OU Health Harold Hamm Diabetes Center Quarterly Newsletter

Jed Friedman, Ph.D.,
Director,
OU Health Harold Hamm Diabetes Center
Chickasaw Nation Endowed Chair

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Director's Corner

Thank you for reading our July 2022 newsletter. In this issue, we congratulate OU Health Sciences Center 2022 Faculty Award winners and our 2022 OU Health Harold Hamm Diabetes Center (HHDC) pilot grant awardees. This year, HHDC awarded $1.83 million to 17 different investigators for up to three years of support. The return on investment from the first two years of HHDC-PHF grants following awards made in 2019 and 2020 was excellent for Bridge and Novel pilot Grants with combined seed funding of $393,998 yielding new national diabetes grants totaling $9,832,336, a return of over 2000%. HHDC research base now stands at 130 members and is supported by $20 million of annual research funding.

We congratulate **Kevin Short, Ph.D.**, Associate Professor of Pediatrics, for his new NIH grant: Understanding the metabolic pathology of pediatric obesity and Non Alcoholic Fatty Liver Disease (NAFLD), which will focus on early mechanisms, and potentially modifiable pathways and biomarkers unique to children with NAFLD. We also highlight a dialog with two diabetes junior investigators, Marisol Castillo-Castrejon, Ph.D., from Pathology, and Shaoning Jiang, Ph.D., from Pediatric Endocrinology.

Important Dates:

- The Introduction to Mass Cytometry workshop is August 9-11. View the event flyer and schedule to learn more. Schedule: | Flyer:
- Harold Hamm Diabetes Care Summit is Friday, August 26, 2022. More information, including registration, can be found here.
- HHDC Research Symposium is Friday, November 11. Abstract deadline information will be sent out soon and posted here.
- This fall we will resume our Monday seminars, HHDC Research in Progress (OGTT) meeting combined with Metabolic Research Conference with outside speakers, most of whom will travel to campus this year. The schedules will be sent out in the coming weeks.

Remember to contact us with news about publications, awards, presentations and other related information if you are currently or formerly funded by HHDC. We would love to help communicate your research stories via articles and social media. Please send updates to Katie Hoefling at Katie-hoefling@ouhsc.edu.

All the Best,

Jacob E. Jed Friedman, Ph.D.
Director, OU Health Harold Hamm Diabetes Center

Reminder for HHDC Members!

Please help us update your profile on the HHDC website.
Click on the icon to enter your information

OU Health | Harold Hamm Diabetes Center

The HHDC Newsletter is a quarterly newsletter that offers articles on HHDC events, funding opportunities, publications, research news, and training opportunities. Sign up below to receive our quarterly newsletter as well as periodic updates on the HHDC.

*To submit an item for the newsletter, please send your announcement to **katie-hoefling@ouhsc.edu***

Kevin Short, Ph.D., FACSM
Associate Professor,
CHF Choctaw Nation Chair in
Pediatric Endocrinology/Diabetes

Non-Alcoholic Fatty Liver Disease Rapidly Increasing in Children; Harold Hamm Diabetes Center Researchers Earn $2.3 Million Grant for Study

Non-alcoholic fatty liver disease (NAFLD), which doctors historically have diagnosed in adults, is rapidly increasing in children, driven by the obesity epidemic, and the condition appears to develop quicker in young people than adults. That troublesome reality has spurred researchers at the OU Health Sciences Center and OU Health Harold Hamm Diabetes Center to intensify their studies on pediatric NAFLD.

With the support of a four-year, $2.3 million grant from the National Institute of Diabetes and Digestive and Kidney Diseases, a research team led by Kevin Short, Ph.D., has launched a study that aims to better understand the characteristics that drive the development of NAFLD in young people, and to identify biomarkers that could one day be used to monitor treatments.

NAFLD, a buildup of excess fat in the liver not related to alcohol use, leads to inflammation and fibrosis in the liver. It is the most common liver disease worldwide, affecting nearly 40% of youth with obesity and 10% of the general pediatric population, and it is especially prevalent in Oklahoma. Diabetes is often diagnosed along with NAFLD.

“The reason this is important is because we don’t have many definitive tests for fatty liver disease.”

