

LINCOLN MEMORIAL UNIVERSITY-
DEBUSK COLLEGE OF OSTEOPATHIC MEDICINE

BASIC SCIENCE/CLINICAL RESEARCH

SCHOLAR AWARD

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Application Checklist

Applications are due on the 1st of each month, August - March. Submissions received after the 1st of a given month will be reviewed for the next cycle.

The completed application must contain:

- ☐ An application form. (Appendix A)
- ☐ A proposal, completed by the student with help from the sponsor.
- ☐ The Research and Grants Committee will confirm the applicant meets the following eligibility.
 - OMS II, III, IV or OMSI (only after completion of fall semester courses)
 - Must be passing all courses.
 - **At the time of application**, must have a cumulative GPA of 3.0 or higher.
 - Must not be on probation for academic or professional reasons.
 - Must be on schedule to take COMLEX exams.
- ☐ A **letter of support** from the proposed sponsor on institutional letterhead.
- ☐ A budget (Appendix B)
- ☐ A certificate of completion from the appropriate online training program (Appendix C: CITI training, including modules for Human Subjects or Animal Use, if applicable).
 - **NOTE: THIS TRAINING MAY TAKE SEVERAL HOURS. PLEASE PLAN ACCORDINGLY.**

Address submission questions to:

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Chair of the Research and Grants Committee
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Information for Applicants

The Basic Science/Clinical Research Scholar Award provides an opportunity for LMU-DCOM students to work with experienced basic science/clinical investigators in an environment devoted to research. The goal of the program is to provide students with an experience that will produce better physicians by acquainting students with scientific methodology. This program is administered by the Research Grants Committee (RGC), and applications to the program are reviewed by the RGC.

Questions or help?

Please contact any of the individuals listed below.

Dr. Lindsey Miller, PhD (K, Chair)	Lindsey.Miller@lmunet.edu	X5720
Dr. James Gnarra, PhD (OP, Co-Chair)	James.Gnarra@lmunet.edu	X4192
Dr. Renu Gautum, MD (OP)	Renu.Gautum@lmunet.edu	X6292
Dr. Bradley Fleenor, PhD (H)	Bradley.Fleenor@lmunet.edu	X6429
Dr. Anne Marie Zeller, DO (K)	Annemarie.Zeller@lmunet.edu	X5758

Choosing a Research Sponsor

To apply for the Basic Science/Clinical Research Scholar award, first select a sponsor. Since work on this project takes place during the academic year, the sponsor will most likely be a basic sciences or clinical faculty member at the LMU-DeBusk College of Osteopathic Medicine, though other LMU science faculty members or external mentors may also be considered as sponsors.

A firm idea for a research project before the student contacts a potential sponsor is not required. The sponsor may suggest one or more projects. The student and the potential sponsor should also discuss who the student will be working with day to day, and should work together to develop a specific, feasible research plan.

The sponsor must be qualified to supervise the project and must provide a letter confirming their support for the project and specifying the amount of time he or she expects to be available to spend with the student.

Important: If the project involves humans or animals, the application must state the current status of IRB or IACUC approval (Approved or Pending). Approval does not need to be finalized to apply. However, if the status is left blank, the application will not be considered.

Questions about choosing a sponsor or writing a proposal can be directed to the Chair of the RGC

Application Process

Application requirements are described in the following sections. All materials **must be submitted as a single PDF document** via [Submittable](#).

See Submittable user guides posted on the DCOM Research [Forms & Applications](#) webpage.

Relevance to Osteopathic Medicine

Proposals that address the tenets of osteopathic medicine are encouraged and will be given priority consideration via an additional category in the scoring rubric (see item #6, Appendix D).

Review Procedure

The rubric used to review applications can be found in Appendix D.

Applications will be reviewed monthly and are due on the 1st of each month August - March.

Stipend

The Scholar Award provides a stipend that may be used for materials (reagents, supplies, non-capital equipment, etc.). The maximum stipend amount is \$2,500.00. Please see the budget section for details. If funds are not required for the project, please indicate “No Funds Requested” in Appendix B.

Duration of Funding

The Basic Sciences/Clinical Research Scholar award is intended for longer-term research projects and may be conducted for a term of up to two semesters. Projects must commence after the students’ first block exam of the awarded semester to ensure that the applicant is meeting all academic expectations. If the proposed project cannot be completed by the end of the spring semester, it is permissible for the scholar to continue to work on the project with approval from the Sponsor.

Funds must be spent by June 1st at the end of the fiscal year due to the policies set forth by the finance department. It is expected that the applicant will complete the project during the proposed timeline.

