Targeted Pilot Project Award in Autophagy
Request for Applications

Required Pilot Pre-Proposal Due: January 13, 2025
Invited Full Application Due: February 28, 2025

Introduction

The UNM Autophagy, Inflammation, and Metabolism (AIM) Center of Biological Research Excellence (CoBRE) is offering pilot awards, in conjunction with the Southwest Center for Advancing Clinical and Translational Innovations (SW CACTI) (previously the Clinical and Translational Science Center-CTSC) of the University of New Mexico (UNM) Health Sciences Center (HSC) in support of their missions to advance clinical and translational investigation into the role of autophagy in disease are soliciting applications from all HSC faculty members—senior as well as junior investigators—for pilot projects that will exemplify the AIM mission to stimulate autophagy-based research and utilization of the AIM research cores within UNM, as well as SW CACTI mission of developing clinical and translational research, to promote and support the overall "bench to bedside to community and practice and back" goal of the National Institutes of Health.

The purpose of this RFA is to support pilot projects that utilize AIM and the SW CACTI infrastructure to ***produce preliminary data for competitive NIH grant proposals*** in clinical and translational science. Translational Science goals must be highly methodological and demonstrate feasible and generalizable solutions to CTS problems. All awards are dependent upon the availability of SW CACTI funds.

UNM HSC faculty members interested in applying for pilot funding are asked to submit **Pilot Pre-Proposals by January 13th, 2025, at 12:00 pm**. Investigators with highly qualified pre-proposals will be invited to submit a full research proposal on January 28, 2025. Instructions on how to prepare a full research proposal (elements listed below) will be provided by email with the invitation to participate. Full proposals will be due by noon on **February 28th, 2025.** Pilot Pre-Proposals are limited to 2 pages and should include the following:

- The pre-proposal should include a title, a description of objectives/aims, the most innovative and novel aspects of your proposed translational science project, a description of how the project can be completed in 12 months and must directly address how the project meets the definition of Translational Science.

Additional documents (not included in the 2-page limit):

- NIH formatted Bio sketch for the PI, and a letter of support from your Department Chair/Dean noting your qualifications, availability of protected time, and the potential impact of your work.

Pilot applications for this announcement will exemplify the SW CACTI's mission of developing clinical and translational science to promote and support the goal of the National Institutes of Health. To support this initiative, we will award grants ranging from **$10,000 - $40,000** to be spent between June 1, 2025, through May 31, 2025. Allowable costs include the potential for 5% FTE allocation for clinical faculty salary with Departmental match. Applicants are expected to "right size" their budgets and scope of projects.

As part of our SW CACTI award, the NIH initiative seeks to accelerate the movement of clinical science into healthcare practice. Specifically, this effort focuses on advancing CTS by promoting the development, demonstration, and dissemination of innovative practices that improve the

translation of research into medical practice. Additionally, it emphasizes the inclusion of underserved populations across the human lifespan, fostering partnerships and collaborations to address health disparities, and ensuring that the benefits of translational science are accessible to all communities.

Framework for All SW CACTI Pilot Awards

With this pilot funding cycle, the UNM SW CACTI will sharpen its focus towards funding Translational Science projects. CTS projects generally address the science or operational principles of the translational process that transforms validated research observations from biomedical, clinical, and behavioral studies into interventions. CTS project may include those designed to: 1) accelerate change in clinical practice, 2) improve the health of communities, 3) create health policies that mitigate the impacts of extreme poverty and 4) improve the overall health of our communities. **As such**, **pilot projects with the sole emphasis on Translational Research will not be funded.**

This RFA contains references and links (below) to resources to help investigators understand how to adapt to this new framework and we offer educational opportunities, consultation, and support to help you make the transition.

Translational Science

NCATS defines Translational Science as "*the field of investigation focused on understanding the scientific and operational principles underlying each step of the translational process." The goal of Translational Science is to develop generalizable principles to accelerate translational research" thereby turning "science into health."*

Projects are intended to: (1) explore innovative new leads or new directions; (2) stimulate team approaches that incorporate less traditional researchers and (3) provide initial support to establish proof of concept. Projects must be feasible within the proposed timeframe, have high methodological and scientific quality, and answer important scientific questions.

