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AIM Scientific Core hours are 8:30am – 5:00pm Monday through Friday.

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Quick-Start Note: Please see section 5.0 for a quick description of how to gain access to the Cores through membership status or via fees; however, please read all sections.

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1.0 Purpose

This Standard Operating Procedures (SOP) document describes the procedures, policies, processes and other supporting information for users to secure access, scheduling and training in the University of New Mexico (UNM) **Autophagy, Inflammation and Metabolism in Disease Center of Biomedical Research Excellence (AIM Center) Autophagy Scientific Core and Inflammation and Metabolism Scientific Core or combined AIM Scientific Core.**

2.0 Vision

The AIM Center will serve biomedical excellence for mentored research on autophagy and its interactions with inflammatory and metabolic processes via faculty development and coherent research programs as part of the mission of the UNM.

3.0 Mission

The **Autophagy Scientific Core and Inflammation and Metabolism Scientific Core or combined AIM Scientific Core** at UNM will serve as an intellectual and technological hub for autophagy and its intersections with inflammation and metabolism in a full spectrum of diseases. AIM Scientific Core will ensure that UNM researchers are at the forefront of autophagy research, and the Core will have greatest possible impact: 1) offering specialized scientific instrumentation/equipment to answer significant research questions related to autophagy; 2) ensuring exceptional service to the research community; 3) supporting mentored PIs (mPIs), junior and senior investigators through multi-year projects and pilots; 4) enhancing the research base in NM with objectives to grow into a nationally and internationally recognized COBRE Autophagy, Inflammation and Metabolism Center and Scientific Core.

The AIM Scientific Core will enable local growth in scientific resources and develop a cadre of excellent faculty while increasing research funding institutionally and statewide. The AIM Scientific Core will facilitate synergy and interface with existing UNM COBREs, Cores, facilities, shared resources at UNM Health Sciences Center (HSC), other New Mexico IDeA centers and the region. This complement to existing facilities without overlaps or duplications will provide an additional hub for new cross-disciplinary collaborations.

The AIM Scientific Core aims to provide exceptional service, cutting-edge and centralized instrumentation and research dedicated to furthering autophagy research. To meet this goal, we have outlined certain guidelines and operating procedures for users and AIM Scientific Core personnel to interact and achieve the goals of research projects and the AIM Center.

4.0 General Information

The AIM Scientific Core is open to all scientists interested in using novel instrumentation to discover mechanisms of autophagy, inflammation and metabolism in health and disease with a strong focus, but not limited to, autophagy-related mechanisms. The AIM Scientific Core is located in the Molecular Genetic and Microbiology Department on UNM HSC campus, 3rd floor Room 382 of Reginald Weber Fitz Hall with the admin office located at Fitz 347. Regular Core hours are 8:30 am – 5:00 pm Monday through Friday, but after-hours access to the Core may be granted for trained users upon request and with the approval of the Technical Director. Core doors are locked from 5:30 pm – 8:00 am.

The Core houses specialized state-of-the-art instrumentation including an Agilent Technologies Seahorse XFe24 Analyzer, Thermo Scientific CellInsight Cx7 High-Content Screening Platform, and Amnis ImageStreamX Mark II Flow Cytometer System for assessment of Autophagy, Inflammation and Metabolism in studies as appropriate. In addition to this SOP, instrument specific SOPs will be provided to all users by Core personnel and all approved SOPs will be located in the Core at all times.

To use the core, users will be asked to give a short presentation to the AIM Center and obtain associate membership (see details below). All users will also need to sign a Memorandum of Understanding (MOU) annually. There is no charge for Core usage in the first year. A fee will be instituted in the future which is to be determined.

5.0 Core Access and Associated Fee Structure

We welcome all scientists from UNM and beyond to access the AIM Scientific Core, instrumentation and join our exciting research environment and network (see below). mPIs, executive committee members and their associated laboratories are granted grandfathered membership and access to the AIM Scientific Core.

A) All AIM members (see below section B describing a simple process of how to become an associate AIM member), may use the AIM Scientific Core at no cost during the first year (April 2018 To September 2019). The free access is expected to continue, but will be assessed on annual basis and changes may be implemented depending on AIM program circumstances and the needs and membership standing.

B) Core access can be obtained through associate membership: To become an associate AIM member, a short presentation to the AIM Center at Tuesday AIM seminars is required, a short written description of the project (1/2 page) plus a biosketch. The CoBRE executive committee then grants approval and associate membership. Before using the core, a detailed experimental plan for the study to be performed in the Core and discussion of the scientific plan with the Core Technical Director and Core Directors is encouraged. Research plans are subject to the AIM Scientific Core Directors review and approval. Please contact Sally Ann Garcia, SAngarcia@salud.unm.edu or John Weaver, JMWeaver@salud.unm.edu for further details.