“NAFLD in children is paralleling what we see with Type 2 diabetes — they are diseases formerly observed almost exclusively in adults. It is concerning that children are developing these diseases because they’ll have a lifetime burden of care. With NAFLD in children, the condition not only worsens at a faster pace than it does in adults, but an increasing number of young people are requiring liver transplants by the time they reach young adulthood. In order to develop new treatments, we need to distinguish how kids may be different than adults who have the same disease,” said Short, an associate professor in the Department of Pediatrics at the OU College of Medicine.

Although improved nutrition and exercise can reduce the liver fat that causes NAFLD, such behavior changes can be difficult for children to maintain, and no other treatments currently exist for children. Pediatric gastroenterologist Sirish Palle, M.D., who specializes in liver diseases, is collaborating with Short for the study, conducting liver biopsies to confirm NAFLD and enrolling patients and families. As a physician, he often sees patients only after NAFLD has progressed to a more severe stage.

“NAFLD does not have any symptoms,” said Palle, an associate professor in the Department of Pediatrics at the OU College of Medicine. “Normally when you think about liver disease, you think of someone being jaundiced or not feeling well, but that’s not the case with this disease. Unless a pediatrician checks a patient’s liver enzymes, NAFLD won’t be discovered until it is more advanced. Right now in our clinic, we spend a lot of time counseling patients, working with a

nutritionist and a psychologist. But it's getting more challenging and complicated with no medications and no treatments available."

The study has three components. In the first, children will drink a liquid that contains a harmless tracer that will allow researchers to measure the metabolism of glucose and lipids, done through a blood draw. Previous research in adults with NAFLD has shown they have higher rates of fat production in the liver throughout the day, Short said. The same may be true in children, but has not yet been studied. Researchers also will analyze patients' ability to make new glucose molecules, another underlying problem in adults with NAFLD that has not yet been established in children, as well as insulin sensitivity — how well they are controlling their blood glucose and how much insulin it takes to do so.

"The kids have to drink these special drinks, which is a pretty non-invasive way for us to make comparisons between kids who have been diagnosed with NAFLD, kids who are obese but don't have NAFLD, and kids who are normal weight," Short said. "This is a key part of our study design — we can measure molecules in blood that will help us determine metabolic differences among those groups."

In the second part of the study, researchers will use blood samples to analyze the concentration of microRNAs, a class of molecules involved in regulating gene expression. They hope this analysis will help them better diagnose and stage NAFLD.

"The reason this is important is because we don't have many definitive tests for fatty liver disease," Short said. "The gold standard continues to be a biopsy, but that's pretty invasive and you can't repeat it frequently. Liver enzymes can be measured, but they don't always confirm the disease and they're not a good gauge of its severity. We hope our work allows us to develop a panel of things to measure so that we can better understand whether a child has fatty liver disease and whether it's getting worse or improving." The team is particularly focused on two microRNAs that preliminary data show to be increased in children with NAFLD.

Finally, researchers will use advanced imaging tools to analyze tissue from liver biopsies. The sophistication of today's imaging equipment provides a greatly enhanced picture of the amount and location of lipids, inflammation and fibrosis in the liver, which could shed light on why youth with NAFLD get worse more quickly.

Jed Friedman, Ph.D., director of Harold Hamm Diabetes Center, is co-leading the work of the grant and contributing his expertise on the molecular pathways of NAFLD. He said the study is an example of the importance of team-based science and will provide much-needed new information about the pediatric version of the disease.

"NAFLD is a multifactorial disease. At present, it remains unclear what the molecular pathways are that lead to childhood NAFLD," Friedman said. "This study, the first of its kind, will play a significant role in setting the research agenda for pathways to prevention."

Research reported in this news release is supported by the National Institute of Diabetes and Digestive and Kidney Diseases, a component of the National Institutes of Health, under the award number 1R01DK129656-01A1. The research also has been funded by Presbyterian Health Foundation in Oklahoma City.

HHDC Hosts Reception at American Diabetes Association 82nd Scientific Sessions to honor 2021 Hamm Prize Laureate, Prof. Andrew Hattersley

HHDC hosted our annual reception at the American Diabetes Association 82nd Scientific Session in New Orleans, Louisiana on Saturday, June 4, 2022. The reception honored the Harold Hamm International Prize for Biomedical Research in Diabetes 2021 Laureate, Andrew T. Hattersley, CBE, FMedSci, FRS. Over 100 researchers and clinicians from all over the world attended to congratulate and celebrate professor Hattersley, and network with one another. Learn more about the Prize and why professor Hattersley was chosen here.