NCATS Definitions:

- ***Translation:*** The process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and communities – from diagnostics, preventions, and treatments to medical procedures and behavioral changes.
- ***Translational Research:*** The endeavor to traverse a particular step of the translational process for a particular target or disease.
- ***Translational Science:*** The field of investigation focused on advancing the scientific and operational principles underlying each step of the translational process.
- **Learn more about Translational Science:**
  https://ascpt.onlinelibrary.wiley.com/doi/10.1111/cts.13055
  https://ncats.nih.gov/training-education/translational-science-principles
  A New Resource from NCATS: The NCATS Translational Science Principles | clic (clic-ctsa.org)
- **UNM HSC/UARIZONA** SW CACTI Translational Science Panel Video

NIH Definition of Clinical Research: Research with human subjects that is:

1) Patient-oriented research. Research conducted with human subjects (or on material of human origin such as tissues, specimens, and cognitive phenomena) for which an investigator (or colleague) directly interacts with human subjects. It includes:

(a) mechanisms of human disease
(b) therapeutic interventions
(c) clinical trials
(d) development of new technologies

Excluded from this definition are in vitro studies that utilize human tissues that cannot be linked to a living individual.

2) Epidemiological and behavioral studies
3) Outcomes research and health services research

NIH Definition of Clinical Trial: A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes.

NIH Definition of Human Subjects Research: According to 45 CFR 46 Link to Non-U.S. Government Site - Click for Disclaimer, a human subject is "a living individual about whom an investigator (whether professional or student) conducting research:

- Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or
- Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.

NIH Definition of special populations: Groups who have traditionally been underrepresented in health research or excluded altogether For example, pediatric populations, older adults, people with disabilities and/or rare disorders, underrepresented racial/ethnic and/or sexual and gender minorities, rural populations or populations with low socio-economic status.

NCATS wants the development of methods, resources, scaffolds, procedures that will facilitate translational science. Thus, potential topics in ***Translational Science*** include[1]:

- Understanding of translation
- Translational science
- Target qualification*
- De-risking undruggable
- Targets/untreatable diseases*
- Predictive efficacy and predictive toxicology
- New therapeutic modalities; repurposing*
- Biomarker qualification
- Data interoperability and transparency*
- Registries and natural history studies*
- Clinical diagnostic and outcome criteria
- Patient/community engagement
- Clinical trial participant recruitment and diversity*
- Single/harmonized IRBs
- Clinical trial operational efficiency
- Clinical trial networks
- Adaptive clinical trial designs
- Electronic Health Records for research
- Shortening time of intervention adoption*
- Access and adherence
- Pharmacoepidemiologic studies and comparative effectiveness trials*
- Integration of project management
- Incentives/credit for team science
- Incentives/credit for health improvements
- Education/Training (scientific and cultural)
- Collaborative structures, agreements, IP management

Major rate-limiting translational problems are the focus of Translational Science. *Identified in the Drug Development Map (18, Supplemental Figure SB) as being particularly prone to failure, delay in progression, and/or high cost and therefore high priority for innovation. IP, intellectual property; IRB, institutional review board 1 Austin, CP, **Opportunities and challenges in translational science,** Clin Transl Sci. 2021;14:1629–1647

Application Deadline, Notice of Awards and Funding Cycle

Application Release Date: December 13, 2024
Pilot Pre-proposal to SW CACTI: January 13, 2025, at 12:00 pm
SW CACTI invitation to submit full application: January 28, 2025
Full Application Deadline: February 28, 2025, by 12 noon
IRB Submission Deadline: February 28, 2025
Notice of Intent to Fund/Decline: April 11, 2025
IRB Approval Deadline for NIH Review: April 11, 2025
Notice of Award: May 19, 2025
Funding Cycle: June 1, 2025, through May 31, 2026

