

Featured Publication: "Regular Exercise Promotes Hematopoietic Stem and Progenitor Cell Quiescence and Reduces Circulating Inflammatory Leukocytes in Mice" - Nature. SEE NEXT PAGE!

Recent Publications from NORCH Investigators

Resting-state brain connectivity predicts weight loss and cognitive control of eating behavior after vertical sleeve gastrectomy. Cerit H, Davidson P, Hye T, Moondra P, Haimovici F, Sogg S, Shikora S, Goldstein JM, Evins AE, Whitfield-Gabrieli S, Stoeckel LE, **Holsen LM.** *Obesity.* 2019; 27(11):1846-1855. PMID: [31689011](#).

GPR146 Deficiency Protects against Hypercholesterolemia and Atherosclerosis. Yu H, Rimbart A, Palmer AE, Toyohara T, Xia Y, Xia F, Ferreira LMR, Chen Z, Chen T, Loaiza N, Horwitz NB, Kacergis MC, Zhao L; BIOS Consortium, **Soukas AA,** Kuivenhoven JA, Kathiresan S, **Cowan CA.** *Cell.* 2019 Nov 27;179(6):1276-1288.e14. PMID: [31778654](#).

Growth in Infants and Children with Intestinal Failure Associated-Liver Disease Treated with Intravenous Fish Oil. Raphael BP, Mitchell PD, Gura KM, Potemkin AK, Squires RH, **Puder M, Duggan CP.** *J Pediatr Gastroenterol Nutr.* 2019 Nov 6. doi: 10.1097/MPG.0000000000002551. [Epub ahead of print] PMID: [31703040](#).

A Compendium of Genetic Modifiers of Mitochondrial Dysfunction Reveals Intra-organelle Buffering. To TL, Cuadros AM, Shah H, Hung WHW, Li Y, Kim SH, Rubin DHF, Boe RH, Rath S, Eaton JK, Piccioni F, Goodale A, Kalani Z, Doench JG, **Root DE,** Schreiber SL, Vafai SB, **Mootha VK.** *Cell.* 2019 Nov 14;179(5):1222-1238.e17. PMID: [31730859](#).

A Randomized, Placebo-Controlled Double-Blind Trial of a Closed-Loop Glucagon System for Post-Bariatric Hypoglycemia. Mulla CM, Zavitsanou S, Laguna Sanz AJ, Pober D, Richardson L, Walcott P, Arora I, Newswanger B, Cummins MJ, Prestrelski SJ, Doyle FJ, Dassau E, **Patti ME.** *J Clin Endocrinol Metab.* 2019 Nov 12. pii: dgz197. doi: 10.1210/clinem/dgz197. [Epub ahead of print] PMID: [31714583](#).

Interplay of Placental DNA Methylation and Maternal Insulin Sensitivity in Pregnancy. Hivert MF, Cardenas A, Allard C, Doyon M, **Powe CE,** Catalano PM, Perron P, Bouchard L. *Diabetes.* 2019 Dec 27. pii: db190798. doi: 10.2337/db19-0798. [Epub ahead of print] PMID: [31882564](#).

FROM OUR 2019 NORCH DIVERSITY SCHOLAR, ADOLFO CUEVAS, PhD

Assessing the Role of Health Behaviors, Socioeconomic Status, and Cumulative Stress for Racial/Ethnic Disparities in Obesity. **Adolfo G. Cuevas,** Ruijia Chen, Natalie Slopen, Katherine A. Thurber, Norbert Wilson, Christina Economos, David R. Williams. *Obesity.* 2020 Jan;28(1):161-170. doi: 10.1002/oby.22648. PMID: [31858741](#).

Pilot & Feasibility RFA Announcement:

Seeking applications for NORCH P+F Grants related to Nutrition, Obesity, and Metabolism. Award is \$30,000 over 1 year, with possibility for an additional \$30,000 during year 2 via a competitive renewal if good progress is achieved.

We highly encourage URM applicants to apply for P&F funding in response to this RFA, and we are committed to providing funding to a diverse group of P&F investigators.