SAVE THE DATE!

The HHDC Research Symposium will be **Friday, November 11** at the Samis Education Center.

Abstract deadline information will be sent out soon and posted here.

Start working on your abstracts now!

Marisol Castillo-Castrejon, Ph.D.
Assistant Professor of Research
Department of Pathology

Q&A with HHDC Junior Investigators

Q: Tell us about your background. Where did you earn your training?

I was born and raised in Mexico City (Mexico) where I earned a Bachelor of Science in Nutrition & Food Science at Iberoamerican University, a Master of Science with honors and a doctorate in Biological Sciences at National Autonomous University of Mexico. I received additional training in nutritional epidemiology and reproductive toxicology from University of Michigan, Ann Arbor (USA) and in placental biology from the University of Colorado, Denver (USA).

Q: Why did you pursue research?

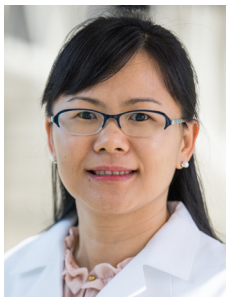
From a young age, I had the opportunity to learn different disciplines from professors and scientists at distinctive universities in my home country and internationally. They not only inspired in me a love of their scientific fields but also guided me on my path to becoming a researcher. I have been fortunate to have international and multidisciplinary training that includes clinical and basic science disciplines. This allows me to work in areas affecting women's health throughout their lifespan.

Q: What drew you to diabetes research specifically?

Previously I had a clinical practice with pregnant women and children living in urban areas such as Mexico City and rural areas where major health disparities are today still present. I saw how some of the main diseases affecting women, especially during pregnancy, are poorly understood and the limited treatment measures available in México and in many other countries. Pregnancy is critical as these conditions lead to increased incidence of maternal mortality and infant morbidity, leaving the mother-infant dyad at a disadvantage for life. Research findings during my doctoral and postdoctoral training primed my interest to study obesity, gestational and Type 2 diabetes, as well as gestational and menopausal weight gain as an important risk factor for developing Type 2 diabetes later in life.

Q: What is your hope for the future of diabetes research?

As a clinical and basic science researcher, my hope for the future of diabetes research is to be able to successfully combine epidemiological and pre-clinical data to better understand risk factors that lead to maladaptations of insulin-sensitive organs from conception to adulthood. Improved knowledge of developmental programming of diabetes will allow the development of targeted therapeutic interventions and treatments to advance public health and better inform public health policies.



Shaoning Jiang, Ph.D.
Assistant Professor
Department of Pediatrics

Q&A with HHDC Junior Investigators (cont.)

Q: Tell us about your background. Where did you earn your training?

I received a medical degree from Peking University Health Science Center in China and a doctoral degree (Ph.D.) in Molecular and Cellular Pathology at the University of Alabama at Birmingham (UAB). My postdoctoral studies were conducted at UAB and University of Oklahoma Health Sciences Center. My doctoral and postdoctoral studies involved studies on molecular mechanisms of insulin resistance, and the interaction between energy signaling and mitochondrial function in inflammation, which further evolved to my current research interests including mechanisms of fetal programming of metabolic diseases, with particular interest in epigenetic regulation of gene expression, placental mitochondrial/energy signaling, and Brown/beige fat development.

Q: Why did you pursue research?

I enjoy the opportunity of trying out new ideas, the problem-solving process, and the joy of knowledge sharing and learning.

Q: What drew you to diabetes research specifically?

When it came to the time for me to choose a lab for my dissertation research in my first year at UAB, I was actively looking for a specialized research lab. I happened to attend a seminar given by Joe Messina, Ph.D., discussing diabetes and stress and was deeply impressed. I was lucky to join his lab for my graduate studies and started my career in diabetic research since then.

Q: What is your hope for the future of diabetes research?

In addition to studies on better management of diabetes and its complications, preventing its occurrence and its metabolic sequelae in the offspring is becoming an important area of research. In this process, both genetics and epigenetics are involved. I hope these studies will attract more funds and bring novel prevention strategies.