Elements of the Application

Proposal

The proposal must not exceed 1,000 typewritten words in 12-point font, with 1-inch margins (approximately 4 double-spaced pages). The proposal must be written so that it can be understood by non-experts, so avoid jargon and nonstandard abbreviations.

The proposal should contain the following sections:

I) Title Page that includes a project summary paragraph of approximately 200 words.

II) Problem Statement

III) Project Design and Implementation

IV) Potential impact

V) Dissemination Plan

VI) Timeline

See Appendix A for more detailed instructions.

Sponsor's Letter of Support

The application must include a letter of support from the proposed sponsor, written on an institutional letterhead. This letter should outline:

- The student's level of participation in the study. The sponsor's letter must indicate that the scope of the project is appropriate to the time available. If any preparations are in progress, or if any initial work has been done by the applicant, these should be noted.
- The letter should indicate whether the sponsor will directly supervise the applicant for the full period of the scholar award.
- The sponsor's letter must indicate that the facilities necessary for the project are available to the student. This includes any necessary laboratory facilities, office space, computers, and any other facilities needed to complete the project.

Itemized Budget

The proposal may include an itemized budget.

- **Requests for single pieces of equipment with a cost greater than \$1,000 and computers and other electronic devices will not be considered.**
- A sufficient explanation of the costs must be provided in the "description" column.
- Large categories or items should be broken down in the "calculation" column. Please ask a Research Grants Committee member if you have questions about the budget form.

Ethical Research Training Certificate (if applicable)

Applicants will be required to complete the CITI online research training modules before beginning the scholar award, which is available at <https://www.citiprogram.org/Default.asp>. A certificate of completion must be included in the application.

Research that involves the use of human subjects, or any data or material obtained from human subjects **must** have an Institutional Review Board (IRB) approval number.

Research that involves the use of vertebrate animals **must** have an Institutional Animal Care and Use Committee (IACUC) protocol number. These approvals should be readily available from your sponsor at the Institution which is sponsoring the research. IACUC approval **must** be submitted to RGC before the research project can begin. If any research activities occur in the absence of appropriate IRB or IACUC approvals, the funding will be withdrawn immediately, and the student may be required to repay the expended amount of the scholar award. See Appendix C for information about these protocols.

Post-Scholar Award Scientific Presentation

Research Forum Presentations

Scholars are expected to present their work at an internal conference (DCOM Research Day or LMU Research Day). Scholars are also encouraged to submit an abstract of their research to an external scientific meeting. If the scholar is listed as the first author and the abstract is accepted for the meeting, the student is eligible to apply for funding to present the work. This funding will only be provided for meetings held within the contiguous United States. Only one meeting per year will be funded for each scholar.

Appendix A: Application Form & Proposal Guidelines

LINCOLN MEMORIAL UNIVERSITY-DEBUSK COLLEGE OF OSTEOPATHIC MEDICINE APPLICATION FOR BASIC SCIENCE/CLINICAL RESEARCH SCHOLAR AWARD

Applicant/Faculty Mentor: _____

Project Title: _____

Anticipated start date: _____ Anticipated end date: _____

Appendix B. Dollar amount of support requested: _____

Does the applicant anticipate supporting this project entirely with internal funds?

YES _____

NO _____

a) duration of external support _____

b) amount of external funding _____

Co-investigators (if any):

Approvals:

Most applications will require approval by one or more oversight committees, such as an Institutional Review Board (IRB) where human subjects are involved, the Institutional Animal Care and Use Committee (IACUC) for projects using animals, the Institutional Biological and Chemical Safety Committee (IBCSC) for projects in which biohazardous, toxic, or other controlled reagents/substances will be used. Provide information about these approvals below.

OVERSIGHT COMMITTEE **APPROVAL NEEDED** **DATE OF APPROVAL**
(attach a copy of the approval notice with the Committee chair or other authorized signature)

	NO	YES	DATE OF APPROVAL
Institutional Review Board (IRB)	_____	_____	_____
Animal Welfare Committee	_____	_____	_____
Lab Safety Committee (IBCSC)	_____	_____	_____
Online Training Certificate (CITI)	_____	_____	_____
Other Committee (specify below)	_____	_____	_____

PROPOSAL DESCRIPTION:

Provide a brief overview of the proposed project. This narrative should be written so that it is understandable to any of the science or medical school faculty or sitting members of relevant oversight committees. Include a reference cited page (not part of page limits). Do not exceed 1000 words (approximately 4 pages of double-spaced text in 12-point font and 1-inch margins). Please include the following sections in your proposal and refer to the rubric in Appendix D for evaluation criteria:

I. Title Page

The title page should contain the project title, faculty sponsor information (name, title, contact information), student information, entities involved in the project (institutions, businesses, investigators, co-investigators), the total amount of funding requested, the estimated project dates, and a paragraph of approximately 200 words summarizing the proposed project.

