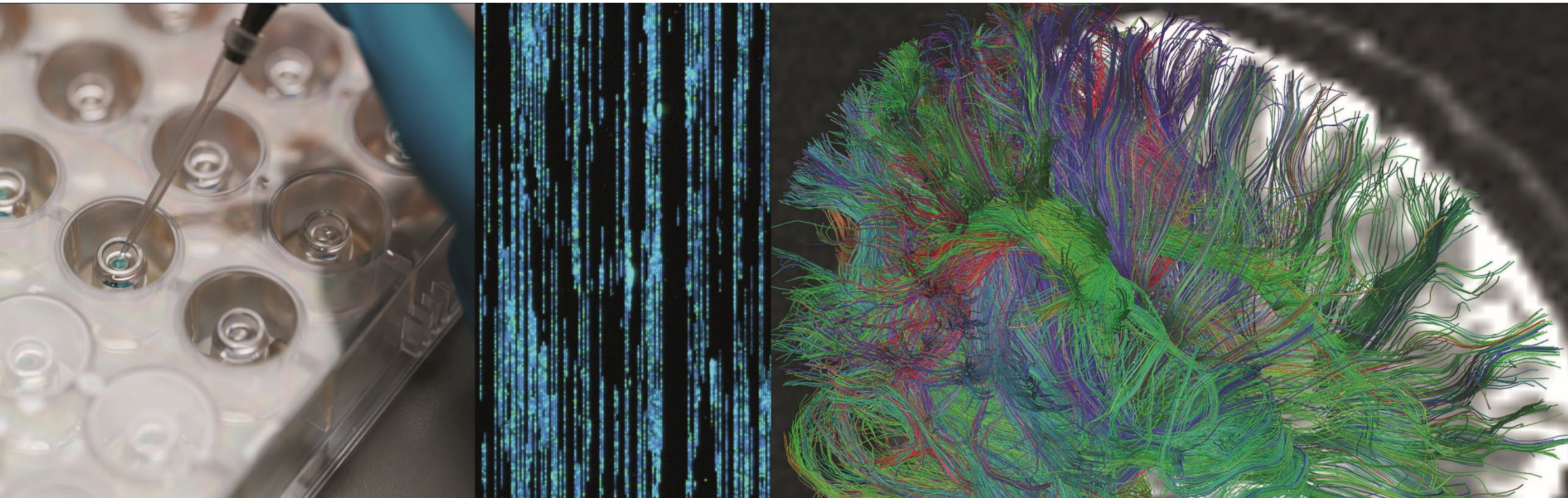


HHU CORE FACILITY SYMPOSIUM 2023 - KEY ELEMENTS FOR YOUR RESEARCH

Wednesday, February 8, 2023, 9am until 4pm, O.A.S.E. Forum des Austauschs

Core facilities as central research structures are essential to fulfil the individual needs of researchers for state-of-the-art technology and services. The Medical Faculty and the Faculty for Mathematics and Natural Sciences at Heinrich Heine University have joined forces to support each other in building a network of core facilities to advance research in the life sciences on the HHU campus.

To give you the opportunity to join the community and to advance your own research, we would like to introduce our core facilities and the idea behind the concept in a joint Core Facility Symposium. This will also allow you to connect with our core facility managers over coffee and snacks.



Start	Agenda	Speaker
09:00	Open doors / Coffee	
09:30	Welcome by the Dean of the Medical Faculty	Prof. Dr. Nikolaj Klöcker
09:35	Welcome by the Dean of the Faculty of Mathematics and Natural Sciences	Prof. Dr. Peter Kleinebudde
09:40	Campus Core Facilities: research infrastructures around the corner	Prof. Dr. Elisa May (German Cancer Research Center (DKFZ))
10:15	Coffee	
10:20	Introduction Part I "Analytical Core Facilities"	Prof. Dr. Markus Pauly
10:25	CeMSA@HHU	PD Dr. Klaus Schaper
10:40	CEPLAS metabolomics & metabolism laboratory (CMML)	Dr. Philipp Westhoff
10:55	Center für Structural Studies (CSS)	Dr. Astrid Port
11:10	Core Facility Flow Cytometry	Dr. Stefanie Bock
11:20	Nonparticipants in break out session exit the room	
11:25	Break Out Session with snacks part I "Analytische Core Facilities"	
11:55	Entering the room for part II	
12:00	Introduction Part II "High Throughput Screening Core Facilities"	Prof. Dr. Andreas Reichert
12:05	BMFZ Genomics & Transcriptomics Laboratory (GTL)	Prof. Dr. Karl Köhrer
12:20	BMFZ Molecular Proteomics Laboratory (MPL)	Dr. Anja Stefanski
12:35	High-throughput Drug Screening Core Facility (HTS-CF)	Dr. Nan Qin
12:55	Core Unit Bioinformatics (CUBI)	Dr. Peter Ebert
13:10	Nonparticipants in break out session exit the room	