Jennifer Chadwick, B.S. (Choctaw)
Native American Diabetes Research
Program Coordinator
Department of Pediatrics

Native American Research Partners

Often investigators inquire about partnering with tribal Nations on research endeavors, especially with the intent to expand their recruitment of minority participants within their studies. For members of marginalized communities, inclusion matters, and research is no different. However, there are numerous reasons why historically, Native Americans are underrepresented in research studies. To conduct a more inclusive study, investigators will need to understand and acknowledge the causes of the underrepresentation.

Before an investigator can effectively partner with a Native American community, they must learn and acknowledge the previous ethical missteps and research injustices that have occurred. The Native Center for Excellence published an article entitled, “Steps for Conducting Research and Evaluation in Native Communities”. This article explains the challenges of research partnerships in tribal communities and the steps to overcome them. They note the importance of establishing a respectful relationship through appreciating the Nation’s culture and history while honoring their sovereignty, traditions, and agreements including the importance of privacy, data ownership, and research review processes.

Investigator(s) should spend time within the partnering community to meet with tribal leaders and elders, appreciating their research needs and the concerns of their community. A respectful relationship happens over time and requires patience while remaining mindful of the community’s openness to research. It is recommended to build a research relationship with the tribal community before a study is designed allowing for a more equitable and culturally appropriate study. It is also important to note the research partnership does not end with study design. Many tribal Nations require research investigators to consent to ongoing ethical review and data ownership agreement for the duration of the study.

The key to building and maintaining a trusting research partnership is time, which requires intensive planning to assure all approvals are in place. Long-term, sustainable research goals are important for the investigator to consider before building a research partnership. Remaining transparent and honest throughout the process while maintaining consistent and open communication will aid in the elimination of any misunderstanding or ethical misconduct while ensuring inclusive, beneficial research is attained.

TODAY Study Data Dissemination and Closeout

Recently, the TODAY Study staff traveled to the Choctaw Nation of Oklahoma to thank them for their successful partnership with the TODAY Study and present some of the recent study data. *Jeanie Tryggestad, M.D., OUHSC Study Site Investigator for the TODAY Study and Todd Hallmark, FACHE Executive Director of Health Operations of the Choctaw Nation*

L to R: Carey Fuller Choctaw Nation IRB Administrative Director; Jeanie Tryggestad, M.D., OUHSC Study Site Investigator for the TODAY Study; David Wharton Director of the Choctaw Nation Health Services Risk Management; Todd Hallmark FACHE Executive Director of Health Operations of the Choctaw Nation; Jennifer Chadwick TODAY Study Native American Coordinator; Dannielle Branam Choctaw Nation Research Scientist III; Jeff Preske OUHSC Study Site Coordinator TODAY Study

2022 Faculty Awards

Mary Beth Humphrey, M.D., Ph.D.
Professor of Medicine, University of Oklahoma College of Medicine

Regents' Award for Superior Research and Creative/Scholarly Activity

Dr. Mary Beth Humphrey is the Associate Dean of Research at the University of Oklahoma Health Sciences Center, Professor, Chief and McEldowney Chair in Immunology of the Division of Rheumatology, Immulogy and Allergy at the University of Oklahoma College of Medicine, as well as a HHDC member. Her research focuses on the impact of myeloid cells in human osteoporosis, heart failure with preserved ejection fraction, Alzheimer's disease, and polycystic kidney disease. She studies homeostatic bone remodeling in osteoarthritis and chronic inflammation-induced osteoporosis and is exploring molecular mechanisms transmitted via TREM2 in macrophages and osteoclasts, including related pathways in microglial cells and brain-resident macrophages in Alzheimer's disease. Additional work revealed anti-inflammatory effects of vagal nerve stimulation with altered macrophage and T cell filtration into the heart that is associated with decreased cardiac fibrosis and improved heart function. New vagal nerve stimulation studies in osteoarthritic mice will determine if it will alleviate pain or improve joint health. Other studies explore the role of unique TREM2- expressing cyst-associated macrophages in cyst formation in polycystic kidney disease.

Katherine O'Neal, Pharm.D.
Associate Professor of Pharmacy Clinical and Administrative Sciences, University of Oklahoma College of Pharmacy

President's Awards: Presidential Professorship

Dr. Katherine O'Neal has been with the University of Oklahoma College of Pharmacy since 2010 and is currently an Associate Professor in the Department of Pharmacy: Clinical and Administrative Sciences and Adjunct Associate Professor with the College of Medicine Department of Internal Medicine, as well as an HHDC member. Her clinical practice is with general internal medicine ambulatory care. Dr. O'Neal also serves as the ambulatory care pharmacy residency program director, ambulator care specialty track degree option director, student faculty advisor for 3 organizations, and spearheaded the development of the dual PharmD/MBA program. She has served as the Chair of the HSC Faculty Senate and currently serves as Secretary-Elect.

