



PENNINGTON BIOMEDICAL / LOUISIANA
NUTRITION OBESITY RESEARCH CENTER



“Nutrition, Obesity and Metabolic Health Throughout the Lifespan”

2020 NORC OBESITY AND ALZHEIMER’S DISEASE AND RELATED DISORDERS (ADRD) PILOT/FEASIBILITY GRANT APPLICATION INSTRUCTIONS

Purpose:

Approximately \$240,000 is available to fund P&F grants (minimum 3, maximum 6). The major objective of this program is to provide research support to develop preliminary data and / or novel methods from individuals or multidisciplinary teams working at the intersection between **obesity / nutrition and Alzheimer’s disease and related disorders (ADRD)**.

The NORC will give **highest priority to translational research examining relationships between nutrition/obesity and ADRD**. The hope for a Pilot and Feasibility Award is that it will generate enough preliminary data for the investigator to obtain research funding by conventional mechanisms (e.g., R01).

This program will **encourage investigators** (especially Early Stage Investigators teaming up with more Senior Investigators) to begin to apply their existing research strengths in either nutrition / obesity or ADRD to problems at the intersection between these two areas. The long-term goal should be to increase our understanding of basic and clinical aspects of obesity and ADRD, including how the etiology, pathophysiology, therapy and prevention of the two diseases interact with each other.

This program is designed to:

- Encourage young investigators to develop the needed preliminary data to support new grant applications,
- Encourage more senior investigators to mentor younger investigators in developing novel approaches and techniques in support of application for new funding, and
- Encourage the formation of multidisciplinary research teams between basic, clinical, and population science.

Junior investigators with expertise related to ADRD are encouraged to apply as a PI and collaborate with a more senior mentor who has expertise in nutrition, energy metabolism, obesity, diabetes, or metabolic. Similarly, junior investigators with expertise related to obesity are encouraged to collaborate with a mentor who has expertise related to aging and/or ADRD. Typical grants are available for one year, although proposals involving clinical studies or the development of new animal models may be funded beyond one year, pending significant first year progress. In general, funding is provided for one year from the date of award and only special circumstances with adequate justification will allow a no cost extension.

Applicants should note that the theme of the Louisiana NUTRITION OBESITY RESEARCH CENTER is “Nutrition, Obesity and Metabolic Health throughout the Lifespan.” In accord with our NORC award from NIDDK-NIH, we will try to develop collaborative translational research teams that apply this theme to ADRD, with preference to those that use molecular & cellular technologies and encourage development of new methods to PBRC focusing mostly on the following areas. The use of imaging methods (cells, tissues and organs and whole body) are also encouraged.

Neuronal and molecular regulation of energy balance and metabolic health

- Neuronal and molecular regulation of feeding behavior, energy balance, substrate flux and metabolism, insulin signaling, inflammation and oxidative stress, epigenetics and developmental biology. Example areas relevant to this program include: role of brain insulin signaling in AD prevention and treatment; role of endocrine hormone signaling in the brain (leptin, adiponectin, etc.) in AD and related disorders; brain inflammation, oxidative stress, redox, etc. in the context of AD.

Physical activity and energy expenditure

- Physical activity, thermoregulation, and energy expenditure in humans and in rodent models. Example areas relevant to this program include: effects of exercise on deposition of AD pathology; effects of AD pathology on neural control of resting energy expenditure; changes in mitochondrial function in AD.

Nutrition and metabolic health

- Effects of nutrition on obesity, metabolism and health. Example areas relevant to this program include: dietary factors influencing deposition of preclinical AD pathology; unintentional weight loss in AD; mechanisms of cholesterol metabolism (e.g., APOE) in AD; and obesity management among AD patients.

Note that facilities and administrative costs for such NORC Pilot & Feasibility grants are STRONGLY DISCOURAGED.

Who is Eligible?