Eligibility and Project Requirements

- **Investigators must submit a Pilot Pre-proposal. Only invited investigators are allowed to submit full proposals for pilot funding.** Email the Pilot Pre-proposal to Daron Vigil-Scott, Dvigilscott@salud.unm.edu .
- Principal Investigators for these pilot awards *must* have a primary appointment as UNM HSC faculty (junior or senior investigators). Any other investigator who cannot submit the grants emanating from this pilot award through UNM HSC is not eligible to receive this award.
- All investigators selected to receive funding and their team members are encouraged to complete the SW CACTI GCP Training Course within 6 months of receiving the award.
- All investigators selected to receive funding will be expected to submit progress reports on go/no-go milestones monthly to ensure continued funding.
- All investigators with human subjects selected to receive funding will be expected to submit a monthly recruitment/enrollment report.
- All investigators selected to receive funding will be expected to submit a Final Progress Report at the end of the funded project and an additional report one year later, detailing progress to date, expenditures, and all submitted publications and grant applications (pending or funded) relating to the pilot project.
- Should investigators receive NIH funding during the Pilot period of performance, the investigator must ensure there is no budgetary overlap.
- Funds may not be used to provide interim support for active projects or to extend previously conducted work.

Please note: *All funds not spent by the end date of the Pilot Project Award* (May 31, 2026) *will be returned to SW CACTI and NIH.* ***No extensions will be granted****. Applicants are eligible for no more than a total of two SW CACTI pilot awards, after which they need to demonstrate that they have received a score for an extramural grant submission before they will be considered for another SW CACTI pilot award.*

Presentations and Publications

- Awardees are expected to publish their findings in scholarly peer-reviewed journals and present their research at professional meetings.
- All publications, grants, and presentations resulting from research funded by the SW CACTI or using SW CACTI resources should link and cite the SW CACTI as a contributing source of support and indicate the SW CACTI's citation as follows: "This project was supported by the Autophagy, Inflammation and Metabolism Center for Biomedical Research Excellence through Grant Number GM053396 and the National Center for

Advancing Translational Sciences for the National Institutes of Health through Grant Number (Pending New Grant Number), The University of New Mexico Southwest Center for Advancing Clinical and Translational Innovations."

- Investigators are responsible for linking and citing any journal articles resulting from research funded by this award to the grant in MyNCBI (Pending New Grant Number), Nancy Pandhi/Matthew Campen), and for submitting the publication for a PMCID number and comply with NIH's Open Access policy (different than an automatically assigned PMID) https://publicaccess.nih.gov/

Evaluation Criteria

Successful projects will exemplify the SW CACTI mission of developing clinical and translational science. Applications should be well-written, precise, and succinct. Applications will be subject to both scientific and programmatic review and will receive scientific review by the SW CACTI Review Committee. The following criteria will be used in evaluating these proposals:

- Overall Impact
- Significance
- Investigator (including an evaluation of the status of prior pilot funding awards and the outcomes from those studies)
- Innovation
- Approach (*should include evaluation of approaches to articulated research barriers, demonstration of feasible and generalizable translational science solutions, team science and interdisciplinary collaboration, feasibility of recruitment if human subjects).* These elements must be realistic for the one-year pilot timeframe. ***Studies that incorporate significant utilization of AIM cores (contact: Sharina Desai spdesai@salud.unm.edu) and/or SW CACTI cores will receive priority consideration.***
- Environment
- Utilization of AIM and SW CACTI resources

Additional review considerations will include:

- Alignment with AIM and SW CACTI programmatic goals
- Probability that this project will lead to extramural funding
- Integration of special populations
- "Go/No Go" Milestones (suggested by the investigator)
- Budgetary Considerations
- Regulatory Approvals
- Letters of Support and Commitment
- Aim(s) with strong Translational Science objectives.

Scoring: To emphasize the importance of extramural grant submission and attainment deriving from these pilot awards, each of the first 8 items above will be scored on a 1-9 scale (where 1 is best), and composite scores will then be weighted so that the final overall impact score is determined as follows:

- Innovation: 10%
- Significance: 10%
- Approach, Environment, and Investigator: 30%
- Plan for and probability of extramural funding: 30%
- Utilization of SW CACTI Resources: 20%

Guidance for Studies Enrolling Human Participants

If your project requires recruitment of human participants, please include the following information as part of the Approach section of the application. The review committee will be specifically looking for these details.