II. Problem Statement

Be certain to include a clear statement of the specific aims of this project, including any hypothesis to be tested or research questions to be addressed and the contributions to the advancement of science or medicine that this study will make. Include a brief literature review and relate the research to work that has been done in the field already.

III. Project Design and Implementation

Provide a nontechnical overview of the most important methods to be used, the kinds of data you expect to generate, and the principal means for their evaluation. Address any limitations of the research.

IV. Potential Impact

State the importance of your research to the scientific discipline and its potential to advance the understanding of science or medicine.

V. Dissemination Plan

Include a plan for disseminating the research results to the scientific community (conference presentations, publications, extramural grant applications, etc.). If possible, state the specific conference and provide the dates of the conference. You may specify short-term and long-term dissemination strategies if applicable.

VI. Timeline

Include a timeline for completion of the research with relevant milestones. Include dissemination plan and final progress reports in the timeline. OMSIII/IV students should specifically address how the research will be completed outside the time commitment of clinical rotations.

VII. Optional Materials

You may wish to include the following as appendices: results of preliminary research, CVs of project personnel, etc.

Append text, on separate pages, to this application as needed.

Appendix B: Itemized Budget Form

Use the following table as a format for preparing your itemized budget. You may add or omit categories as appropriate for your proposal, but make sure all items are sufficiently described and that a cost calculation is provided. The maximum amount that may be requested is \$2,500.

CATEGORY	DESCRIPTION	CALCULATION	TOTAL AMOUNT
ANIMAL ACQUISITION	specify by species and strain; give numbers needed in the project period		
ANIMAL MAINTENANCE	cost of cages, feed, and husbandry items; specify by nature or category		
EQUIPMENT** (Single pieces of equipment with a cost greater than \$1,000 will not be considered)	Itemize with an acquisition cost * <u>Computers, iPads, and similar electronic devices are not generally allowed, but exceptions may be made on a case-by-case basis and require additional approvals.</u>		
NON-CONSUMABLE SUPPLIES (generally, have a unit acquisition cost < \$500)	specify by category (e.g., repeating pipettors, glassware, etc.)		
CONSUMABLE SUPPLIES	specify by nature (e.g., biochemicals, general chemicals, ELISA reagents, RIA kits, plastic ware, etc.)		
MISCELLANEOUS	specify by nature (e.g., preparation of graphics for presentation at meetings, hazardous waste disposal costs, etc.; provide an explanation or justification for items not apparent from the project description)		
TOTAL BUDGET REQUEST:			\$\$\$

**** Note: Any equipment (including computers, iPads, or other electronic devices) purchased with scholar award funds remains the property of LMU-DCOM and must be returned to the Director of Research after the research project.**

EXAMPLE:

CATEGORY	DESCRIPTION	CALCULATION	TOTAL AMOUNT
ANIMAL ACQUISITION	four adult <i>Sus scrofa</i>	4 X \$150/pig	\$600

Appendix C

CITI Training Courses for Lincoln Memorial University

All personnel that work with chemicals or biological agents/products, either for teaching or research, are required by the **LMU Institutional Biological and Chemical Safety Committee** to take online training for **Biosafety/Biosecurity** as supplied by the CITI program in addition to any departmental training that is provided.

All personnel that work with humans in research protocols including surveys are required by the [LMU Institutional Review Board](#) to take online training as supplied by the CITI program. If you file a protocol for human research with IRB, the protocol cannot receive approval until all persons listed including the PI have training for **Human Subjects Research** registered with the IRB in addition to any departmental training that is provided.

All personnel who work with animals, either for teaching or research, are required by the [LMU Institutional Animal Care and Use Committee](#) to take online training as supplied by the CITI program. If you file a protocol for animal use with IACUC, the protocol cannot receive approval until all persons listed including the PI have training for **Laboratory Animal Welfare** registered with the IACUC in addition to any departmental training that is provided.

Instructions:

1. Go to the website <https://www.citiprogram.org/>
2. Register using your LMU credentials.
3. Please choose the appropriate courses depending on your type of research. Course content will be available in several areas:

Q1 – Conflicts of Interest: If you have mixed functions or have financial or other interests in both LMU and with other organizations, then this would be an appropriate module to select. (*This must have an answer to submit a course request*)

Q2 – Human Subjects Research: Required for any studies that use human volunteers as the test subjects, this includes intra-classroom comparison of teaching methods particularly if the research is intended for publication.

