



THE UNIVERSITY of
MISSISSIPPI
THE CENTER OF BIOMEDICAL RESEARCH
EXCELLENCE IN NATURAL PRODUCTS
NEUROSCIENCE

COBRE PHASE III Transitional Center
Natural Products Neuroscience
Call for Pilot Project Program Proposals

Letter of Intent Due: October 1, 2019

Invited Proposals (R01 format) Due: December 10, 2019

A-1 type Revised Proposal Due: February 10, 2020

The University of Mississippi Center of Biomedical Research Excellence in
Natural Products Neuroscience (COBRE-NPN)

(<http://pharmacy.olemiss.edu/cobre/>)

Summary: The Center of Biomedical Research Excellence in Natural Products Neuroscience (COBRE-NPN) will fund up to five Pilot Program Projects of \$50,000 / year / project. The maximum duration of support will be 2 years. Applications must address one of the three areas of research (basic science, translational or entrepreneurial development) and the project scope must be within the COBRE-NPN thematic research focus area - understanding the neuropharmacologic effects of natural products.

Eligibility: All University of Mississippi faculty members are eligible to participate in the Pilot Project Program (PPP). Preference will be given to junior investigators who are in the early stages of their career. Those who have not yet received a major program grant (e.g. an R01) award are also encouraged to apply for the PPP. Past graduates from the COBRE-NPN program, who do not serve as mentors, may also compete for the projects but will have to present a compelling rationale to be considered for funding.

Project areas that fall within the scientific focus of the CORE-NPN include but are not limited to:

- Basic science research: biological evaluation of natural products as agents possessing neuropharmacologic effects.
- Translational science research: Translating basic science discoveries from animal models to human subjects.
- Commercialization (Entrepreneurial development): The advancement of research discoveries from the bench to the commercial sector.

Criteria for evaluation of COBRE Pilot Project applications:

- Initial evaluation will be done based on the cover page and specific aims submitted by all applicants and will be done by the PPP Review Committee and the EAC. The rubric for narrowing the pool is based primarily on:
 - Relevance to the COBRE-NPN research focus
 - Clarity of specific aims and scientific merit
 - Proposed COBRE-NPN core utilization
 - Strategic vision for leveraging PPP results into future R-type NIH funding
 - Junior Investigator status
- A maximum of 10 applicants will be selected and invited to submit a full-proposal, in R01-format, and will then participate in a Shark-Tank type meeting wherein a ten-minute presentation of the proposal is given to the PPP Review Committee who in turn provide the applicant feedback and guidance.
- Applicants will then submit a revised (A1-like) proposal to be forwarded to the EAC for final evaluation.
- The EAC will recommend up to five finalists for NIGMS approval.
- Proposals will be prioritized for funding based on scientific merit, thematic research focus, career-stage, collaboration-teams, and the perceived likelihood of publications and competitive grant applications generated from work.

General Terms and Conditions of CORE-NPN COBRE Research Pilot Project Program:

1. COBRE funds will not be released until NIGMS approves the project.
2. PI or Co-I salary will not be supported. Funds may be used to support purchase of materials and supplies and for laboratory personnel salaries.
3. Purchase of equipment (cost equal to or greater than \$5,000) will not be allowed.
4. At least 30% of the funds should be used for services obtained through one or both Cores (Chemistry and DMPK and/or Neuropharmacology Core)
5. Pilot Project Investigators will be required to deliver a presentation every quarter on their progress.
6. The investigator will be required to submit at least one abstract for presentation at a national research meeting and to submit one manuscript for peer-reviewed publication acknowledging COBRE and core support, by the end of year 1 of funding.
7. Recipients will be required to submit an investigator-initiated NIH R01 grant application by the end of the second year of COBRE support. If investigator obtains external support, COBRE support will be discontinued if the COBRE supported project is significantly similar to the newly funded project.
8. Investigators will be expected to present their research findings to the EAC during their annual review.
9. The younger scientists, pre-R01 awardee, and assistant professors will be required to identify at least one senior faculty member to serve as their mentor.
 - a. The more senior scientists at the associate or full professor rank will have the option of selecting a senior mentor to facilitate the development of their project.
10. Recipients will present their work at the Annual Core Research Day.

NOTE: Prospective applicants with questions about eligibility, program details, application process, or requirements are encouraged to contact Dr. Kristie Willett (662-915-6691); kwillett@olemiss.edu).

