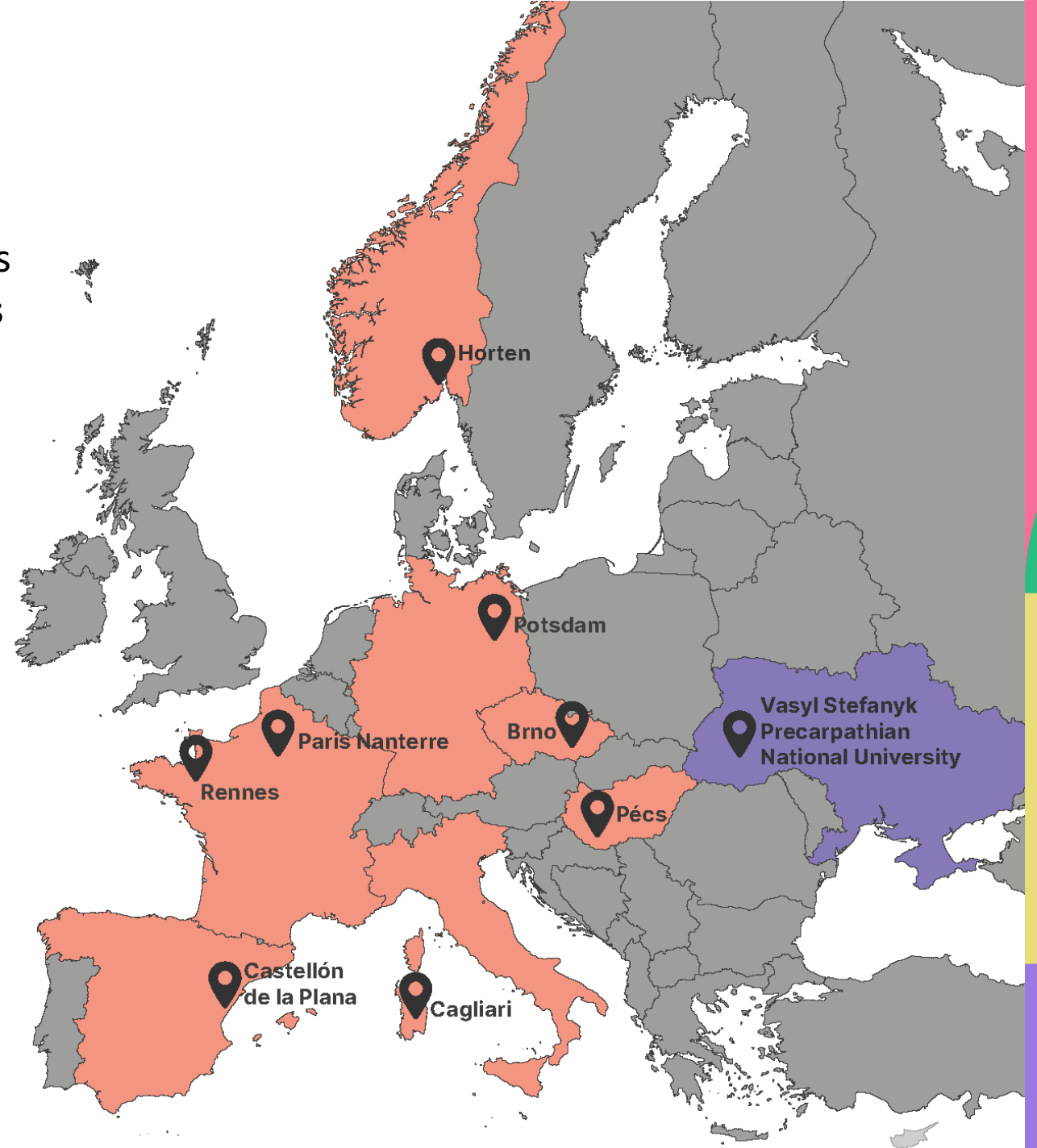


Co-funded by
the European Union

www.educalliance.eu

EDUC-WIDE consortium

- The **EDUC Alliance** brings together **universities** to create a collaborative network that promotes the **sharing of knowledge and academic values** across institutions in Western, Central, and Southern Europe.
- **Members:**
 - University of Pécs
 - University of Potsdam
 - University of Cagliari
 - Jaume I University
 - University of South-Eastern Norway
 - Masaryk University
 - University Paris Nanterre
 - University of Rennes
 - Vasyl Stefanyk Precarpathian National University, Ivano Frankivsk