- Full-time Assistant or Assistant Professors, and senior post-doctoral fellows at Pennington Biomedical Research Center and/or full-time faculty at another institution that is part of the NORC and have not previously been awarded a NORC Pilot & Feasibility grant.
- Senior postdoctoral fellows need to be part of the institution for longer than 1 year and having potential for full faculty position.
- Teams of junior (faculty or senior postdoc) and senior faculty (senior as mentor only) working together to tackle a question of high priority to the NORC.
- Collaborative teams between basic, clinical, and population researchers working together to develop translational studies that pursue questions of high priority to the NORC. **Collaborative projects with multiple areas of expertise are strongly encouraged.**

There is no citizenship requirement for P/F recipients, BUT visiting scientists with whom the CENTER or other Louisiana Institution will not have a long-term collaborative relationship will not be considered for support. Applicants must hold a Ph.D., M.D., or equivalent degree, and have completion of at least one year of postgraduate work relevant to the desired research experience.

Initial Email Announcement

July 6, 2020

Letter of Intent due:

July 27, 2020

<http://norcfunding.pbrc.edu>

Invitation to present:

August 11, 2020

Chosen LOI will present (see instructions below)

Full Application due:

Due: August 31, 2020

For those selected after LOI presentation

<http://norcfunding.pbrc.edu>

Please submit ONE DOCUMENT **Electronically (PDF format in color)** on the NORC website

A letter of intent is required initially to ensure eligibility and appropriateness of the research topic and to provide a rough estimate of the budget.

Letter of Intent Guidelines:

- One page maximum
- Project title, Principal Investigator and if applicable inter-institutional collaborations.
- General description of intended work including a statement of intended PBRC scientific core usage.
- Estimated budget
- If applicable, name collaborative mentor.
- A letter of commitment of retention from the Chairman or Dean for applicants from other LSU System institutions or other state institutions.

- Senior postdoctoral fellows who have been part of the institution for longer than 1 year should include a Letter of Support from the applicant's mentor or institutional official documenting institutional commitment with potential for a full faculty position.
- NIH Biosketch

Selected investigators will be invited to give a brief presentation on the:

Significance

- Does the project address an important problem or a critical barrier to progress in the field?
- If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved?
- How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

Innovation

- Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?

Investigator

- Are the PI(s), collaborators, and mentors well suited to the project?

Approach

- Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?
- Scientific rigor: is the planned study design, methods and statistical approaches likely to generate high quality data worthy of publication or for use a preliminary data in a future grant application?

Feasibility

- Is the estimated budget sufficient to cover all project cost? If not, what other support is promised.
- Is the research feasible within the allotted time frame.

Only investigators who receive approval following their presentation will be eligible to submit a full application.

Format of Application:

The application packet must include the following (Applicants are required to use the NIH 398 forms):

- NIH Face Page
- NIH Budget page + 1 page budget justification
NOTE: clinical protocols MUST be budgeted through the standard procedures. Contact your Sponsored Projects Office for details.
- NIH Biographical Sketch including "Other support" if currently independently funded.
- NIH Biographical Sketch from the mentor if applicable
- Research plan (**5-page maximum including references, Arial 11, single-spaced, .5-inch margins**).
 - A) Specific Aims
 - B) Background and Significance
 - C) Preliminary Data
 - D) Research Design and Methods and Scientific Rigor
 - E) Relevance of the Proposed Project to the theme of nutrition/obesity and metabolic health
 - F) If relevant, the role of the mentor in the design and execution of the proposed research
 - G) Description of how the results of this study will lead to future investigations/grant applications.
 - H) References.

Any additional materials including the anticipated use of the cores and letters of support should be submitted as an appendix.

- If project involves a sponsor, a consultant or a mentor, this individual must write a letter of support for the application and clarify any potential overlap between their support and the subject of the proposal.