David Fields, Ph.D.
Associate Professor of Pediatrics, University of Oklahoma College of Medicine

Provost's Awards: Research – Senior Faculty (Basic Sciences Research)

Dr. David A. Fields is an Associate Professor in the section of Diabetes and Endocrinology in the Department of Pediatrics and the CHF Chickasaw Nation Endowed Chair in Pediatric Diabetes. He completed a doctoral degree in Exercise Physiology from Auburn University and received post-doctoral training in physiology and nutrition at Washington University in St. Louis. The overarching focus of his research program is to understand how perinatal body composition affects future health. His current NIH study characterizes human breast milk in a diverse group of mothers with a focus on better understanding how it impacts early body composition. Dr. Fields has published 93 peer-reviewed publications, conducted 21 IRB-approved study protocols, and received over $3.5 million from federal, local, and industry funding sources. He also mentors junior scientists through his role as Associate Director of the Pediatric Metabolic Research Program.program. She has served as the Chair of the HSC Faculty Senate and currently serves as Secretary-Elect.

David Sparling, M.D., Ph.D.,
Associate Professor
Associate Section Chief of Pediatric Endocrinology CHF
Paul and Ann Milburn Chair in Pediatric Diabetes

Clinic Updates

Pediatric Diabetes & Endocrinology Clinic

The pediatric diabetes and endocrinology clinic continues to be VERY busy. We've welcomed new team members, including Timpy Vess, RN, with a few more coming. We've also had some great team members move on to new employment opportunities, and we always wish them the best! We're all very excited about the new technology and treatments talked about this year at the ADA Scientific Sessions; new pumps are coming, as are new CGM's, and we're just awaiting either insurance approvals for coverage, training for our staff, and/or approval by the FDA (usually all 3), but exciting things are on the horizon. We will also soon have providers at the Oklahoma Children's Hospital clinic in Norman: myself, and Dr. Becky Schaub will each be down there once a month. Last but not least, we're also gearing up for in-person CAMP! Camp Blue Hawk will be back, and we couldn't be more excited to see some old and some new faces.

Mary Zoe Baker, M.D.,
David Ross Boyd Professor of Medicine
Department of Internal Medicine

Clinic Updates

Adult Diabetes & Endocrinology Clinic

We are two weeks into the new academic year and have welcomed two new first year fellows, Hamsa Aljumaili and Anshinee Mahaldar. They join Peter Lambert and Spencer Campbell who are our senior fellows. Dr. Jonea Lim is the new Endocrine Fellowship director this year. I know it will be a great year.

This year will be one of change for the clinic as the Endocrine Fellows Clinic in the PPOB will be moving to the HHDC Adult Endocrine clinic. We are excited about this move and think it will improve patient care and our fellows training. This should happen around the first of the year.

New Grants to HHDC Members:

PI: Kevin Short, Ph.D.
Department of Pediatric Endocrinology/Diabetes
Co-PI: Jed Friedman, Ph.D.
Funding Organization: NIH/NIDDK
Grant Type: R01
Title of Grant: **Understanding the metabolic pathology of pediatric obesity and NAFLD**
Dates: 04/02/2022 – 01/31/2026
Amount Awarded: $2,296,889

PI: Weidong Wang, Ph.D
Associate Professor, Division of Adult Endocrinology
Funding Organization: NIH/NIDDK
Grant Type: R01
Title of Grant: **Developing proinsulin misfolding inhibitors for beta cell protection and diabetes treatment**
Dates: 07/15/2022 – 06/30/2027
Amount Awarded: $1,932,260

New Grants to HHDC Members:

NOVEL PILOT PROJECT GRANTS

PI: Marisol Castillo-Castrejon, Ph.D.
Department of Pathology
Funding Organization: HHDC
Grant Type: Novel Pilot Project
Title of Grant: ***The Role of Adaptive Immune System and Estrogen in the Risk of Diabetes after Menopause***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $50,000

