PENNINGTON BIOMEDICAL / LOUISIANA

NUTRITION OBESITY RESEARCH CENTER

NORC Newsletter

Fall 2026



Member Spotlight

The NORC is pleased to congratulate Dr. Amanda Staiano on being named Interim Associate Executive Director, Population and Public Health Science at Pennington Biomedical Research Center.

UPCOMING EVENTS

- **Responsible Conduct of Research (RCR)**
  Nov. 11, 2026
  Led by Dr. Kim Drews, the November RCR session will discuss responsible biostatistical methods. The session will begin at 3:00 pm. For virtual attendance options, please contact Dr. Patrick Kirby (patrick.kirby@pbrc.edu).

- **William Hansel Visiting Speaker Series**
  Nov. 19, 2026 at 11:00 am
  Featured Speaker:
  Andrew Bremer, MD, PhD, MAS
  National Institute of Health (NIH)

- **Aging Effects on Substrate Utilization Symposium**
  Nov. 29 - Dec. 1, 2026
  The fall session of PBRC's Scientific Symposium Series will be co-chaired by Dr. Owen Carmichael and Dr. Bret Goodpaster. The symposium will take place on LSU's Flagship campus at Lod Cook Alumni Center in Baton Rouge.

Message from the Director

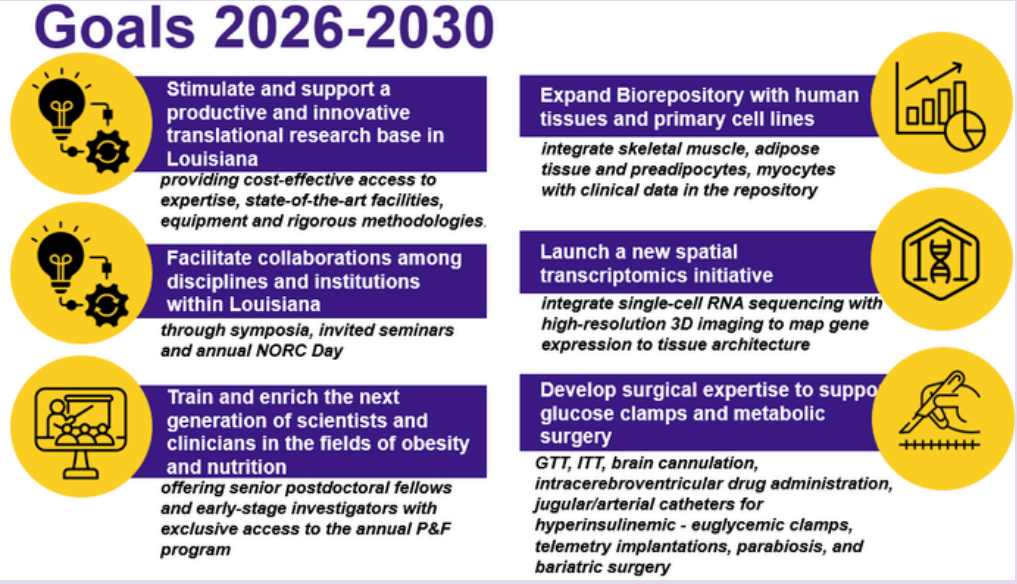


Eric Ravussin. PhD
Douglas L. Gordon Chair in Diabetes and Metabolism
Boyd Professor
Pennington Biomedical Research Center

The state of our Pennington-Louisiana NORC is outstanding. As you all know, we just entered the 5th five-year cycle the NIDDK Center Grant in June 2026 after a very successful renewal under the leadership of Dr. Leanne Redman, who is now leading a prestigious research institution in Sydney, Australia.The overall goals of our NORC grant is still to provide all the necessary tools and means to investigators across Louisiana in order to perform the best possible research in nutrition and obesity. With now more than 250 members and three outstanding scientific cores (see below), we feel that we can truly become international leaders in nutrition and obesity research.

On October 23, 2026, we were fortunate to organize a NORC Day at the University Medical Center in New Orleans, assembling members of our NORC from 7 academic institutions around the State of Louisiana. More than 80 investigators attended this NORC event, which was mostly designed to build new collaborations between institutions, but also to inform members about the services provided by our Scientific Cores, including the "Human Phenotyping Core", the "Bioinformatic & Molecular Mechanisms Core," and the "Animal Metabolism & Behavior Core" including the Genetically Engineered Modes sub-core. See the NORC webpage for details. I personally summarized some of our achievements over the past 20 years, but most importantly emphasized our goals for 2026-2030 as shown in the figure below.

In summary, I want to give a personal shout-out to our Pennington-Louisiana NORC leaders and encourage all investigators interested in nutrition and obesity research to continue to expand our state-of-the-art research in Louisiana and disseminate the results at the international level.