Step 1: Submit a Letter of Intent (LOI) and the Cover Page.

- **Due at 5 p.m. (CST), October 1, 2019 to ORSP InfoReady site:**
<https://olemiss.infoready4.com/#competitionDetail/1796553>
- **The LOI consists of the**
 - Cover Page (see appendix I) and
 - Specific Aims page (limit 1 page) that clearly indicates how the proposed research addresses both the objectives of the COBRE-NPN as well as the overall strategic plan of the agency to which they will eventually target an R-type award.

Step 2: Upon invitation, prepare and submit to the PPP Review Committee a R01-style proposal.

- **Due at 5 p.m. (CST), December 10, 2019 ORSP InfoReady site.**
- The page limits will follow the NIH R01 format.
- Applicants will have access to application through the COBRE-NPN website.
- The application package will include two sections:
 - **Section A:**
 - Face page
 - Form page 2 (both pages)
 - Specific Aims (1 page)
 - Research Strategy (12 pages):
 - Significance
 - Innovation
 - Approach including scientific rigor
 - Timeline
 - Vertebrate Animals section (address all four points)
 - IACUC/IRB Approval Letter
 - Letters of support from Mentor(s) and Core Director(s)
 - PHS Human subjects and clinical trial information
 - Information on Biohazards or Select Agents
 - Resource Sharing Plan
 - Authentication of Key Biological/Chemical Resources.
 - **Section B**
 - Biographical sketches (uses latest NIH format)
 - Budget (\$50,000 Direct costs per year for 2 years)
 - Budget Justification
 - Other support information for the applicant and Sr/Key personnel
 - Equipment
 - References

Step 3: Shark Tank style presentation

Step 3: Submit an A-1 type Revised Proposal

- **Due at 5 p.m. (CST), February 10, 2020; ORSP InfoReady site.**
- Include one page Introduction (a.k.a. Response to review).



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COBRE CORE-NPN
Call of 2019 Phase III Pilot Project Program Proposals
Cover Page

Applicant _____

Department _____

Title of Proposed Research _____

Project Narrative/ Relevance (2 sentences)

Relevance to CORE-NPN theme (2 sentences)

Indicate CORE-NPN Cores and services that will be utilized (see Appendix II)

Neuropharmacology

In vitro assays

In vivo rodent assays

In vivo zebrafish assays

Chemistry/ DMPK

Synthesis and chemical characterization

DMPK and formulation

Potential Mentor _____

Chemistry and Drug Metabolism and Pharmacokinetics Core

Services Offered
Consultation
Synthesis and purification
LC-MS (low resolution analysis) purity assessment
CHN Analysis
Bioanalytical Method Development and validation HPLC/UPLC/MS-MS
Bioanalysis HPLC/UPLC/MS-MS
Pre-Clinical PK Studies per compound single dose (3 timepoints; N=3, mice/rat)
Tissue Distribution Accumulation (three time point; N=3, mice)
In vitro metabolism studies - liver microsomes
In vitro metabolism studies - liver homogenates
Physicochemical Characterization per compound

NeuroPharmacology Core

Services Offered
Consultation
In vitro Assays
Receptor Binding Assays
Functional Assay
Enzyme Inhibition Assay
Enzyme Inhibition-kinetics Assay
Neurite Outgrowth (primary cells)
Neurite outgrowth (PC12 cells)
Neuroprotection
Neuroprotection EC50
Neurotoxicity
Western blot analysis
In Vivo Screening Assays
Tissue harvest
Conditioned place preference
Open field
Rotarod
Elevated plus maze
Forced swim test
Tail Suspension
Grip Strength
Hotplate and tail flick
von Frey
Acetic acid writhing
Nitroglycerin induced migraine
Cisplatin induced neuropathy
Complete Freund's Adjuvant
Tetrad Assay (body temperature, hot plate, tail flick, catalepsy, locomotion)
Morris Water Maze
Barnes Maze
Radial Arm Maze
Y-maze
Rodent PTZ Seizure
Rodent PTSD
Rodent Pilocarpine Epilepsy
Rodent PTZ epilepsy
Zebrafish PTZ seizure
Genetic Zebrafish seizure (Dravet)
Zebrafish toxicity
QPCR of Zebrafish epilepsy panel