13:15	Break Out Session with lunch break Part II "High Throughput Screening Core Facilities"	
13:55	Entering the room for part III	
14:00	Introduction Part III "Imaging Core Facilities"	Prof. Dr. Gerald Antoch
14:05	Magnetic resonance imaging Core Facility (MRI-CF)	Dr. Eric Bechler
14:20	Center for Advanced Imaging (CAi) & Advanced Light Microscopy Core Facility (Ad-Light)	Prof. Dr. Stefanie Weidtkamp-Peters & Dr. Boris Görg
14:40	Electron Microscopy Core Facility (CFEM)	Dr. Ann Kathrin Bergmann
14:55	Nonparticipants in break out session exit the room	
15:00	Break Out Session with snacks Part III "Imaging Core Facilities"	
15:45	Entering the room for closing words	
15:50	Closing words by the Vice Dean of Research and Junior Scientists of the Medical Faculty	Prof. Dr. Guido Reifenberger
Until 17:30	End of symposium & informal communication	

Register here:

<https://lmy.de/fdVZn>

>> **Part I "Analytical Core Facilities"**_ Introduced by Prof. Markus Pauly, (Head of the Institute of Plant Cell Biology and Biotechnology)

CeMSA@HHU PD Dr. Klaus Schaper, <https://www.cemsa.hhu.de/>

The abbreviation CeMSA@HHU stands for Center for Molecular and Structural Analytics at @ Heinrich-Heine Universität Düsseldorf. It consists of two divisions, NMR spectroscopy and mass spectrometry and focusses on the investigation of small molecules. Both divisions offer measurements in full service to all scientists at the Heinrich Heine University Düsseldorf.

CEPLAS Metabolomics & Metabolism Laboratory (CMML) Dr. Philipp Westhoff, <https://www.plant-biochemistry.hhu.de/facilities/metabolic-profiling>

The analysis of intermediates of the central carbon and nitrogen metabolism, with a strong emphasis on plant metabolism, is the major focus of the CEPLAS Metabolomics & Metabolism Laboratory (CMML). As an analytical platform, we apply and develop chromatography and mass spectrometry approaches to obtain a broad coverage of metabolite classes to detect and display metabolic changes. We support intracellular and extracellular approaches as well as isotopologue profiling studies. Our targets comprise especially small organic acids, sugars and sugar phosphates, amino acids and nucleotides as well as nucleotide sugars.

Center for Structural Studies (CSS) Dr. Astrid Port, <https://www.css.hhu.de/>

The Center for Structural Studies (CSS) provides a full service as well as access to its infrastructure and offers scientific support to all scientists at the HHU as well as to external users. The CSS applies scientific tasks within all areas of structure-supplying methods at an atomic level, for instance X-ray diffraction analysis and structure determination (MX) of proteins, Small-Angle-X-ray-Scattering-Analysis (SAXS) of proteins and all kinds of complexes thereof, SAXS for small (inorganic or organic) molecules, colloidal particles and cross-linked microgels, and molecular modelling and simulation for macro- and micromolecules.

Core Facility Flow Cytometry (CFFC) Dr. Stefanie Bock, <https://www.medizin.hhu.de/forschungsprofil/core-facilities>

The Core Facility Flow Cytometry is newly established and located in the MFZ-I. We will offer cell analysis and cell sorting using high-parameter flow cytometry. Our aim is to provide all our users access to state-of-the-art cell analyzers and sorters. The users will get full support also with experimental design, creating standardized flow cytometry panel, hands-on training, and data analysis with the appropriate expertise.

>>> **Breakout session**

>> **Part II "High Throughput Screening Core Facilities"** _ Introduced by Prof. Andreas Reichert (Scientific lead of electron microscopy core facility)

BMFZ Genomics & Transcriptomics Laboratory (GTL) Prof. Dr. Karl Köhrer, <https://www.gtl.hhu.de/>

The Genomics & Transcriptomics Laboratory (GTL) of the BMFZ has a long-standing history in genome and transcriptome (OMICs) analyses. The GTL offers various routine analyses of DNA and RNA samples, including standardized quality controls of DNA and RNA, Sanger sequencing as well as DNA fragment analyses. In addition, the GTL is open for scientific collaborations on more sophisticated high-throughput next generation sequencing (NGS) projects, including NGS short-read, long-read and single cell analyses. We support our collaborators throughout the entire projects, including detailed consulting, multiple quality control steps as well as data analyses.

