Newsletter of the Duke Division of Endocrinology, Metabolism, and Nutrition

medicine.duke.edu

Summer 2020

Director's Message

We began to compile our annual newsletter in simpler times, before the COVID-19 pandemic hit and before the sudden death of our beloved colleague, Mark Feinglos. The last months have been difficult and sad. We know that the weeks ahead may bring even more change and challenge. We're sending this newsletter to mark the strength and resiliency of the people in the Division, and to pledge our continued support to all our colleagues across the country.

Greetings from Durham and the Duke Division of Endocrinology, Metabolism, and Nutrition.

The Division has continued to grow in numbers and clinical initiatives. There are now 32 faculty endocrinologists and 14 advanced practice providers performing a range of inpatient and outpatient services across Duke Health. We have clinics in Durham, Brier Creek, South Durham, and Raleigh, and we provide consultative services at Duke University, Duke Regional, and Duke Raleigh hospitals. These practices see patients with problems across the spectrum of endocrinology at steadily increasing volumes.

While diabetes remains a major focus of our clinical efforts we continue to feature specialty programs in metabolic bone disease, endocrine cancer, and pituitary disease. New initiatives are ongoing for gender medicine, endocrinopathies related to immunotherapy, secondary hypertension and pediatric-to-adult transitional care. Our inpatient services have expanded to include preadmission and discharge management of diabetes. A major goal of our clinical programs is integration with other groups in Duke Health around specific diseases to improve coordination of care and to enhance patient access and convenience.

There are 10 independent research programs in the Division, led by clinical and nonclinical faculty. These efforts include 13 research scientists supervising more than 30 students and post-doctoral fellows. Research in the Division runs the full spectrum from basic and translational studies at the Endocrinology labs in the Duke Molecular Physiology Institute to clinical trials at the Duke Clinical Research Institute. We are pleased to announce the award of a new NIH Diabetes Endocrinology Research Center (DERC) grant, representing a collaboration between the Wake Forest, UNC-Chapel Hill, and Duke Medical Centers. Expansion of our research base and the general focus on diabetes and metabolism presents many opportunities for collaboration across the translational spectrum and our goal is to seamlessly connect discoveries in mechanisms of disease to useful clinical applications.

As we open a new decade, the Division faces some challenges that we are working hard to meet. There is a shortage of endocrinologists in North Carolina, and our clinical responsibilities in the region continue to grow. We are developing new ways to increase our clinical reach by moving our practices into the community and increasing the use of strategies like e-consultation and video visits. The technical advances now available for diabetes care have brought new hope for many patients, but also new requirements for data management and analysis; we have made development of systems to leverage new technology a priority. Finally, we continue to attract outstanding physicians to our fellowship program and teach in the Duke School of Nursing and the Duke Physician Assistant Program to keep the pipeline rich in talented young people interested in becoming endocrinologists.

Sincerely, Dave

David D'Alessio, MD

Professor, Dept of Medicine Chief, Division of Endocrinology Duke University Medical Center Ph: 919.684.5778 david.d'alessio@duke.edu



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Teaching and Faculty Development

Message from Matthew Crowley, MD, MHS, director of the Endocrinology Fellowship Program

I am pleased to report that we will be bringing aboard three outstanding firstyear fellows in July 2020. In the clinical track: Kathryn O'Donnell, MD, graduated from Duke University School of Medicine, and is currently a third-year internal medicine resident at Duke. She has scholarly interests in clinical education and QI, and has been an active collaborator with members of our Division. In the research track: Jashalynn German, MD, graduated AOA from Morehouse School of Medicine and is currently a third-year internal medicine resident at Johns Hopkins Bayview. Her scholarly interests focus on healthcare disparities and health of underserved populations. Scott Carlson, MD, graduated from the University of Texas Southwestern Medical School and is currently a third-year internal medicine resident at Baylor. His scholarly interests focus on health services research and healthcare disparities. This is a talented group and they will fit in perfectly with our Duke

Crowley



O'Donnell



German



Carlson

Endo family. Special thanks to Traci Womble, our fellows, and our faculty interviewers for their stellar work during the recruitment process this year.

Current fellows of the program highlight two clinical areas that continue to expand and grow. The **Thyroid Ultrasound Clinic**, where they learn both diagnostic and fine-needle aspiration or FNA of thyroid nodules, is now offered at Clinic 1A on our main campus (led by Anne Weaver) and at Duke Health Center South Durham (led by Carly Kelley). The **Adult Gender Medicine Clinic** was

created in January 2018 as a joint effort of the Duke Division of Endocrinology and the Department of Family Medicine. Its goals are optimal multidisciplinary patient care, education of our trainees, and research. **Carly Kelley, MD, MPH** is



Kelley

director. Our fellows remark on having great experience and confidence in managing transgender medicine patients.

Teaching Internal Medicine Residents

Carly Kelley is a leader of our many endocrinology faculty who participate as preceptors and teachers/discussion leaders for the new internal medicine ambulatory thread rotation and teaching experience. The Renal/ Rheum/Endo thread has increased exposure to Ambulatory Endocrinology earlier in residency training and has facilitated continuity with the interns. They are using an innovative flipped classroom approach to teaching as part of the thread.