C) All AIM Scientific Core users, including members, must fill out a MOU for Core services before any studies can be performed in the Core. The MOU will contain the project title and brief description of the project, funding source, effective start date and end date, expected services, method of imbursement and estimation of budget for Core Services. This MOU will be kept on file and renewed annually by the Technical Director. Any necessitated changes to the MOU such as change in method of imbursement should be sent Technical Director promptly so that modifications can be made and delays are avoided.

6.0 Reservations and Scheduling

AIM Scientific Core hours are 8:30 am – 5:00 pm Monday through Friday. After-hours access is available to trained users with permission of the Technical Director.

A Microsoft Outlook Calendar(s) will be established and users will be given access to view open and scheduled times for AIM Scientific Core instruments. **All reservations must be made with the**

Technical Director and MUST BE APPROVED AND CONFIRMED on the Microsoft Outlook Calendar. We anticipate that our instruments will often be fully booked and some instruments will require several hours to perform a study. mPIs have priority access to the Core, while consideration must be given to other users. We allow a maximum reserved block of time of 4 hours either in the morning (before noon) or afternoon (after 1:00 pm) for any single session. If a longer schedule time is needed for your study, please consult the Technical Director so that arrangements can be made. Preferred signups are for 2 - 4 hour blocks of time. If you need a full 4 hours, we ask that users refrain from signing up from 10:00 am – 2:00 pm as this does not leave sufficient time for other users. Instead sign up 8:30 am - 12:00 pm or 1:00 pm - 4:30 pm to be considerate of others' use in the same day. The hour in between will be designated to complete any studies running late from the morning session. Trained users may have after-hours access to instrumentation with prior permission from the Technical Director and usage must be added to Microsoft Outlook Calendar as well. If you have booked the use of a specialized instrumentation, you or a member of group are expected to be present, close by or able to be contacted throughout your reservation. If not, arrangements should be made with the Core personnel. We are aware of the extended times to do several studies, but in any event, a lab representative needs to be present so that any issues are resolved efficiently.

7.0 Missed Reservations or "No Shows"

All reservations for the AIM Scientific Core must be made with and confirmed by the Technical Director on the Microsoft Outlook Calendar. Once a reservation has been made for an instrument, you are expected to show up within 15 minutes of the reserved time. Since several studies may take hours to complete, we urge you to show up before your scheduled time. A "no show" is defined as not arriving within the first 15 minutes of the scheduled time. Efforts will be made to contact you if possible. A reservation can be cancelled or changed any time before, or within the first 15 minutes, of the reserved time if needed and time is available. Call or email the Technical Director to cancel or change your reservation and confirm the change on the Microsoft Outlook Calendar so that all users and Core Personnel are updated. We are aware that unexpected events do occur; however, if you are a "no show" access may be limited as determined on a case-by-case basis by the Directors and Core personnel.

8.0 Instrumentation Training

Training is REQUIRED to use the AIM Scientific Core and specialized instrumentation (Agilent Technologies Seahorse XFe24 Analyzer, Thermo Scientific CellInsight Cx7 High-Content Screening Platform, and Amnis ImageStreamX Mark II Flow Cytometer System) without Core personnel. Training must be received from our Core personnel and you may not receive training from a member of another lab that uses our equipment to gain access. If a new user of the Core has previous experience or training on the same or similar models, they will still need to have a training session given by Core personnel; however, the training session may be shortened due to the level of experience. The Technical Director must confirm your training before use of the Core and instrumentation. Core personnel are also available to consult and assist with experimental study design to: 1) maximize reliability of experimental results and analysis; 2) outline a plan of all the elements, conditions, causation, controls and variability in the study; 3) generate good statistical data; and 4) avoid pitfalls. Reservations for training and consultation will follow the same protocol for reservations and scheduling of Core services.

While we strongly advocate and support users performing their studies on our user friendly instrumentation, requests to process samples by our Core personnel will be an option when this service is in place. Core personnel must be given the request and experimental design, in writing, as specific information will be needed for Core personnel to run samples correctly and efficiently. Again,

Core personnel are available to consult and assist with experimental design of studies. The hourly rate for Core personnel to run samples will be governed by the Core Fee structure as “UNM-Affiliated Hourly Core Rate with Core Personnel,” when implemented. Core personnel must approve feasibility of the study and samples before experiments can begin. AIM Scientific Core will not be responsible for insufficient analysis due to improper experiment design or sample preparation and will make every effort to work with the user to ensure validity and integrity of data. Scheduling of such studies will follow the same protocol for reservations and scheduling for Core services.