Click here for more information and to apply! Application must be submitted by 5:00 p.m. on Wednesday, April 1, 2020. We expect to announce awards by Monday, June 15, 2020 and the funding period will begin August 1, 2020.

NORCH Highlight:

Call for Outstanding Manuscripts Nominations!

The Nutrition Obesity Research Center at Harvard is delighted to announce an Outstanding Manuscript Award to be given to a First Author performing investigation in nutrition, obesity, and/or metabolism. This award is intended for an Assistant Professor, Instructor, or Post-Doctoral Fellow who has made a significant scientific contribution as first author of a manuscript. **Please click here for more information and to submit** your nomination for Outstanding Manuscript. **Deadline April 1, 2020 5PM.**

SAVE *the* DATE



21st Annual Harvard Nutrition and Obesity Symposium

Non Alcoholic Fatty Liver Disease (NAFLD): Mechanisms and Novel Therapeutics

June 30th, 2020

at **The Joseph B. Martin Conference Center Boston, MA**

Speakers:

George L. Blackburn Keynote Speaker: Sudha Biddinger, MD	Bernd Schnabl, MD	Mary Rinella, MD
Kathleen Corey, MD, MPH, MMSc	Miriam Vos, MD	Arun Sanyal, MD
Zobair Younossi, MD	Zobair Younossi, MD	Steven Grinspoon, MD
Elizabeth Speliotes, MD, PhD, MPH	Manal Abdelmalek, MD, MPH	Jeffrey Schwimmer, MD
Jagpreet Chhatwal, PhD	Rohit Loomba, MD, MHS	

NORCH **HARVARD MEDICAL SCHOOL** **NIH** National Institute of Diabetes and Digestive and Kidney Diseases



@ Local NORCH Affiliates

Special Symposium Sponsored by Harvard T.H.

Chan SPH, Department of Nutrition

Monday, January 27, 2020 2:00-5:00PM

"Red Meat, Meat Alternative, & Beyond: Health Environment, Policy, and the Media"

Location: Harvard T.H. Chan School of Public Health, Kresge G1 Auditorium, 677 Huntington Avenue, Boston, MA 02115

Additional details available [here](#).

Jean Mayer USDA Human Nutrition Research

Center on Aging

Monday, February 3, 2020 at 12:00 Noon

"TBA" Sarah Lessard, Ph.D., Assistant Investigator, Clinical, Behavioral and Outcomes Research, Joslin Diabetes Center and Assistant Professor of Medicine, Harvard Medical School

Location: Jean Mayer USDA Human Nutrition Research Center on Aging, 711 Washington Street, Auditorium

2020 Research Conference on Teaching

Kitchens and Related Self Care Practices hosted by the Harvard T.H. Chan School of Public Health in association with the Teaching Kitchen Collaborative, Inc and partially supported by the NIH.

April 22-23, 2020

Featured speakers will include:

- Frank Hu, MD, MPH, PhD, Chairman, Department of Nutrition at the Harvard Chan School of Public Health
- Richard Rothstein, MD, Chair, Department of Medicine, Geisel School of Medicine, Dartmouth College
- Nicole Farmer, MD, Post-Doctoral Fellow, National Institutes of Health Clinical Center
- Chavanne Hanson, MPH, RD, Food Choice Architecture & Nutrition Manager, Global Food Team at Google

The deadline to submit an abstract is Wednesday, January 15, 2020.

To register [click here](#).

To submit an abstract [click here](#).

For a list of keynote speakers [click here](#).