MPI: Jacquelyn Gorman, Ph.D.
OMRF; Arthritis & Clinical Immunology Research Program
Funding Organization: HHDC
Grant Type: Novel Pilot Project
Title of Grant: ***The role of IFIH1 risk variant in the promotion of type 1 diabetes by coxsackievirus infection***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $50,000

PI: Dean Myers, Ph.D.
Department of Obstetrics and Gynecology
Funding Organization: HHDC
Grant Type: Novel Pilot Project
Title of Grant: ***The Impact of Maternal Diet on Reprogramming of Fetal Airway Epithelial Stem/ Progenitor Cells***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $50,000

PI: Jennifer Peck, Ph.D.
Department of Biostatistics & Epidemiology
Funding Organization: HHDC
Grant Type: Novel Pilot Project
Title of Grant: ***Lactational Environmental Exposures: Associations with Early Growth and Adiposity in the First Months of Life***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $50,000

PI: Kruti Shah, M.D.
Department of Pediatric Endocrinology/Diabetes
Funding Organization: HHDC
Grant Type: Novel Pilot Project
Title of Grant: ***Lactational Environmental Exposures: Associations with Early Growth and Adiposity in the First Months of Life***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $50,000

NOVEL PILOT PROJECT FOR POSTDOCS GRANTS

PI: Lijie Gu, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC
Grant Type: Novel Pilot Project for Postdocs
Title of Grant: ***Role of Cullin-RING E3 Ligases in adipose differentiation and obesity***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $69,838

PI: Kameron Sugino, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC
Grant Type: Novel Pilot Project for Postdocs
Title of Grant: ***Consequences of Maternal Obesity and Maternal Omega-3 Supplementation on Infant Gut Commensal Microbes and Neonatal Immunity***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $70,000

TEAM SCIENCE GRANTS

PI: Yan Chen, Ph.D.
Department of Ophthalmology
Funding Organization: HHDC and PHF
Grant Type: Team Science - Year Two
Title of Grant: ***Mitochondrial Trx2 in the pathogenesis of diabetic retinopathy***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $100,000

PI: Tiangang Li, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC
Grant Type: Team Science - Year One
Title of Grant: ***Novel Roles of Cullin-RING E3 Ligases in Liver Pathophysiology***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $97,797

PI: : Ken Jones, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC and SCC
Grant Type: Team Science - Year Two
Title of Grant: ***Using Machine Learning models to quantify molecular phenotypes and personalized therapeutic strategies for diabetic cancer patients***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $99,661

New Grants to HHDC Members:

TEAM SCIENCE GRANTS (continued)

PI: Stephanie Pierce, M.D.
Department of Obstetrics and Gynecology
Funding Organization: HHDC
Grant Type: Team Science - Year Two
Title of Grant: ***Pilot RCT Intervention Targeting Elevated Triglycerides with a Point-of-Care Meter and Omega-3 Fatty Acids to Normalize Triglycerides and Fetal Growth***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $283,690

PI: Michael Rudolph, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC and PHF
Grant Type: Team Science - Year Two
Title of Grant: ***Maternal Exercise Induces Milk Thermogenic Brown Adipose Tissue Activators that Stimulate Infant Metabolism***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $100,000

PI: Archana Unnikrishnan, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC and PHF
Grant Type: Team Science - Year Two
Title of Grant: ***The Long-Term Effects of Maternal Obesity on Aging and Healthspan***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $100,000

EQUIPMENT GRANTS

PI: John Clegg, Ph.D.
Department of Biomedical Engineering
Funding Organization: HHDC
Grant Type: Equipment
Title of Grant: ***Equipment Procurement for Biomedical Engineering Startup***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $175,000

PI: Ken Jones, Ph.D.
Harold Hamm Diabetes Center
Funding Organization: HHDC
Grant Type: Equipment
Title of Grant: ***NextSeq 2000: an in-house sequencing resource for OUHSC***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $414,885

PI: Benjamin Miller, Ph.D.
OMRF; Aging & Metabolism Research Program
Funding Organization: HHDC
Grant Type: Equipment
Title of Grant: ***Sable Promethion for studies of obesity, aging and metabolism***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $234,665

PI: Weidong Wang, Ph.D.
Department of Internal Medicine
Funding Organization: HHDC
Grant Type: Equipment
Title of Grant: ***Acquisition of a Sable Environmental Control Cabinet for Obesity and Energy Expenditure Studies***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $46,290

