

Policy BioMolecular Characterization Umeå (BMCU):

The BioMolecular Characterization Umeå is an open access facility that provides state-of-the-art equipment for macromolecule characterization. This includes affinity measurements by Surface Plasmon Resonance (SPR), Isothermal Titration Calorimetry (ITC) and Quartz Crystal Microbalance with Dissipation (QCM-D), macromolecule folding characterization by (Circular Dichroism (CD) and Differential Scanning Calorimetry (DSC) and weight measurements by Mass Photometry (MP), Dynamic Light Scattering (DLS), and particle size distribution & concentration with NanoSight technology (NTA).

ORGANIZATION

BMCU staff:

Director: Marta Bally: marta.bally@umu.se

Co-director: Anna Arnqvist Björklund: anna.arnqvist@umu.se

Facility manager: Johan Olofsson Edlund: johan.olofsson.edlund@umu.se

Steering board:

- Thomas Borén, Medical Biochemistry and Biophysics, UMU
- Richard Lundmark, Medical and Translational Biology, UMU
- Ronnie Berntsson, Medical Biochemistry and Biophysics, UMU
- Linda Sandblad, Chemistry Department, UMU
- Karina Persson, Chemistry Department, UMU
- Jonathan Gilthorpe, Medical and Translational Biology, UMU
- Stéphane Verger, Umeå Plant Science Centre, SLU
- Suresh Jesuthasan, Molecular Biology, UMU
- Irene Martinez Carrasco, UMU
- Marta Bally, Clinical Microbiology, UMU

Affiliated to steering board:

- Erik Johansson, Head of Department, Medical Biochemistry and Biophysics, UMU
- Staffan Johansson, Head of Department, Medical and Translational Biology, UMU

II. POLICIES AND PROCEDURES OF THE FACILITY

1. INSTRUMENTS USER CLUB

User registration:

The macromolecule characterization instruments at BMCU are running under a general user club. To access the instruments, the Principal Investigator must contact the manager to join the user club and sign an annual agreement contract. The contracts will be renewed at the end of January every year, and once you are members, BMCU will automatically send out the contracts for renewal at the beginning of the year. A research group that is not a

member can join at any time during the year, but will still have to renew the contract at the end of January.

Care and Use of Equipment:

Please never attempt to fix any equipment problems, no matter how trivial they may seem. In case of problems, contact the BMCU staff as soon as possible. We will attempt to rectify the problem or will contact the appropriate service personnel. Following instrument use, the room and equipment should be left clean, operational, and in its standard configuration. If the instrument is damaged due to incorrect usage of the instrument the Principal Investigator (PI) will be charged accordingly.

Training:

For use of BMCU equipment, it is mandatory to first participate in user training for the instrument of interest, and to take a driver's license. Services from the platform include instructions for use and cleaning of equipment, as well as test running and verification of performance status. If users are found to lack appropriate driver's license for the equipment but still use it, access to the facility will be terminated for the user and the corresponding group and PI. Renewed access will only be considered after application by the PI to the board.

If a user is unable to attend a booked introduction they should notify the technician as soon as possible; failing to do so will result in the responsible PI being billed the equivalent session, but without anyone receiving the driver's license. If a user is more than 15 min late **without notifying** the technician, the technician can choose to reschedule the booking and the responsible PI will be notified and billed for technician time.

Booking:

Once the user has finished the training, the e-booking system will be activated for him/her. You can find the link on the website: <http://booking.chem.umu.se/> Users can only reserve time for their own use and no user may reserve time on any instrument for someone else.

Trained users may perform measurements and experiments on behalf of other research groups, including groups that are not registered users of the facility. Per default the invoice will be sent to the registered user's group unless alternative billing information is provided. If alternative billing information is provided, it should be provided to the facility manager in advance (johan.olofsson.edlund@umu.se). In addition, the billing party must be formally informed and should be a copied recipient (cc) in all correspondence with the facility to ensure acknowledgment and acceptance of the charges. If the users are running experiments in collaboration with private companies, they must notify BMCU as the fees may need to be adjusted according to university rules.