Location: 1440 Multiversity in Scotts Valley, CA



Publication Spotlight

Featured: Regular Exercise Promotes Hematopoietic Stem and Progenitor Cell Quiescence and Reduces Circulating Inflammatory Leukocytes in Mice

Frodermann and colleagues, including NORCH members Drs. Ruslan Sadreyev and David Scadden, investigated the effects of 6 weeks of habitual voluntary wheel running in mice, comparing outcomes of wheel running mice to those of "sedentary" controls without access to running wheels. Activity was increased 20-fold in the wheel running group, with corresponding reduction in body weight and increase in food consumption. Voluntary wheel running significantly reduced hematopoietic stem and progenitor cell (HSPC) proliferation as measured by BrdU incorporation. Additionally, wheel running reduced the mobilization of HSPCs from the bone marrow to the circulation, with a net result of significantly reducing numbers of circulating leukocytes in all leukocyte subsets. Circulating platelets also decreased, whereas red blood cells were not affected. Hematopoietic niche profiling revealed that stromal cells with leptin receptors (LepR+) mediated these effects in response to exercise-induced reductions in circulating levels of adipose-tissue-derived leptin. When wheel-running mice were supplemented with leptin to restore the circulating leptin levels seen in sedentary mice, effects of exercise on HSPC proliferation and circulating leukocyte concentrations were reversed. Exercise did not adversely affect emergency hematopoiesis in response to lipopolysaccharide (LPS) injection. Rather, wheel running mice had increased HSPC response to LPS and increased survival when challenged with sepsis. These data suggest that regular physical activity protects against cardiovascular disease in part through reduction in inflammatory leukocytes, mediated by reduced leptin signaling in the hematopoietic bone marrow niche.

Citation:

Frodermann V, Rohde D, Courties G, Severe N, Schloss MJ, Amatullah H, McAlpine CS, Cremer S, Hoyer FF, Ji F, van Koeverden ID, Herisson F, Honold L, Masson GS, Zhang S, Grune J, Iwamoto Y, Schmidt SP, Wojtkiewicz GR, Lee I-H, Gustafsson K, Pasterkamp G, de Jager SCA, Sadreyev RI, MacFadyen J, Libby P, Ridker P, Scadden DT, Naxerova K, Jeffrey KL, Swirski FK, Nahrendorf M. Exercise reduces inflammatory cell production and cardiovascular inflammation via instruction of hematopoietic progenitor cells. *Nature Medicine*. 2019. 25:1761-1771. PMID: [31700184](#).



Our work as a Center is measured in part by the contributions we make to published science. Please cite the National Institutes of Health Grant P30 DK040561 in all publications that results from the use of NORC-H services or resources.

Do you have a suggestion for a publication feature?

Please send the citation to:

HarvardNORC@mgh.harvard.edu

Have a comment, questions or suggestion? Email us at HarvardNORC@mgh.harvard.edu

Visit our website at: www.norch.org

Cite the grant! P30 DK040561



Investigator Spotlight

Jacqueline M. Lauer, PhD, MPH

Title: Research Fellow

Current Appointments: Research Fellow,
Division of Gastroenterology, Hepatology and Nutrition,
Boston Children's Hospital

Mentor: Dr. Christopher P. Duggan



Background: I am a public health nutritionist and a research fellow in the Division of Gastroenterology, Hepatology and Nutrition at Boston Children's Hospital (BCH) under the mentorship of Dr. Christopher Duggan. I have a MPH from Tulane University's School of Public Health and Tropical Medicine and a MS and PhD from Tufts University's Friedman School of Nutrition Science and Policy. Prior to coming to BCH, I spent two years working in Uganda for the USAID Feed the Future Innovation Lab for Nutrition while conducting research for my PhD dissertation.

Research Interests: I am interested in both the dietary and non-dietary drivers of poor infant and child growth in low- and middle-income countries. Specifically, I study the causes and consequences of a subclinical, inflammatory condition of the gut termed *environmental enteric dysfunction* — or EED — which is widespread among populations living in conditions with poor water, hygiene, and sanitation. Furthermore, my research looks at the effectiveness of novel biomarkers for both studying and diagnosing the condition.

How have NORCH and/or NORCH Core Services helped:

This last year, I received a NORCH Pilot & Feasibility grant, which will be used to study a newly developed biomarker for assessing EED in a population of Tanzanian mothers and infants. We will also be looking at the effect of EED on birth, growth, and developmental outcomes in this cohort.

What inspired you to become an academic researcher?