Call for Requesting Access to EDUC RIs

TIMELINE & BUDGET

- Opened from **31st July till 31st October 2024**
- Applicants will be informed about the outcome of the call by 30th November 2024
- All projects must be implemented by 30th September 2025.
- Total allocation of funding: **76.000 EUR**

APPLICANTS/USERS

- Researchers working at EDUC member institutions
- Ph.D. candidates of EDUC member institutions

UNIVERSITIES PROVIDING EQUIPMENT AND SERVICES

- Masaryk University
- University of Pécs
- Vasyl Stefanyk Precarpathian National University

ELIGIBLE EDUC MEMBER INSTITUTIONS

- Masaryk University,
- University of Cagliari
- University of Pécs
- University of Rennes
- University of Potsdam,
- University Paris Nanterre
- University of South-Eastern Norway,
- University Jaume I
- Vasyl Stefanyk Precarpathian National University

Core Facilities participating in the call

MASARYK
UNIVERSITY

10



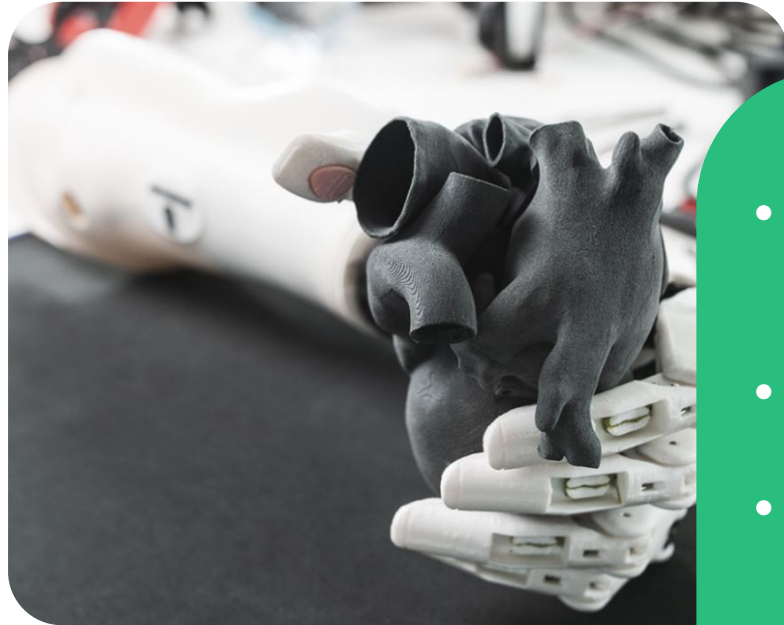
9



PÉCSI TUDOMÁNYEGYETEM
UNIVERSITY OF PÉCS

4

Research Infrastructures of the University of Pécs participating in the access call



Social Sciences

- Behavioral Sciences Lab

Health and Food

- National Laboratory of Virology BSL4 laboratory
- Hungarian Centre for Genomics and Bioinformatics

Data, Computing and Digital RIs

- 3D Printing and visualization centre (3D centre)



Research Infrastructures of PNU participating in the call



Health and Food

- Laboratory of Plant Micropropagation
- Fruit Fly Facility
- Laboratory of Animal Metabolism
- Animal Facility
- Laboratory of Fluorescence Spectroscopy

Physical Sciences and Engineering & Environment

- Laboratory of Semiconductor Material Science for Energy Application
- Nanotechnology Lab for Materials Science, Energy and Medicine (PNU-NanoLab)
- The International Scientific Center "Observatory"
- Educational and Scientific Center of Materials Science and Nanotechnologies