- What is the available population for recruitment?
- Is your target enrollment number feasible in the one-year time limit of the pilot award? Is that number based on a power analysis?
- Who will do the recruiting (investigator/PI, coordinator, other team member(s), PCI or CERC)?
- If you plan to use the PCI or CERC, have staff from those services reviewed the project?
- Do you have sufficient protected time for this study separate from other duties?
- Do you have prior experience from other studies recruiting this population?
- When will you enroll your first participant and what percentage of your population is likely to meet the inclusion/exclusion criteria?

Note: The SAGE committee will review every pilot with human participants ***at 1-month intervals*** to assess enrollment progress. Concerns will be directly communicated to PIs by phone and email. Corrective actions may be suggested or taken including assistance and training. Warnings may be issued that pilot funding may be pulled and the study discontinued, unless the PI provides a good rationale that lagging enrollment will catch up with projections.

Budget Guidelines

Utilization of AIM and SW CACTI Core services is strongly encouraged and will be a review consideration. It is important that you schedule a meeting with AIM Director, vderetic@salud.unm.edu, and the SW CACTI Research Navigator at dlsedillo@salud.unm.edu after being invited for a full application. This consultation step is required for planning purposes and to ensure effective use of AIM and SW CACTI Core services utilization for your research proposal.

Responsible budgeting is critical for the 12-month project, and it is common to overestimate what you can accomplish in that limited time frame. Your proposed budget will be reviewed and potentially revised based on Peer Review and Core management feedback. If successfully funded, reallocation of the budget is strongly discouraged. However, consideration will be made for the reallocation of funds within SW CACTI Cores if justified. Prior approval is necessary. SW CACTI resources included in the budget will be covered using a non-refundable voucher program. These funds may not be reallocated to other expenses after the grant has been awarded. ***Rationale for not using AIM or SW CACTI Core services needs to be specifically justified.***

Details of services offered by the two AIM Scientific Cores are as follows:

1. **Autophagy Core (Director: Judy Cannon, PhD JuCannon@salud.unm.edu)**
    - Animal resource: Breeding pairs of autophagy and autophagy-related gene transgenic mice for research in pilot, mPI and main personnel laboratories (IACUC approval needed)
    - Cellomics High Content Microscopy: Quantitative microscopy for autophagy and lipid droplets as well as other intracellular profiles/organelles (e.g. lysosomes, peroxisomes, potentially mitochondria, nuclear translocation etc). Data generated are based on unbiased data collection and represent various numerical parameters (number/cell; area/cell, % overlap, etc.) + statistics on large number of cells.

2. **Inflammation and Metabolism core (Director: Judy Cannon, PhD JuCannon@salud.unm.edu)**
    - Seahorse: Oxidative phosphorylation vs glycolysis on adherent and non-adherent (special gel embedded) cells.
    - Amnis Imaging Flow Cytometer: flow cytometry for intracellular cytokines, other profiles in inflammatory/immune cells, and autophagy measures, etc.

Details of services offered by each Core can be found at each of the following links:

- **Participant Clinical Interactions (PCI):** Offers clinical research support staff, recruitment assistance, clinic space, bionutrition, as well as consultation on protocol development and implementation.
- **Biomedical Informatics:** Offers clinical data warehouse mining, "honest broker" services for access to data from multiple sources, and web-based electronic data capture and survey tools via REDCap.
- **Biostatistics**: The SW CACTI Biostatistics, Epidemiology and Research Design Support (BERD) Core is designed to provide HSC/UARIZONA investigators with expert early consultation and service on all aspects of study design, biostatistics, and basic data management for effective clinical and translational studies. Please note that this service does Not include data collection, data entry, and similar services that are the responsibility of your team.
- **Clinical and Community Research Units:** Provides community engagement and outreach, study coordination and project implementation, qualitative interviewing, focus group facilitation Community Engagement Studios, data management, and qualitative analysis for investigators.