9.0 Digital and Image Data Storage and Retention

Each user of the AIM Scientific Core is responsible for the capture and backup of their own data from the instrumentation. Additionally, users and user groups are responsible for the media used to backup the data. The Core does not provide flash drives or other means to back up; however, plans for secure server data backup for selected instrumentation may be incorporated in the future. Research images and data captured by Agilent Technologies Seahorse XFe24 Analyzer, Thermo Scientific CellInsight Cx7 High-Content Screening Platform, and Amnis ImageStreamX Mark II Flow Cytometer System can be downloaded by USB/flash drive in most circumstances. It is encouraged that Agilent Technologies Seahorse XFe24 Analyzer and Amnis ImageStreamX Mark II Flow Cytometer System data is downloaded to USB/flash drive as analysis can be performed on a personal workstation after downloading the software from Agilent Technologies or Amnis. In some cases, data can be exported to Microsoft Excel or comparable program(s).

Data will be saved to the Agilent Technologies Seahorse XFe24 Analyzer and Amnis ImageStreamX Mark II Flow Cytometer System workstations as space permits, but the workstation’s main function is the operation of Agilent Technologies Seahorse XFe24 Analyzer and the Amnis ImageStreamX Mark II Flow Cytometer System instruments. Large amounts of data are generated and stored for the Thermo Scientific CellInsight Cx7 High-Content Screening Platform. Thus, data may remain on the hard drive or server as space allows after capture. The server may also be available for Amnis ImageStreamX Mark II Flow Cytometer System data. In addition, users may have access to a HSC shared drive space for storage of data. We encourage all users to store their own data but the facility will store data as we can for backup purposes. Don’t hesitate to address any concerns with storage of your data to Core personnel.

Important: Please do not download or install any software on AIM Scientific Core workstations as they are specifically designated to operate the instrumentation and compromise of the workstations will affect all Core users. Additionally, while some workstations may be connected to the internet, please do not attempt to browse the internet on Core workstations for any purpose unless directed to do so by Core Personnel. The Core will make every effort to retain data according to NIH rigor and reproducibility guidelines as storage constraints permits. However, it is the responsibility of the user to comply with NIH rigor and reproducibility guidelines and establish alternate means of storing and retaining data. If hard-drive space constraints on a Core workstation occurs, Core personnel will work with users to find acceptable solutions to ensure that data is retained, and the user will be notified of any concerns to maintain research integrity. Again, please don’t hesitate to address any questions with Core personnel.

10.0 Acknowledgments of the AIM Scientific Cores

Any work performed in the AIM Scientific Cores or with assistance by Core personnel should be, at a minimum, acknowledged in published work. Please acknowledge the grant support when publishing or presenting images or data obtained from the Cores in manuscripts, abstracts and presentations. A sentence: "XYZ studies were conducted using the Autophagy Inflammation and Metabolism in

Disease CoBRE Scientific Cores Facilities at the University of New Mexico funded by NIH NIGMS P20GM121176", or a simple acknowledgment of funding: "This work was supported by P20GM121176" This is important so that we can continue to provide you with Core service and instrumentation. Inclusion of co-authorship on publications is at the discretion of the user but is encouraged for the Core Personnel member(s) who supported or supplied the work.

11.0 Invoicing and Billing

There will be no charge for use of core equipment in the first year. The fee structures will be instituted in future years, subject to review. Users will be notified well in advance of instituting any fee structure. Fees in the first year will be absorbed by the AIM COBRE grant. Purchase of consumables are the responsibility of individual users.

12.0 Instrument-specific Protocols

Instrument specific SOPs will be provided by the AIM Scientific Core personnel and should be located in the Core at all times. Please review the SOP for the instrumentation that you plan to use for your study and contact the Technical Director or Core personnel if you have any questions or concerns about the instrumentation. These SOPs cover user-operable instruments, specifically the Agilent Technologies Seahorse XFe24 Analyzer, Thermo Scientific CellInsight Cx7 High-Content Screening Platform, and Amnis ImageStream X Mark II Flow Cytometer System, and will outline the necessary step-by-step instructions for users to carry out studies correctly, achieve efficiency, obtain quality data and results, and comply with safety as required by UNM and the Core. The Core Directors, the Technical Director and Core personnel are responsible for maintaining quality control, quality assurance and maintenance of all the instruments. Still, it is the responsibility of all users to follow the protocols outlined for the instruments to maintain research integrity for all users.

Users of all specialized instrumentation are expected to use ONLY the consumables listed on our written protocols as the instruments require specific equipment to function properly. Failure to use the appropriate consumables may result in damage to the instrumentation. Should this occur, your lab will be charged for repair costs. All consumables must be provided by the user unless you receive prior approval from Core personnel.

Again, copies of SOPs are available for any instrumentation housed in the Core and any issues should be reported to Core personnel immediately.