Users can cancel a booking themselves up to 12 hours before the active starting time from inside the online booking system. If the user needs to cancel past those 12 hours, they will

need to contact a superuser, or Johan (johan.olofsson.edlund@umu.se) to have it removed. Repeated late cancellations to an extent that affects other users will lead to a notification to the user and their PI. From that point on, the user may be invoiced for future last-minute cancellations.

Fees:

Academic Institutions: Running costs for ITC, SPR, DSC, and QCM-D instruments are charged on a per day basis to cover the annual expenses. The CD, NTA and MP instruments are billed by the

hour but can be booked for the full days as well. Additionally, BMCU will invoice for the introduction sessions for each instrument. In this case, you will also pay for the technician's time for giving the introduction in addition to the instrument time. During an introduction, the technician is allowed to decide how many participants can take part per session. The fees for instrument usage and for training can be found on the BMCU homepage under the respective instruments.

Industry and External Users: The company or institution will have to sign a similar agreement and will be offered the services at commercially available list prices or at full cost basis for each of the respective instruments. Companies will also be billed for consumption of running materials on a per sample basis.

During heavy occupancy time periods, for any instruments within BMCU, internal users will be prioritized over external users.

Invoices:

Invoices from BMCU are prepared twice every year. The first period between January – July, and the second from August – December. If your bill does not exceed 10 000 SEK during the first period, it will be transferred to the second period and invoiced then.

The group leader will be notified as soon as its facility usage exceeds 25 000 SEK, to avoid financial surprises. Discounts for high usage are provided, such discounts are instrument specific and based on the annual costs for each instrument. Contact BMCU for further details.

Contacts:

Instrument responsible persons:

Johan Olofsson (all instruments): johan.olofsson.edlund@umu.se

Hudson Pace (QCM-D & DLS) hudson.pace@umu.se

Farahanaz Ranjbarian (MP) farahnaz.ranjbarian@umu.se

Ikenna Obi (CD) ikenna.obi@umu.se

Lars Backman (Manuel ITC/ DSC) lars.backman@umu.se

Birendra Singh (NTA) birendra.singh@umu.se

2. SAMPLES/ HAZARDOUS MATERIALS:

Users must communicate to the BMCU staff if their samples are toxic or dangerous and require any specific handling. The Principal Investigator of the project is responsible for assuring that the analysis can be performed according to the Biosafety level (BSL) of the room where the instrument is located.

3. COMPUTERS AND DATA STORAGE:

Users are responsible for securing the long-term storage of their own data. The facility does not take any responsibility for lost files due to technical problems with the computer/hard disks.

Do not download/upload programs or files onto BMCU computers. Users who do not comply with this rule may see their facility usage restricted. BMCU computers are not to be used for any purpose other than data acquisition or analysis. BMCU computers are regularly cleaned up; we will reach out to active users 1 month before wiping data on any of the computers.

Some instruments will have external software keys and licenses provided to users after introduction. These are for users only and should not be shared outside of the user's research group.

4. ACKNOWLEDGEMENTS/CO-AUTHORSHIP POLICY:

Investigators are requested to recognize the role of BMCU in producing data for publication in the acknowledgement section of the manuscript. This will enable us to demonstrate our importance and ultimately help secure additional equipment and funding critical for meeting the needs of our users.

- Recommended acknowledgement: *"We acknowledge BioMolecular Interactions and Characterization Umeå at Umeå university"*.

We would also appreciate it if you could acknowledge BMCU's contribution in your oral presentations.

We ask that the authors or Principal Investigator submit a copy of the bibliographic reference of the publication involving BMCU for our records.

Co-authorship for staff within BMCU may be requested in the following instances:

- Significant intellectual contribution to experimental design.
- Extensive analysis and/or interpretation of data.
- Extensive preparation of data for the purpose of publication.

Authorship agreements are made prior to initiation of work by the BMCU staff in discussions with the director of BMCU, BMCU staff and the users. BMCU staff cannot be included as an

author without the opportunity to review the manuscript prior to publication.

5. BMCU REPORT:

BMCU presents an annual report to KBC which reflects the current use of the facility in terms of number of projects, users and publications and presents the budget for the coming year. BMCU also provides information about courses, workshops, and teaching.