Translational Technologies

- Translational Laboratory: Offers state-of-the-art equipment, technical assistance, consultation on protocol and assay development for any SW CACTI partner institution.
- Center for Molecular Discovery: Expertise with multiplexed, high through outflow cytometry for drug discovery.
- Human Imaging (Mind Research Network): Focus on human imaging providing MRI, MEG, and EEG services.
- UNM Human Imaging Core: Focus on human imaging and providing MRI services.
- Preclinical Imaging Core (Brain and Behavioral Health Institute): The Preclinical Imaging Core at Domenici Hall houses a 7T MRI scanner (BrukerBioSpec70/30USR) and a PET insert for preclinical and molecular in vivo and ex vivo imaging. The scanner is equipped with state-of-the-art multi-channel RF coils, allowing high-resolution in vivo or exvivo imaging for application in life science, biomedical and preclinical research.
- KUSAIR (Keck-UNM Small Animal Imaging Facility): Provides high quality and customer specific functional imaging services on small animal research.

Costs *not* covered under these awards:

- faculty salaries unless clinical FTE buyout
    - Clinical faculty may request up to 5% FTE with agreement and matching from the Chair of their Department. A letter of confirmation from the Chair is required.
- postdoctoral salaries
- non-HSC/UARIZONA staff salaries
- graduate student support (stipends, tuition, etc.)
- administrative or office supply costs (office supplies, paper, ink, telephone, etc.)

- equipment > $5,000 (items < $5,000 are at the discretion of the committee and can be removed from the budget)
- computers, laptops, tablets
- monetary incentives to clinics or providers (e.g., recruitment bonus)
- other items typically supported by indirect costs (publication costs, printing/duplication costs)

IRB Guidelines

CTSA is required to obtain prior approval of all pilot projects from NIH prior to funding. Because of this, all pilot submissions will be required to submit one of the below IRB letters with their submission. Applications without IRB submission by March 1, 2025, will be administratively disqualified. This deadline provides HRPO with efficient time to review all submissions prior to submission to NIH. Projects will need IRB approval by April 15, 2025.

- IRB Letter with Determination of Non-Human Subjects Research
- IRB Letter with Approval of Exemption #1-9 Human Subjects Research
- IRB Letter with Approval of No More Than Minimal Risk Human Subjects Research
- IRB Letter with Approval of Greater than Minimal Risk Human Subjects Research

The following applies to each project:

- Each pilot submission must have its own standalone IRB protocol.
- Amendments or a sub-study/ancillary study to an existing IRB-approved parent protocol are not allowed.
- Pilot application title must match IRB protocol title and be reflected on the approval letter.
- Principal Investigator of the pilot application must match the Principal Investigator on the IRB protocol and be reflected on the approval letter.
- IRB modifications to the approved pilot protocol are not permitted after NIH approval. Every effort should be made to execute the protocol as approved by the IRB, Pilot Review Committee, and NIH.

All projects involving human subjects are strongly encouraged to meet with the HSC Office of Research Operations Manager, Samiha Mateen (smateen@salud.unm.edu) for consultation and planning purposes.

Clinical Trial:
All studies meeting the NIH definition of a Clinical Trial must be registered on ClinicalTrials.gov and have an NCT number assigned to the study. Investigators should make sure the consent has the required language for Clinical Trial registration as it appears in the HRPO consent template. Investigators should register their protocol on CT.gov after receiving IRB approval. Registration is an NIH requirement prior to enrollment of the first participant. To have an account created, contact the HSC Office of Research Operations Manager, Samiha Mateen (smateen@salud.unm.edu).

How to Apply

Investigators interested in applying to this RFA **must first submit Pilot Pre-Proposal**. The Sage Committee will review Pilot Pre-Proposal for project feasibility and responsiveness to Translational Science. Following the review SW CACTI will invite investigators to submit a full proposal for funding.

Once invited to apply, Pilot Project Award applications are submitted electronically via SW CACTI's Camino application. You must have an active HSC Net ID and Password (@salud). If you are accessing the application of HSC campus, you must obtain VPN access prior to logging into Camino. The Camino application works best with Google Chrome or Firefox. All instructions on how to apply for funding and the required templates to use are located on the SW CACTI's Funding Website.

All applications are due **by 12:00 noon on the due date (1/13/2025),** which can be found at the top of this RFA**.** Applications that are late or do not adhere to the above instructions may be administratively denied and not reviewed for funding. Please email Daron Vigil-Scott, Dvigilscott@salud.unm.edu or Shaina Aguirre (svaguirre@salud.unm.edu) in the AIM program office (505-272-5556), with any questions about this RFA or the application process.