

Proteomics and Metabolomics Facility

Policies and Procedures Manual

**Center for Biotechnology
University of Nebraska – Lincoln**

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- 1. Policy Statement** – The primary aim of the PMF is to provide high quality service and collaborative work in the fields of Proteomics and Metabolomics to support scientists and students within our University community and around the world. Through this we strive to advance world-class research, support grant proposals, assist in the education of future scientists and support economic and scientific advancements. We offer both Full-Service and Self-Service options to meet the unique needs, time requirements and budgets of our users. Our outreach and education program includes workshops, seminars and courses. All of the research work is conducted at the University of Nebraska – Lincoln campus and abide by all of the rules and restrictions of the University, local, state and federal governments and their agencies.
- 2. Reason for Policy and Procedures Manual** – The PMF Policies and Procedures document was created as a reference for users, outlining our facility use guidelines and expectations. Our facility utilizes consistent operational practices to ensure compliance with regulations imposed on our facility, and to simplify our work process. We ask that all users review this document to ensure awareness and compliance with the rules and regulations being agreed to as part of using the PMF.

3. Related Documents

Board of Regents Safety Policy

<https://ehs.unl.edu/documents/safetypolicy.pdf>

UNL Conflict of Interest in Research Policy

<https://unl.app.box.com/s/0oetflqlqkn9io8yda871gibuezwgco>

University of Nebraska Board of Regents Policies

<https://nebraska.edu/-/media/unca/docs/offices-and-policies/policies/board-governing-documents/board-of-regents-policies.pdf?la=en>

EHS SOPs

<https://ehs.unl.edu/sop>

- 4. PMF Publication Acknowledgement** – Users of our facility, whether Full Service or Self-Service, are expected to provide adequate acknowledgement of the assistance that we provided in their research. It is assumed that our facility will be mentioned or acknowledged in the thank you section of a research paper. At times when significant contributions to the research are made by members of our staff, such as method development or other collaborative activities, co-authorship should be granted to the PMF staff members responsible for the assistance. Please review the guidelines available at <https://abrf.org/authorship-guidelines>.
- 5. Use of the Proteomics and Metabolomics Facility** – The purpose of the facility is to provide users access to a variety of equipment and expertise in Proteomics and Metabolomics Research. The use of the Full-Service Platform requires prior consultation with the PMF Director. The Self-Service Platform is available to anyone, with priority given to NU users, who has received training by PMF staff. Academic and Industry users may be allowed access to the facility's equipment in special circumstances.
- 6. Qualified User Categories**
 - Full Service Users** – Defined as users that submit samples for processing, analysis, and reporting by PMF staff members.

Self Service Users – Defined as users seeking to be trained to use facility equipment to run samples and complete data analysis without assistance from PMF staff members.

Internal Users – Defined as users belonging to one of the University of Nebraska campuses, including UNL, UNO, UNK, UNMC and all University affiliated entities.

Academic Users – Defined as users belonging to an Academic Institution, including an institution of high education like a college or university, a public laboratory or department, and any not for profit group, such as hospitals.

Industry Users – Defined as users belonging to a private sector, for profit company or entity where the intended goal of the research is to advance a profit seeking venture.

7. Full Service User Information

A. Sample Submission

- i. Submission Request** – Users interested in submitting samples are asked to contact the direct or staff members to discuss the project in order to confirm the best protocol to use for their desired outcome. It will be determined if a customized method is required and becomes a collaborative project. After approval of the protocol and approach to use, users can start the submission process by filling out a PMF Sample Submission Request Form found at our website (<https://biotech.unl.edu/proteomics-and-metabolomics#tab2A>). Attachments are encouraged. Samples should not be physically sent to our facility until we have reviewed your submission information and approved your request.
- ii. Submission Approval** – Upon receipt of a submission form, one of our staff members will review the submission to ensure we have all of the information needed to process the samples. Within 24 business hours, the user will receive an approval email asking them to send their samples. In this email, there will also be a link to a form where users can confirm the number of samples being shipped and give more details on their delivery method, including date, delivery method, tracking number, or time of deliver for hand-delivered items.