NORC Network Features

Unraveling the Metabolic Impact of Alcohol and Diet in HIV

Researchers at the LSU Health New Orleans Comprehensive Alcohol-HIV/AIDS Research Center are investigating how alcohol use and calorie-dense diets contribute to metabolic complications in people with HIV. Led by Dr. Liz Simon and Dr. Patricia E. Molina, the team is combining clinical and laboratory studies to better understand disruptions in glucose and lipid metabolism, liver health, and aging-related disease risk. Their work is shedding light on the biological mechanisms that drive these complications and identifying factors that may place some individuals at greater risk. The researchers are also evaluating potential interventions, including metformin, with the goal of improving metabolic health, reducing disease burden, and supporting healthier aging for people living with HIV.

Genomics Research Reveals New Clues to Metabolic Disease and Cancer Risk

Dr. Jingjing Zhu and colleagues are using advanced genomic and bioinformatics approaches to uncover the genetic factors that influence metabolic diseases and cancer. Drawing on large-scale datasets, including the All of Us Research Program, the team has identified genetic signals linked to cardiovascular disease, type 2 diabetes, and pancreatic cancer across diverse populations.

By integrating genetic, clinical, and population-level data, the Zhu Lab is gaining new insights into the biological pathways that contribute to disease development and progression. Their findings are helping to advance precision medicine approaches that could improve disease prediction, inform prevention strategies, and ultimately support more personalized healthcare for diverse communities.



Jingjing Zhu, PhD
Assistant Professor
Director, Bioinformatics Core
LSUHSC – New Orleans

New Discoveries from LSU Health Shreveport

Our NORC partners at LSU Health Shreveport have had a productive fall, publishing three studies in high-impact journals. Together, the studies reveal new metabolic mechanisms behind liver and cardiovascular disease and point to promising new therapeutic targets.

Restoring a missing molecule to treat MASH

- *Journal of Clinical Investigation*, Sept. 2026: The team identified a previously unrecognized deficiency of lipidated amino acids in metabolic dysfunction-associated steatohepatitis (MASH). Restoring these molecules activated PPARα signaling and reduced liver inflammation and fibrosis, offering a promising new therapeutic approach for a disease with few treatment options.

How fish oil compounds protect the liver

- *Science Advances, October 2026*: Working with colleagues at the University of Pittsburgh, the researchers uncovered how furan fatty acids, which occur naturally in fish oil, regulate lipid metabolism in the liver. They also showed that a new synthetic derivative improved fatty liver disease, glucose metabolism, and other metabolic abnormalities in experimental obesity.

Linking macrophage metabolism to plaque stability

- *Arteriosclerosis, Thrombosis, and Vascular Biology, October 2026*: This collaborative study found a new signaling pathway that connects macrophage metabolism to the clearance of dying cells and the resolution of inflammation. The findings shed light on what keeps atherosclerotic plaques stable and suggest new therapeutic targets.

For more information on these studies, please contact Dr. Oren Rom oren.rom@lsuhs.edu

2026 Pilot and Feasibility Awardees

Pulmonary Exposure to Environmentally Persistent Free Radicals as a Driver of Systemic Iron Dysregulation and Early Metabolic Liver Injury



Rashmi Pathak, PhD
Postdoctoral Fellow
LSU-PBRC

Metabolic dysfunction-associated steatotic liver disease (MASLD), a major complication of obesity, affects approximately 25-40% of adults worldwide and is a leading cause of chronic liver disease. Although dietary, genetic and metabolic factors are well-established drivers, emerging evidence suggests that environmental exposures, particularly air pollution, may also influence MASLD development and progression. Environmentally persistent free radicals (EPFRs) are redox-active components of combustion-derived particulate matter that induce sustained oxidative stress and inflammation. While EPFRs are primarily recognized for their adverse effects on the respiratory system, their potential systemic effects, particularly on liver health in the context of obesity, remain poorly understood. Iron dysregulation is an emerging contributor to MASLD progression, promoting oxidative stress, mitochondrial dysfunction, and metabolic injury. Central to this process is inflammatory activation of IL-6/hepcidin pathway, a key regulator of systemic and hepatic iron homeostasis. Our preliminary observations support a model in which EPFR-induced systemic inflammation may promote hepatic iron dysregulation and mitochondrial dysfunction, warranting further investigation into the role of EPFRs in metabolic liver injury. This NORC Pilot and Feasibility project investigates whether EPFR exposure exacerbates obesity-associated liver injury through IL-6/hepcidin-mediated mechanisms. Using a diet-induced obesity mouse model, this study will examine EPFR-induced alterations in hepatic iron homeostasis and mitochondrial integrity (Aim 1), as well as changes in body composition, liver steatosis and metabolic gene expression (Aim 2). By integrating environmental and nutritional factors, this research will provide insight into how inhaled pollutants may act as environmental modifiers of obesity-associated metabolic dysfunction, potentially identifying pathways for targeted prevention and intervention.