BMFZ Molecular Proteomics Laboratory (MPL) Dr. Anja Stefanski, <https://www.bmfz.hhu.de/zentrallaboratorien/molecular-proteomics-laboratory-mpl>

The Molecular Proteomics Laboratory (MPL) of the BMFZ offers access to modern protein analysis techniques to understand complex biological systems. As part of our service, we offer state-of-the-art quantitative mass spectrometry-based protein analysis for all kinds of samples to support your research e.g. in the discovery of biomarkers, drug response, or protein interactions. Our services range from technical consulting, project design, sample preparation, development of optimized analytical methods as well as the actual sample measurement and basic bioinformatic analysis of the obtained MS data. The facility is listed in the Research Portal of the German Research Foundation (RI_00390).

High-throughput drug screening core facility (HTS-CF) Dr. Nan Qin, <https://www.uniklinik-duesseldorf.de/patienten-besucher/klinikeninstitutezentren/klinik-fuer-kinder-onkologie-haematologie-und-klinische-immunologie/high-throughput-drug-screening-hts-cf>

The high-throughput drug screening core facility (HTS-CF) supports basic and translational research projects. Our standardized and automated workflow reveals candidate drugs or preclinical compounds that specifically affect physiological and pathological cellular functions of interest to our research partners. Different drug screening libraries, including over 1500 compounds, are readily available for our customers. We offer different readout strategies, including live-cell imaging, to tailor the assay suitable for discovery or validation screens in order to meet individual project needs.

Core Unit Bioinformatics (CUBI) Dr. Peter Ebert, <https://www.uniklinik-duesseldorf.de/patienten-besucher/klinikeninstitutezentren/institut-fuer-medizinische-biometrie-und-bioinformatik/core-unit-bioinformatik>

The Core Unit Bioinformatics (CUBI) is a full-service unit offering bioinformatic support for biomedical research projects. The CUBI develops, implements and maintains computational pipelines for standardized analysis tasks, offers initial project counselling and training sessions in workflow handling. The CUBI is your partner for engineering *in silico* solutions fitting your research process and data. The CUBI works towards establishing an open and sustainable bioinformatics platform promoting reproducible research and interdisciplinary scientific exchange.

>>> **Breakout Session**

>> **Part III "Imaging Core Facilities"** _Introduced by Prof. Dr. Gerald Antoch (Scientific lead of MRI core facility)

Magnetic resonance imaging (MRI) Core Facility Dr. Eric Bechler, <https://www.uniklinik-duesseldorf.de/patienten-besucher/klinikeninstitutezentren/institut-fuer-diagnostische-und-interventionelle-radiologie/forscher/mrt-core-facility>

The MRI Core Facility provides access to MR imaging for all researchers and supports their projects. For this purpose, the Core Facility has a 3T MRI (Siemens Magnetom Trio), which allows for the examination of different body regions at high resolution. Users can employ a wide range of state-of-the-art MRI methods, including diffusion imaging (DWI), perfusion imaging (PWI), susceptibility imaging (SWI), spectroscopy and non-proton MRI. Additionally, the Core Facility is equipped with cutting-edge hard- and software for functional brain imaging (fMRI), which is capable of measuring brain activities by detecting changes associated with blood oxygenation and flow.

Center for Advanced Imaging (CAi) Prof. Dr. Stefanie Weidtkamp-Peters, www.cai.hhu.de

At the Center for Advanced Imaging (CAi) we offer researchers access to highly complex microscope systems of light and electron microscopy as well as scientific support for the successful application of these techniques in their research projects. The CAi is open to researchers of the HHU and, by arrangement, to external users. In the interdisciplinary environment of life and material sciences, our current focus is on super-resolution microscopy and imaging fluorescence spectroscopy. In addition to image data acquisition, we also support the establishment of individual image analysis workflows and offer a central image database as part of our research data concept.

Core Facility for Advance Light Microscopy (Ad-Light) Dr. Boris Görg, <https://www.medizin.hhu.de/forschungsprofil/core-facilities>

Ad-Light is a newly established Core Facility for Light Microscopy which aims to provide access and support to state-of-the-art light microscopy techniques such as epifluorescence, confocal laser scanning and super-resolution microscopy. For this, we offer technical instructions and training, advice on the specific experimental design and evaluation of the data obtained. In collaboration with the CAi this will improve and expand the range of light microscopy services available to researchers at the campus of the HHU.

Electron Microscopy Core Facility (CFEM) Dr. Ann Kathrin Bergmann, <https://www.uniklinik-duesseldorf.de/cfem>

The Electron Microscopy Core Facility (CFEM) offers sample preparation, analysis and imaging of various organic and inorganic materials utilizing different electron microscopic techniques. In addition to conventional imaging with transmission (TEM) and scanning electron microscopes (SEM), we have the possibility of electron tomography and (correlative) volume microscopy using FIB-SEM. In order to ensure the highest possible accessibility for all researchers, we offer users both advice on any electron microscopy questions and training on the equipment, as well as the possibility of having projects carried out by us as service requests.

>>> **Breakout Session**