If the project was not discussed prior to submission, the submission will not be approved. A staff member will contact the user with questions or information regarding the project before the sample submission is approved.
- iii. Sample Preparation for Submission** – The samples must be submitted in the format that was agreed upon during the initial discussion with the facility Director or Assistant Director. For samples submitted for standard metabolomics protocols, [Metabolomics Sample Prep](#) guidelines are provided. If extra time is required for us to process the samples because the guidelines were not followed, an extra cost will be applied.
- iv. Sample Labeling** – Samples should be submitted with the sample name (or a shorthand name) and the user's initials visible. Do not use stickers but rather a permanent marker. A list of sample names must be submitted with samples.
- v. Shipping Samples** – Users must receive sample submission approval prior to shipping samples to the PMF. Any samples received prior to approval will be stored but will not be processed until approval is complete. Once approved, users will be instructed to

continue with shipping and asked to update shipping information via a form sent by email, including providing tracking # and an estimated delivery date.

UPS and FedEx can be used for shipping, however for international shipping, we ask users NOT to use FedEx. Users should ship using the appropriate packaging, including shipping on dry ice if needed and in a sturdy container, and should ship using the fastest delivery method possible to ensure samples getting to our facility without damage or thawing. If samples are received damaged, thawed or otherwise compromised, a staff member will contact the user for further instructions, but we are not to be held responsible. All packages will be received and signed for by our receiving department. A staff member will notify you upon receipt of your samples.

Shipping Address:

Sophie Alvarez or Mike Naldrett
UNL E-119 Beadle Center
1901 Vine St
Lincoln, NE 68588

- vi. **Dropping Off Samples** – Users must receive sample submission approval prior to dropping off samples to the PMF. Any samples received prior to approval will be stored but will not be processed until approval is complete. Once approved, users will be instructed to continue with dropping off and asked to update delivery date and time information via a form sent by email. Upon indicating their preferred delivery date and time, users should wait to bring the samples until they have received a confirmation email with instructions on where to bring them and what staff member will be receiving them. Users attempting to drop off samples without confirming the date and time with a staff member may have to wait for assistance or may have to return at another time. Users can either leave containers with staff upon dropping off, or they can ask staff that their containers be returned.

Covid-19 Note: During the pandemic, users dropping off samples must contact a PMF staff member in advance. A box with dry ice will be set outside of lab E139 for users to drop off samples. Once samples are dropped off, users should email staff members to alert them.

- B. **Customized or Collaborative Project Plan** – Users wishing to have a customized project or collaborative project done should set up a consultation by emailing the PMF director, Sophie Alvarez (salvarez@unl.edu). The consultation, which can be completed in person or via phone/email when necessary, is to determine what outcome the user is looking for and whether our facility is able to help advance their research goals. Once a plan is in place, the user will be given a quote outlining costs, including materials needed, time spent on method development, etc. Upon agreement to the quote, the user will be asked to complete the PMF Sample Submission Form found on our website (<https://biotech.unl.edu/proteomics-and-metabolomics#tab2A>). Letters of support for grant proposal are available upon request.

Covid-19 Note: During the pandemic, in-person meeting are suspended. Any user requesting for a meeting will be done using Zoom.

- C. Sample Storage** – Upon receipt, samples will be stored at the temperature required for keeping the sample viable. Gel bands and agarose beads are kept at -20°C. All samples received on dry ice will be stored at -80°C. If other samples require unique storage conditions, please clarify this need in the “Additional Information” section of the sample submission form. Our facility is equip with backup freezer storage space to ensure any disruptions to our primary storage would not cause loss of any samples. For information on length of storage of samples after processing is complete, please see section Sample Return or Disposal.
- D. Cancellation Process** – Users are able to cancel their sample submission request at any time without charge prior to shipping or dropping off samples. Once samples are received at our facility, users may request a cancellation, but there may be a charge depending on whether processing of the samples has already started. If we have received samples but have not begun processing, we will either dispose of the samples or return the samples using a customer provided pre-paid shipping label or by the user picking up the samples directly from the lab..
- E. Sample Hold Requests** – Users may request that their project be put on hold after samples have been received in our lab, but prior to our beginning processing. We will hold samples for up to 6 months. After that time, we will contact the user to determine whether it would be best to return or dispose of the samples.
- F. Sample Processing Time** – The processing time for samples is dependent on service requested, the number of samples submitted, and samples already in the queue. A customized project, requiring standard gathering, method development, troubleshooting, etc. will take a longer period of time to complete. Similarly, a project with a very large number of samples will require additional time. If samples are submitted before the UNL holiday shutdown, expect an additional delay of 2 weeks. Typically, metabolite projects with a sample number of 2-24 and using a standardized protocol has a turnaround of two weeks.
- If a project needs to be rushed and completed by a certain date, it is possible to get a faster turnaround time for an additional charge. Charges will be three times the standard cost for internal users and five times the standard cost for external users.
- G. Data Reporting** – Staff members from the PMF will send out final reports to users at the email provided in their submission form. The format of the files differs depending on the service requested, but it is provided in a readable format (excel, pdf, sf3) for the user. If the user has any questions regarding data, we are able to assist by email. If any reprocessing is required because some information was not provided during the submission, then an additional charge will be added. Users are expected to archive reports upon receipt. If raw files are required, they need to be requested. A box link will have to be provided as raw files are larger and can't be sent by email.
- H. Data Archiving** – The raw files, meta data and reports are saved and kept in a server for 10 years. After 10 years, the files will be deleted.
- I. Sample Return or Disposal** – Upon receipt of the report, users have up to 6 months to request remaining sample material be returned. To request samples be returned, users should provide us with access to a prepaid shipping label. Up until that point, samples will continue to be stored in a stable environment, most often a -80 freezer. After that point, samples may be disposed of by