Q3 – Good Clinical Practice: This module is for investigators doing human pharmaceutical research that is overseen by FDA GCP regulations. Currently, there is no GCP research occurring at LMU.

Q4 – Responsible Conduct of Research: Choose the appropriate area of research interests

Q5 – Laboratory Animal Welfare: This module is required of staff using any live vertebrate animal in teaching or research at LMU. This includes off-site teaching faculty that will have direct contact with animals used in teaching at LMU. Off-site teaching faculty that have classroom-only responsibilities are not required to have CITI training.

Select the appropriate role (typically ‘Working with the IACUC’) and any relevant species with which you will be involved.

Q6 – Good Laboratory Practice: This module is for investigators doing pharmaceutical research that is overseen by FDA GLP regulations. Currently, there is no GLP research occurring at LMU

Q7 – Biosafety/Biosecurity: This module is required for any staff conducting research with potentially dangerous chemicals or biological organisms/products.

Q8 – Institutional/Signatory Officials & IRB Chair: Students may skip this question.

Q9 – Revised Common Rule: Students may skip this question.

Q10 – Semiannual Evaluations in Depth: Students may skip this question.

Q11 – Mental Health for Higher Ed and Healthcare: Students may skip this question.

Q12 – COVID-19: Back to Campus: Not Required/optional.

All staff involved with any form of research or teaching with animals should at a minimum check box for: Basic Biosafety Training

Note: you may at any time select Add a Course from your main CITI page and it will take you back to the course selection questionnaire.

Appendix D

APPLICATION EVALUATION CRITERIA

1. Statement of the Problem (Understanding of the problem and its importance)—20%

- Clarity of problem statement and its importance to the field of study.
- Demonstrated connection between problem and proposed research.
- Awareness of the state of current research and/or technology (e.g., does the application include references to primary literature and relate the research to work that has been done in the area?).
- Identification of gaps in existing research.

2. Project Design and Implementation (Quality and technical merit)—40%

- Detailed and complete discussion of proposed research methods.
- Soundness of the research methods and appropriateness to the proposed study.
- Awareness of potential limitations of the research plan and proposed practical solutions.
- Overall feasibility of the proposed project, *including timeline*.
- Innovation and creativity.

3. Potential Impact—15%

Potential for a scientific or clinical advance(s) that will improve medical practice, medical education, medical knowledge, or basic science knowledge such as—

- Potential for important advances in the scientific or clinical understanding of the problem.
- Potential for advances in the field and the filling of key gaps in scientific knowledge related to medical practice, policy, or education in the United States.
- Potential to contribute useful basic science knowledge to the primary discipline.
- Relevance for improving clinical policy and practice, patient safety and/or quality of life, or medical education.
- Perceived potential for implementation of new technology, standards, or techniques (when applicable).
- Potential for innovative solutions to address (all or a significant part of) the stated problem.

4. Capabilities/Competencies (Capabilities, demonstrated productivity, appropriate timeline, and experience of the applicant and proposed project staff)—20%

- Qualifications and experience of the researcher and/or research mentor (e.g., successful coursework completion, relevant work and/or research experience, leadership roles, mentoring experience, and record of publication).
- Applicant's record of accomplishment concerning successful completion of previous research projects, grants, or contracts (if applicable).
- Applicant's record of accomplishment concerning disseminating results of previous research projects, grants, or contracts (if applicable).
- Applicant's academic standing with the university (student applicants ONLY).

5. Plan for Dissemination to Broader Audiences (5%)

- Does the applicant include a plan for disseminating the research?
- Is the proposed method of disseminating project results effective and feasible?
- Does the plan include conference presentations at regional or national conferences? Published manuscripts?

6. Relevance to Osteopathic Medicine (+5% bonus)

- Projects that address the tenets of osteopathic medicine

7. Budget, if applicable (unscored)

Reviewers will consider and may comment on the following items in the context of scientific and technical merit.

- Format of budget (e.g., is it itemized with descriptions and calculations of costs?)
- Total cost of the project relative to the perceived benefit (cost-effectiveness).
- Appropriateness of the budget relative to the level of effort.
- Use of existing resources to conserve costs.
- Proposed budget alignment with proposed project activities.

APPENDIX E

PROGRESS REPORT TEMPLATE

Grant Title: _____

Name of scholar receiving the award:

Research Sponsor _____

Amount of Award: _____

Project Start Date: _____

Has the scholar met all expectations for this project and has made acceptable progress towards the goals stated in the scholar award application?

_____ Yes

_____ No

If no, please explain how these deficiencies will be addressed:

Signature of Faculty Mentor/Research Sponsor