I spent two years as Peace Corps volunteer in a small, rural village in Peru where stunting was extremely pervasive. The experience left me wanting to know more about the underlying drivers of poor nutrition, growth, and development in such contexts. I started at Tufts University's Friedman School of Nutrition Science and Policy the week I got back to the States!

What has been the most exciting moment in your career? Is there anything better than successfully defending your PhD dissertation? A year and a half later, and I am still riding that high!

What do you think is the biggest gap in our knowledge about obesity or nutrition?

The 2013 Lancet Series on Maternal and Child Nutrition highlighted that dietary interventions scaled up in 34 high-burden countries would only reduce stunting by ~20%. From this we can glean that while we know a lot about the dietary causes of poor growth, we know much less about the biological and environmental causes, which are also hugely important. For example, what is the role of mycotoxins, pesticides, air pollution, etc? We just don't know.

If you could change one thing about the way we conduct or communicate research, what would it be?

For those of us conducting research in low- and middle-income countries, I believe we should collectively place a higher value on knowledge transfer, building and training local capacity, and disseminating results in a way that is both meaningful and impactful. Publishing in high-impact journals is great, but, in fact, should not be our end goal.

What advice would you give someone considering a career in research?

To me, there is nothing more exciting than generating new knowledge and ideas, so I would absolutely say go for it. And, I would especially say this to women and people of color, because we need a more diverse set of backgrounds, perspectives, and experiences in all areas of research.

What is your favorite book? Sports team?

I'm an avid reader, and I've read at least one book/week for fun starting in college...but I could never pick a favorite! I definitely have a favorite sports team, though, and that is the New Orleans Saints!



The News from other NORC's

[Nutrition Obesity Research Center @ Columbia](#)

DeWitt Goodman Seminar Series

Wednesday, January 29, 2020- Phyllis C. Zee, MD, PhD, *Chief of Sleep Medicine in the Department of Neurology, Northwestern University Chicago.* "Enhancing Circadian Function for Brain and Metabolic Health"

[Nutrition Obesity Research Center @ Boston University CONT.](#)

Adipose Seminar Series sponsored by the Adipose Tissue Biology and Nutrient Metabolism Core (ABM) of the Boston Nutrition Obesity Research Center

Tuesday, January 14, 2020 from 10:00-11:00AM

"Environmental PPAR γ Ligands: Inducers of White, but not Brite, Adipogenesis"

Jennifer Schlezinger, Ph.D., Associate Professor of Environmental Health, Boston University School of Public Health

Location: BUMC, EBRC Building, 650 Albany Street, 7th Floor, Room 714

Tuesday, January 28, 2020 from 10:00-11:00AM

"Bioenergetics of Blood Cancer: The power of discovery biochemistry" Kelsey Fisher-Wellman, Ph.D., East Carolina Diabetes and Obesity Institute, Assistant Professor, Department of Physiology

Location: BUMC, EBRC Building, 650 Albany Street, 7th Floor, Room 714

[The Obesity Society \(TOS\) Symposium presented by the NORC at Harvard](#)

"Obesity and Addiction: Convergence of Two Critical Pathways"

Georgia World Congress Center (GWCC), 285 Andrew Young International Blvd NW, Atlanta, GA 30313

TOS ObesityWeek® Annual Meeting Scientific Sessions: Tuesday, November 3rd – Friday, November 6th, 2020

NORCH-presented Symposium on Tuesday, November 3rd, 2020

Join us for this NORCH-sponsored Symposium investigating the importance of addiction pathways in obesity!

For more information, please visit [here!](#)

[Inaugural Dennis Bier, MD Young Career Editor for The American Journal of Clinical Nutrition](#)

The American Society for Nutrition Foundation is currently seeking applicants for the inaugural Dennis Bier, MD Young Career Editor for *The American Journal of Clinical Nutrition*. In addition to assisting with the scientific publication process, the Young Career Editor is tasked with social media content creation.

Deadline for submissions: March 1, 2020

For more information, please visit [here!](#)

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