PMF staff if necessary. Some services require the use of all sample material, in which case nothing will be available to return.

J. Payment for Service

- i. User Fees** – PMF user fees are based on the fee schedule available to view on our website (URL). Fees are tiered based on user type due to grants providing subsidies for Internal users only. These fees are reassessed each year and any changes are effective for samples billed after July 1 of that year. Samples submitted for services listed on the website are charged using a flat rate per sample. For samples that require customized methods and for large projects, fees are based on instrument and personnel time. See below for more information on obtaining a quote.

Upon submitting samples to the PMF, users agree to accept liability for all applicable service fees associated with their project. If an added step or different approach is required while processing the samples, PMF will notify the user in advance to agree with the change and the new cost. To avoid being charged extra for our standard services, we ask users follow our guidelines outlining how we expect samples to be submitted and address any questions with us before submitting samples.

In the event that an experiment is unsuccessful for whatever reason, the determination whether to charge the use fee will be based on whether the outcome was caused by a PMF staff member or by user error. In the case where it was the fault of a PMF staff member, such as a lost sample, an error in preparation, etc. users will not be charged. In the case where it was the fault of the user, such as improper pre-submission sample preparation or submitting an incorrect sample, the charges will still apply for all work completed.

- ii. Invoicing** – Full Service users will be invoiced at the beginning of the calendar month following the receipt of their final report. Internal users will have the funds directly withdrawn from their cost object accounts via internal transfer, and must request a copy of the invoice if they would like one. Academic and Industry users will be emailed an invoice. Questions about invoices can be directed to our facility via email.
- iii. Payment Policy** – Users are expected to pay the invoice promptly and in full. Internal users will have the funds directly withdrawn from their cost object accounts via internal transfer. Academic and Industry users are asked to pay via check, remitting payment to the address listed at the bottom of the invoice, or via credit card using the web address listed on the invoice. Credit card payments will incur an additional fee added at the time of payment. Invoices will be resent every other month until payment is made. Users who have outstanding balances over 6 months will not be able to have future samples processed until payment is made.
- iv. Quotes** – For customers wishing to request a quote, please email the facility Director, Sophie Alvarez (s-alvarez@unl.edu). Quotes are offered primarily for users submitting samples for customized projects or large projects. Quotes will be made as accurately as possible and will be adhered to upon invoicing unless the customer is notified of additional charges.

8. Self-Service User Information

A. Use of Core Instruments – At the UNL Proteomics and Metabolomics Facility, we offer our users the opportunity to access our facility instrumentation for self-service work as a more cost effective alternative to our full-service offerings, and to give an opportunity to get training on state-of-the-art equipment. To become a self-service user, or to start a new project, a consultation meeting with the PMF director is required to discuss the scope and feasibility of the intended project. The user will be expected to complete safety training, instrument training or familiarization based on user's background and successfully pass a proficiency test. Users will need to follow the approved method agreed to during training, and get any changes approved by a staff member. Users will be expected to book time on the instrument by contacting a staff member in advance to check on instrument availability. Upon completing work, users are required to log the number of hours of instrument usage and provide a cost object number for billing. Please refer to the instrument useage policy for additional information on what material is required and cost. (<https://biotech.unl.edu/proteomics-and-metabolomics#tab2B>)

B. Instruments Available for Self-Service Use – Self-Service users who have been properly trained by one of our staff may access the following Mass Spec machines: Sciex QTRAP 6500+ mass spectrometer with SelexION+ ion mobility coupled to Shimadzu Nexera II UHPLC, Agilent 1290 Infinity II UPLC and Agilent GC-MS 5977A. We are currently not allowing self-service users to access our Thermo Q-Exactive – High Field (QE-HF) coupled to Dionex U3000 nanoRSLC.