Lifestyle determinants of lipoprotein(a) concentration



Terrence Riley, PhD, RD
Postdoctoral Fellow
PBRC

A common, heritable, and causal risk factors for atherosclerotic cardiovascular disease (ASCVD) is an elevated lipoprotein(a) [Lp(a)] (≥30 mg/dL). Although an estimated 30% of people globally have an elevated Lp(a), less than 2% are aware of their levels. Lp(a) screening remains limited partly because there are no recommendations on how to lower concentrations and reduce ASCVD risk. When elevated Lp(a) is identified, individuals are generally advised to follow healthy lifestyle behaviors such as consuming a healthy diet, increasing physical activity, improving sleep, and avoiding nicotine. However, some evidence suggests healthy lifestyle behaviors may increase Lp(a), highlighting the need to better understand their relationship with Lp(a) and ASCVD risk.

This NORC Pilot & Feasibility award will expand Lp(a) testing and investigate its relationship with lifestyle behaviors. Funding will support Lp(a) measurement in archived biospecimens from the Military Health and Nutrition Examination Study, a cross-sectional study of Army Soldiers from 5 installations across the U.S. We will examine Lp(a) levels in relation to Soldiers' cardiometabolic health profile using the American Heart Association's Life's Essential 8 framework. Then, we will use machine learning techniques to investigate how components of individual lifestyle behaviors are associated with Lp(a) concentration. This research will provide the first comprehensive assessment of Lp(a) among active-duty Soldiers and inform future research on lifestyle strategies to reduce ASCVD risk for those with elevated Lp(a) concentrations.

Diet as a Modifiable Determinant of RAS-Dependent Tumor Progression



Semira Ortiz, PhD
Postdoctoral Fellow
PBRC

RAS-pathway signaling is one of the most commonly dysregulated drivers of cellular RAS-pathway signaling is one of the most commonly dysregulated drivers of cellular growth, and RAS-driven cancers account for 20–30% of all cancer cases, including pancreatic and colorectal cancers.

Obesity is strongly associated with cancer incidence in these tumors, but evidence supporting a causal relationship remains limited. This project uses neurofibromatosis type 1 (NF1) as an innovative model to test whether diet can influence RAS-driven tumor progression. In NF1, loss of the RAS suppressor NF1 leads to benign nerve tumors called plexiform neurofibromas, which in about 13% of cases undergo a well-characterized stepwise transformation into malignant peripheral nerve sheath tumors (MPNSTs). This makes NF1 an ideal system to study how diet affects the progression from benign to malignant disease. NF1 loss, through RAS activation, shifts both the tumor cell of origin and infiltrating immune cells toward glycolytic dependency and impaired mitochondrial respiration. NF1-deficient macrophages, which make up nearly 30% of all plexiform neurofibroma cells, adopt a pro-tumorigenic inflammatory state that is sustained by upregulated glycolysis. An obesogenic diet can exacerbate this metabolic phenotype. We therefore hypothesize that diet-induced obesity, hyperinsulinemia, and elevated glucose may promote malignant transformation, while a ketogenic diet may suppress it.

This NORC pilot and feasibility grant will test how obesogenic and ketogenic diets alter neurofibroma growth, transformation, and metabolic phenotype in a mouse model of NF1 deficiency. Using MRI, we will track tumor onset and growth in vivo. On collected tumors, we will perform metabolic assays and spatial transcriptomics. We will map known malignant transformation markers, diet-induced changes in Schwann cell metabolic programs, and the tumor immune microenvironment. This will be the first study to measure the effect of diet on neurofibromas, and one of the first to apply spatial transcriptomics to benign-to-malignant transformation. This research will provide critical insight into the mechanisms by which diet can modulate RAS-driven tumor progression, with implications extending beyond NF1 to other RAS-dependent cancers.

Training and Enrichment Updates

Now Accepting Applications: NIDDK Clinical Methods for Nutrition and Obesity Research Course

Early-career researchers can get hands-on training in the gold-standard methods behind nutrition and obesity research at this year's NIDDK Clinical Methods Course. It will be held **March 1-4, 2027**, at the Pennington Biomedical Research Center in Baton Rouge.