Timeline of the call

**31st July
2024:** call is
open

**12th September
2024:** webinar (from
the University of
Cagliari)

**19th September
2024:** webinar (from
the University of
Pécs)

**31st October
2024:** call is
closed

**30th November
2024:** outcome of
the call to be
published

**30th September
2025:** all projects
must be
implemented

EDUC Research Infrastructures Database

- <https://educ.openup.education/facilities/?skip=0&ascending=false>

The screenshot displays the EDUC Research Infrastructures Database interface. On the left is a navigation sidebar with icons and labels for: Feed, Members, Mentoring, Courses, Jobs, News, Core facilities (highlighted), Projects, Seed projects, Groups, Events, Podcasts, and Admin. The main content area is titled "Core facilities" and includes tabs for "All", "My core facilities", and "My applications", along with a "+ Create" button. It shows "151 result found" with a "sort by" dropdown. Two facility cards are visible: "UJI- Inductively Coupled Plasma Mass Spectrometry (ICP-MS)" and "UJI- Elemental analysis". The ICP-MS card includes a description: "ICP-MS: Inductively Coupled Plasma Mass Spectrometry for elemental analysis." The Elemental analysis card includes a description: "Elemental analysis: C, H, N, O, and S in materials of various origins, generally organic." A "FILTERS" sidebar on the right contains a "Global search" field, "Universities" and "Scientific fields" dropdown menus, and a "Clear filter" button. At the bottom of the facility cards, there are small colored geometric shapes representing the facility's branding.

EDUC-WIDE

Knowledge Sharing Scheme – for Core Facilities
(core facility to core facility)



Co-funded by
the European Union

Knowledge Exchange Scheme

- **Cooperation** between **core facilities** from at least two EDUC-WIDE partner universities **within the same domain**
- **Activities** are flexible and based on the needs of the facilities:
 - Management exchanges on organizing and managing facilities at the university level
 - Online workshops
 - Physical workshops
 - Short or long-term staff exchanges



Knowledge Exchange Scheme - topics

1. Nanotechnologies and microtechnologies
2. Cryo-electron microscopy
3. Genomics + Bioinformatics
4. Virology BSL4/ BSL3
5. Animal/behavioral facilities
6. Single-Crystal X-Ray Diffraction (SC-XRD)
7. Digital humanities (SSH topic)
8. Experimental economics
9. Behavioral science labs
10. Sociology and GGP
11. Molecular analysis – management of facilities

EDUC-WIDE

Seed projects call – for researchers (researcher to researcher)



Co-funded by
the European Union

www.educalliance.eu

SEED projects *(small-scale collaborative R&I projects)*



- Upscale collaboration among EDUC Universities (and their ecosystem).
- Initiate collaboration on R&I topics of joint interest within the EDUC consortium.
- Translate/deploy academic knowledge into non-academic environment.

BASIC INFORMATION

- At least 2 EDUC Universities, one must be based in the Widening country *(CZ, H, UA)*.
- **Duration:** 12-18 months *(June 2025-November 2026)*.
- **Expected results:**
 - scientific publication,
 - join proposals for follow-up funding,
 - knowledge transfer.

SELECTION CRITERIA

- 1) Innovativeness of the research project,
- 2) Impact in defined priority areas
 - *Life-long Health and Wellbeing,*
 - *Justice, inequality and inclusion,*
 - *Mobility/Smart Cities,*
 - *Sustainable Changes: Climate and resources,*
 - *Cyber Security and AI,*
- 3) Ecosystem involvement,
- 4) Vision of sustainability,
- 5) Feasibility.

BUDGET

- Total amount 400.000 € *(+ indirect costs),*
- 20.000 - 60.000 € per project *(+ indirect costs),*
- Lump sum redistribution,
- Cap for Advanced partners: 150.000 €,
- Associated partners *(UR, UPN)* can participate at no financial costs.