Please see our website <https://biotech.unl.edu/proteomics-and-metabolomics#tab4> for additional details on these instruments.

C. Reserving Time on Facility Instruments

- i. Reservation Process** – Contact a PMF staff member to book time on an instrument. . PMF staff will work with users to accommodate their needs as best as possible for their desired day and time. Reservations are scheduled on a first-come first-serve basis and users are expected to only reserve times that they will need. The earlier the reservation is made, the better the availability will be. The facility reserves the right to reschedule in cases where the instrument is down or full service projects are delayed and require more time on the instrument to be completed.
- ii. Cancellation Process** – Please give 48 hours notice in the case of cancellation.
- iii. Hours of Availability** –Hours of availability run M-F, 8 AM – 5:00 PM. Users will not be allowed to stay late unless they have prior approval from PMF staff, although samples may be left to run overnight.
- iv. Need for Extended Hours** – If a user underestimates the amount of time needed for their project, they should notify a staff member immediately. They may be allowed to extend their reservation time, although there is no guarantee.

D. Self-Service User Training

- i. EHS Training**

- a. **EHS Policy Overview** - It is a priority of the PMF to maintain a safe and clean working environment. We require all staff and self-service users to be properly trained and to comply with all applicable federal, state and local regulations and to university policies. PMF works closely with UNL Environmental Health and Safety to ensure that all users are appropriately trained and prepared for the work they will be doing in our facility, and no staff or user will be allowed to do any tasks prior to this training being complete. Our staff reserves the right to conduct internal safety audits whenever necessary. Any attempts to circumvent safety measures will result in corrective action and possibly result in a user losing access to our facility.
- b. **Required EHS Training** – All staff and self-service users must complete the following training per EHS guidelines. If the individual has already completed this training, they will need to provide our facility with documentation. Users will need to retake this training periodically as required by EHS.

Core - Injury and Illness Prevention Plan (IIPP)

Core - Emergency Preparedness Training

Core - Chemical Safety Training

Covid 19 Awareness

ii. Instrument Training

- a. **Individual Training** – Users may receive training from facility staff (\$55/hour) or other approved users in their group. If the training is done by a staff member, assistance with method development based on information provided by users will be given. The time required for the individual training will depend on the user's background. If the user is already proficient with using the equipment, familiarization time and assessment will still be required.
- b. **Group Training** – The facility offers group training at scheduled times throughout the year for each of our instruments. Users can sign up for one of these trainings by contacting a staff member. These training sessions are limited in size to 4 people and walk users through the process of running samples on one of our instruments. Users will be able to ask questions and gain hands on experience. This option is not as customizable as our individual training option but will guarantee the acquisition of a certain level of competence. The completion of this training will be offered soon as digital badging.
- c. **Assessment and Competency** – Users may not operate an instrument alone until they have passed a thorough check-off procedure with facility staff. Those failing to pass will require further training and a re-test. A self-service user must be able to set-up the instrument alone and troubleshoot any problems related to the set-up (leaks or blockage) and software/method. Only if a problem arises from hardware failure will the Facility be responsible to fix it at no cost to the user.

- d. **New Procedure or New Project** – Users wishing to switch methods or start a new project must notify a staff member before making any changes (including new buffers, methods, etc.). Users may be able to implement changes or start a new project without additional training subject to the approval of the director after a consultation has been completed. Other users may need to complete additional training with staff.
- e. **Data Analysis Training** – Users can receive training for data analysis. Once trained, users will not be charged for time spent on the computer analyzing data.

E. Laboratory Use Expectations

- i. **PPE** – Staff and Self-Service users are expected to don appropriate PPE when using our facility. At a minimum, users should wear gloves and lab coats when working with samples and chemicals. Gloves will be provided by our facility. Self-Service users are expected to supply their own lab coat. Goggles are available upon request.