Additional Instructions:

1. Please list the Principal Investigator's (PI) name on the top right-hand corner of every page of the application.
2. When completing the budget page, please refer to the list of expenditures allowed and not allowed included with these instructions.
3. Although facilities and administrative costs are allowed under the terms of the prime award, it is our belief that these funds should be used in the spirit intended i.e. direct costs in support of this project. It is hoped that for an award of this type, your institution will be willing to forego the facilities and administrative costs and consider these costs as matching funds to your project.
4. Mention how your study may utilize and/or contribute to the biorepository for both clinical or pre-clinical biological samples (see E below)
5. The following headings should be used for the research plan (sections A-H should be 5 pages maximum).
 - A. **Specific Aims:** State concisely the hypothesis to be tested and the specific aim(s) to be achieved during the grant period. The aims must be reasonable to achieve during the one-year period of the grant. While it is possible to receive grants for 2 year proposals, the PI must define a quantitative, intermediate milestone that can be evaluated at the end of the 1st year of research.
 - B. **Background and Significance:** State the relevance of the proposed project to basic, clinical or prevention and control of chronic diseases. Discuss the use of one or more NORC Core Facilities.
 - C. **Preliminary Studies/Progress Report:** Discuss the pertinent research findings that will help to establish the experience and competence of your project.
 - D. **Research Design and Methods:** Concisely present your experimental design and the methods to accomplish your specific aims relating it to chronic disease and to longer term funding objectives. Also indicate how the results will be interpreted and how they will lead to future investigations. Well-known methods and standard procedures may be described very briefly or referenced, but novel experimental approaches should be outlined in more detail. This section should represent the bulk of the application.
 - E. **Relevance of the Proposed Project to Nutrition/obesity-related research** (see "Areas of research" above), **use of NORC cores and use and/or contribution to the NORC biorepository.**
 - F. **Role of Mentor when applicable**
 - G. **Description of how the results of this study will lead to future investigations/grant applications.**
 - H. **References**

Appendix:

- Anticipated use of the cores
- Letters of support

Allocation and Expenditure of Funds:

Testing available at the NORC Cores are provided; however, supplies (when applicable) for the testing have to be budgeted.

Expenditures Allowed:

- Limited technical staff salary support (do not request more than 25% salary for a research associate)
- Research supplies and animal maintenance
- Equipment costing less than \$5,000.
- Special fees (pathology, photography, etc.)
- Supplies
- We want to encourage the use of next generation sequencing (Dr. Michael Salbaum for details)

Expenditures NOT Allowed:

- Principal Investigator, or Co-Investigator, or Mentor salary support
- Secretarial/administrative personnel salary support
- Office equipment and supplies

- Computers
- Tuition
- Domestic or Foreign Travel
- Publication costs, including reprints
- Dues and membership fees in scientific societies
- Purchasing and binding of periodicals and books
- Honoraria and travel expenses for visiting lecturers
- Rental of office or laboratory space
- Construction or building maintenance
- Recruiting and relocation expense
- Indirect Costs

Scoring metric

Applications are scored using the NIH criterion for Significance (including scientific premise), innovation, approach (including scientific rigor, reproducibility and biological variables), investigator(s). Other score driving factors include likelihood of successful execution within the funding constraints (cost and time), potential for future funding, available mentoring and other Faculty/Institutional support.

Additional Information:

If the project involves human or animal subjects, submission to IRB or IACUC must be within two months (better one month) after receipt of notice of grant award. IRB/IACUC approval will be requested as per the NIH practice of just-in-time mechanism before funding is released.

Please check our NORC website <http://NORC.pbrc.edu> or contact Randy Mynatt or Jacqueline Fox (NORC Executive Secretary) at jacqueline.fox@pbrc.edu or 225-763-2686 if you have questions about the P&F application process. Please contact the Directors of the NORC Cores if information is needed regarding a specific Core (Human Phenotyping - Corby Martin, Molecular Mechanisms - Michael Salbaum, and Animal Models - Randy Mynatt)