PI: Katherine O'Neal, PharmD
Department of Pharmacy Clinical and Administrative Sciences
Funding Organization: American Society of Health-System Pharmacists
Grant Type: Pharmacy Resident Research Grant
Title of Grant: ***Diabetes and hearing impairment: knowledge, attitudes, and practices among providers and patients***
Dates: 07/01/2021 to present
Amount Awarded: $4,088

PI: Kruti Shah, Ph.D.
Department of Pediatric Endocrinology/Diabetes
Funding Organization: PHF
Grant Type: Clinician Scientist Development Award – Year Two
Title of Grant: ***Effect of Maternal Health on Breast Milk microRNA Composition and its Role in Infant Growth***
Dates: 07/01/2022 – 06/30/2023
Amount Awarded: $75,000

HHDC Presentations at National Meetings:

Friedman, JE *Maternal Western Diet Programs Inflammatory Trained Immunity in Fetal and Juvenile Non-human Primates through Hematopoietic Stem Cells and Macrophages* Keystone Conference: Myeloid Cells: From Birth to Immunity and Disease, Banff, Canada. March 2022.

Theresa N Jackson, MD, Gary G Grinberg, MD, **Zhamak Khorgami, MD**, Panduranga Yenumula, MD. *MEDICAID EXPANSION: The impact of health policy on bariatric surgery*. American Society of Metabolic and Bariatric Surgery Annual Meeting. Dallas, TX. June 2022.

Theresa Jackson, Bradley Cox, Gary Grinberg, Panduranga Yenumula, Robert Lim, Geoffrey Chow, **Zhamak Khorgami**. *National trends in usage of bariatric surgery for class I obesity: An analysis of MBSAQIP. American Society of Metabolic and Bariatric Surgery Annual Meeting*. Dallas, TX. June 2022. Read more here

Sewell H, Planas L, Skaggs J, Lim J, Johnson C, **O'Neal KS**. *Diabetes and hearing impairment: knowledge, attitudes, and practices among providers and patients*. American Society of Health System Pharmacists Midyear Clinical Meeting. Virtual Conference. December 2021.

Myers, D *The Olive baboon, Western-style diet, maternal obesity and fetal/placental impact: what we are learning along the way about diet versus obesity in a non-human primate*. Aspen Perinatal Biology Symposium. Aspen, CO. August 2022.

O'Neal KS. *Improving Health Literacy*. American Diabetes Association 82nd Scientific Sessions. New Orleans, LA. June 2022. Read more here

Skaggs J, Henderson J, **O'Neal KS**, Lim J. *Nivolumab induced type 1 diabetes*. Endo 2022. Atlanta, GA. June 2022.

Nguyen A, Dwyer, K, Jones E, **O'Neal KS**. *Academic-Community engagement to develop a culturally relevant diabetes intervention program*. MNRS Annual Research Conference. Schaumburg, IL. April 2022.

Fallin T, Sheehan R, McCarron, Neely S, Schwier N, **O'Neal KS**. *Assessing dapagliflozin prescribing patterns in patients with heart failure with and without comorbid type 2 diabetes mellitus*. American Society of Health System Pharmacists Midyear Clinical Meeting. Virtual Conference. December 2021.

Sciarrillo CM, BH Keirns, DC Elliott, SL Clarke, S Palle, **KR Short**, SR Emerson. *Children with steatosis and fibrosis have a blunted postprandial FGF19 response to a high-fat meal*. Annual meeting of the American Society of Nutrition: Nutrition 2022. Live Online, June 2022.

Tryggestad JB. *Adverse Clinical Outcomes in Pregnancy for Women with Type 2 Diabetes—Maternal-Fetal Mortality and Morbidity*. American Diabetes Association 82nd Scientific Sessions. New Orleans, LA.

Selected Publications:

Li Zhang, **Karen Jonscher**, Zuyuan Zhang, Yi Xiong, Ryan Mueller, **Jacob Friedman**, and **Chongle Pan**. Islet Autoantibody Seroconversion in Type-1 Diabetes is Associated with Metagenome-Assembled Genomes in Infant Gut Microbiomes. *Nature Communications*, 2022 (In press).

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New HHDC Lab Staff:

MaJoi Trammell
Department of Microbiology & Immunology
Bioinformatics Analyst
Jones Lab