Designed for postdoctoral fellows and early-career faculty, the four-day, in-person course combines expert instruction with practical, hands-on experience in four core areas:

- Body composition
- Carbohydrate metabolism, including the hyperinsulinemic clamp
- Exercise testing
- Energy requirements and expenditure, including Pennington's metabolic chamber

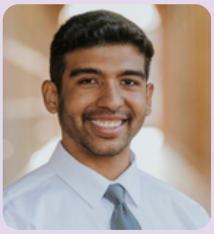
Registration is **free**. Accepted participants receive a $700 travel stipend, and their hotel and local transportation are covered.

For questions, contact Dr. Patrick Kirby (patrick.kirby@pbrc.edu).

Apply Now

T32 Trainees in Obesity Research

Pennington Biomedical's NIDDK-supported T32 in Obesity Research entered its 23rd consecutive year of funding in 2026, continuing its long-standing commitment to training the next generation of leaders in metabolic and obesity science. After a competitive recruitment process, the program appointed three new trainees, who are highlighted below. All T32 positions are currently filled, but candidates interested in future opportunities are encouraged to contact the Division of Scientific Education (SciEdu@pbrc.edu).



Dr. Christian Rodriguez received his PhD from Texas Tech University. He began his T32 training in April 2026 under the mentorship of Drs. Eric Ravussin and Steven Heymsfield.

Dr. Stephanie Small received her PhD from the University of Toronto. She began her T32 training in August 2026 under Dr. Candida Rebello in the Nutrition and Chronic Disease Lab





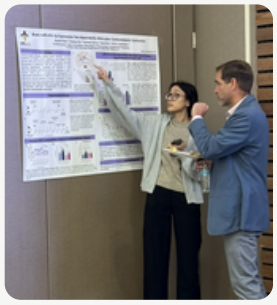
Dr. Jocelyn Jarvis received her PhD from the University of South Florida. She began her T32 training in August 2026 in the Pediatric Obesity & Health Behavior Lab under the mentorship of Dr. Amanda Staiano.

NORC Day 2026 Brings Together Researchers from Across Louisiana



On October 23, 2026, more than 80 investigators from seven academic institutions across Louisiana gathered at University Medical Center New Orleans for NORC Day. The event celebrated the research, collaboration, and emerging talent driving nutrition and obesity science across our state.

The program opened with presentations from our partner institutions. ***Liz Simon, PhD***, represented LSU Health New Orleans, and ***Oren Rom, PhD***, represented LSU Health Shreveport. Recipients of past Pilot & Feasibility (P&F) awards then shared updates on how their NORC-supported projects have progressed. They were ***Hannah Cabre, PhD*** (PBRC); ***Vance Albaugh, MD, PhD*** (PBRC); ***Terrence Riley, PhD*** (PBRC); and ***Avinash Kumar, PhD*** (LSU).



The day closed with a lively poster session featuring 31 posters from graduate students, postdoctoral fellows, and early-career researchers across the NORC network. The session gave rising scientists a chance to share their work and connect with potential mentors and collaborators.

Thank you to all of our presenters, poster presenters, and attendees for making NORC Day a success. We look forward to seeing everyone next year!

Outreach Updates

Greaux Healthy Conference Unites 200 Professionals in the Fight Against Childhood Obesity

Nearly 200 healthcare providers, researchers, educators, and community leaders came to Pennington Biomedical on September 24 for the 2026 Childhood Obesity Conference, “Be the Reason Kids Greaux Healthy.” Pennington’s Greaux Healthy initiative hosted the day, which centered on one shared goal: turning the latest science into real-world strategies that help Louisiana’s children grow up healthier.



National and local experts then led sessions on improving care in rural communities, preventing obesity early in life, encouraging healthier eating and more physical activity, and emerging treatment approaches. A poster session showcased research and community programs and gave attendees time to network. The conference also honored Dr. Katie Queen as Greaux Healthy’s Partner of the Year for her dedication to improving children’s health across the state.

What’s Ahead for 2027

- **2027 Responsible Conduct of Research (RCR) Series:** The 2027 RCR schedule will be released soon. Sessions will cover topics such as predatory conferences, financial responsibilities, AI in medical research, mental health and wellness, responsible peer review, academic collaborations, and more.
- **2027 William Visiting Speaker Series:** We’re excited to welcome leading scientists to PBRC in 2027. The series brings nationally recognized experts to share their research and meet with NORC investigators and trainees. Dates and speakers will be released soon!
- **2027 Pilot & Feasibility (P&F) Request for Applications:** Watch your inbox for the official release, including eligibility details and key deadlines.

Share Your News!

Have something to share? We want to hear from you! The NORC newsletter highlights the work and accomplishments of our members across Louisiana, and we’re now collecting content for the Spring 2027 issue. Send a brief description, along with any relevant links or photos, to Patrick Kirby at patrick.kirby@pbrc.edu