Covid-19 Note: During the pandemic, all users are required to wear a mask and gloves while working in the lab. Users have to provide their own masks.
- ii. **Provided Space** –Users will have access to a lab bench space, a sink, and space in a -20°C freezer located in room E118. Users are expected to keep their work within these spaces.
- iii. **Materials and Small Equipment Available**– They are limited to gloves, pipettes, pipette tips, 1.5 mL and 2.0 mL tubes, vortex, centrifuge, incubator water bath, trays, ice and ice bucket. These are available in case users need to re-prepare some samples. They are not meant to be used for full sample preparation.
- iv. **User Supplied Materials** – Users are asked to provide their own supplies during their time of use on the instruments. This includes a lab coat, HPLC grade solvents and buffers, buffer bottles, HPLC vials, and columns.
- v. **Completion Tasks – (i.e. clean-up, disposal, etc.)**
 - a. **Clean Up** – Users are expected to leave the instrument and facility, including lab space, in the condition in which they found them.
 - b. **Hardware Changes** –All hardware must be set back to the original starting configuration.
 - c. **Waste Container Maintenance** – When using the instrument, users should indicate the compound names and volumes of the fluids used on the sheet located on the waste container. If the bottle is close to being $\frac{3}{4}$ full before you start, please notify a facility staff member to switch with an empty bottle.
 - d. **Usage Log** – Users must fill out the usage log upon completing their time on the instrument. It is imperative that users complete the cost object number and the total number of hours spent on the instrument which will be used for billing purposes. The total number of hours includes time to set-up the column and

mobile phases, any blanks and standards runs, and time used for cleaning column and to change hardware back to default. It is the time from start to finish. It also means any time spent troubleshooting on the method or instrument.

- e. **File Backup and Storage** – Users are responsible for backing up and storing their data and method files. Since the instrument computers are not attached to the internet and does not have an anti-virus installed, users should either use a brand new flash drive to get their files, or ask a staff member to scan their flash drive for viruses prior to using it.

F. Help or Error Requests During Instrument Use – Staff will be available to field any help or error requests during the time that a self-service user is in the lab. If the issue is the result of instrument malfunction not resulting from user error, the user will not be responsible for the cost of assistance. If the issue is the results of user error, such as accidentally running air through the lines, or is a troubleshooting tasks covered in training, such as identifying leaks or a blocked column, then the user will be responsible for the cost of assistance. If the issue is due to troubleshooting of the method itself, the user will be liable for the personnel time. Users should never hesitate to ask if they are unsure about something. Staff will indicate billable time on the instrument log sheet.

Covid-19 Note: During the pandemic, we are attempting to do all communication with users via electronically when possible. If you have a problem, please email a staff member for assistance or call the PMF office for assistance.

G. Instrument Damage – Users are responsible for any damages caused to the instrument because of their use and they will incur charges for parts and labor associated with the repair if necessary. Significant damage to the instrument as a result of negligence on the part of the user may result in loss of all self-service privileges.

H. Loss of Use – Users that are unable to abide by the above expectations outlined in the Self-Service Users section of this document may lose self-service privileges. We ask that all users be respectful of our staff, our facility and our time so that we don't have to take such actions.

I. Payment for Service

- i. **User Fees** - PMF user fees are based on the fee schedule available to view on our website. Fees are tiered based on user type due to grants providing subsidies for Internal users only. These fees are reassessed each year and any changes are effective for samples run after July 1 of that year. Self-Service Users are charged using a flat fee for time spent using the instrument and for training time. They are not charged for data analysis.

Upon scheduling and completing training or instrument usage at the PMF, users agree to accept liability for all applicable self-service fees associated with their project. They also agree to any charges incurred as a result of unscheduled training that may take place due to needing assistance during their time on an instrument. To prevent being charged extra for assistance, we suggest users ask good questions and take thorough notes during training and review their notes prior to their instrument time. We do encourage users to ask for assistance when necessary to prevent any damage to an instrument, which may result in charges for damage. Users will be liable for any damage done to the machine that is preventable.

In the event that an experiment is unsuccessful for whatever reason, the user will still be charged for their instrument usage. If the error is due to instrument malfunction, the user will not be charged.

- ii. Invoicing** – Self-Service users will be invoiced at the beginning of the calendar month following their instrument usage. Internal users will have the funds directly withdrawn from their cost object accounts via internal transfer, and must request a copy of the invoice if they would like one. Academic and Industry users will be emailed an invoice. Questions about invoices can be directed to our facility via email.
- iii. Payment Policy** – Users are expected to pay the invoice promptly and in full. Internal users will have the funds directly withdrawn from their cost object accounts via internal transfer. Academic and Industry users are asked to pay via check, remitting payment to the address listed at the bottom of the invoice, or via credit card using the web address listed on the invoice. Credit card payments will incur an additional fee added at the time of payment. Invoices will be resent every other month until payment is made. Users who have outstanding balances over 6 months will not be able to reserve additional time on an instrument until payment is made.