Success of First Endocrine Specialty for NPs in the Country

Kathryn Kreider, DNP and Jennifer Rowell, MD are leaders in the endocrinology specialty for nurse practitioners (NPs), the first of its kind in the country. The NP endocrine specialty is made up of three courses, including advanced diabetes management, general endocrinology, and a clinical course. This specialty certificate allows NPs to have more specific training in endocrinology and gives them additional expertise to practice in either internal medicine or an endocrinology setting. In the last three years, more than 30 students have completed the specialty.



Kreider



Rowell

Faculty Development and Professionalism

 Duke AHEAD (@ahead_duke) is a faculty-development resource for health profession educators and is directed by Diana McNeill, MD.



McNeill

 PACT 2.0 is the Professionalism Accountability Team for Duke Health.
Peer messengers deliver support

for a culture of professionalism and safety. Diana McNeill, MD co-directs this program with William Richardson, MD and Cynthia Gordon, RN.

EndocriNews

Clinical Expansion and Diabetes Care

The Duke Endocrinology, Metabolism, and Nutrition Division has been growing by leaps and bounds in recent times, and there are ambitious plans in place for continued expansion in the upcoming year. We are devoted to compassionate and sophisticated care of patients with disorders related to the endocrine system, including diabetes, osteoporosis and other bone diseases, disorders of cholesterol and lipids, pituitary and adrenal abnormalities, and thyroid and parathyroid disease. Here are several examples of the expansion of our clinical services and diabetes care:

Duke Endocrinology of Raleigh



In August 2019, the division started endocrinology services at Duke Raleigh Hospital (DRAH). Dr. Ali Qamar is medical director for inpatient endocrinology and diabetes management services. On the inpatient side, there is Monday-Friday, 8am-5pm in-house coverage. We are collaborating with surgery on the outpatient side for pre-op optimization. We will have an Endocrine Hospital Follow-up Clinic for close follow-up after discharge from DRAH.

Anne Weaver is medical director for outpatient services, <u>Duke Endocrinology of Raleigh</u>. The group is working to establish a Duke Raleigh Hospital follow-up clinic for better access and continuity of care, as at the main hospital. It is also working with neuro/spine and ortho/ joint surgeons to create a POET-type clinic (see POET article, page 8) for diabetes pre-operative optimization and to improve post-operative outcomes. Both efforts are in the beginning stages.

Dr. Weaver and Dr. Qamar are seeing general endocrinology patients. Dr. Sarah Zaheer recently joined the faculty and has an osteoporosis and metabolic bone clinic.

1A Main Campus Duke Endocrinology Clinic



At the <u>1A Main Campus Duke Endocrinology Clinic</u>, our endocrinologists offer a variety of endocrinology services for adults, including treatment for diabetes, thyroid disease, and other hormone-related disorders. We diagnose and treat endocrine-related conditions that affect a patient's daily life and long-term health.

Among the services offered are:

Diabetes pump and sensor clinics: Dr. Natasha Akhter and Jenna Brothers, PA, have a Wednesday pump and sensor clinic. Dr. Jennifer Rowell has a Tuesday morning pump and sensor clinic. Both clinics are designed with extra time to foster excellent patient care and a supportive teaching environment. The clinic is designed to help residents, fellows, and NP/PA students learn details about how pumps work, adjusting basal rates and bolus ratio. They also learn how to interpret continuous glucose monitor (CGM) data.

Clinical pharmacy clinic and pharmacy services: The Clinical Pharmacist at Duke Endocrinology, Dr. Sarah Kokosa, ensures safe and effective use of medications by our patients. The pharmacist may assist with choosing the optimal drug or answering patients' medication questions. We also offer dedicated appointments with our pharmacist to help with drug selection, monitoring, and education. Also, a pharmacy technician is available to assist patients who are uninsured or cannot afford their medication.

Duke Endocrinology Brier Creek Campus

Endocrinologists at <u>Duke Endocrinology at Brier Creek</u> offer expert diagnosis and treatment of diabetes and other diseases and conditions affecting the endocrine system including thyroid, parathyroid, adrenal, pituitary, and gonadal disorders. Our diabetes treatment programs include intensive education programs for patients and their families. *Continued on page 4*

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EndocriNews

Dr. Jyothi Rao is the Medical Director at Brier Creek. She oversees clinic operation along with the health center administrator. They



collaboratively develop clinic protocols and address clinic needs based on acute needs such as hiring staff to assist with prior authorization and the patient assistance program. They are currently working on acquiring social worker support. They are promoting a bone density program, reaching out to providers in the Wake County and East Durham areas. Also, they are developing a concept of an RN diabetes care coordinator role at Brier Creek. The coordinator currently assists with insulin, glucagon, GLP-1RA, Dexcom CGM, and Libre CGM teaching, as well as helping patients connect and share pump and sensor data with the clinic.

Duke Endocrinology South Durham



Dr. Michael Canos is the Medical Director at <u>Duke</u> <u>Endocrinology South Durham</u>. He has been working to establish a Type 1 diabetes mellitus and technology program that includes a traditional insulin pump and sensor clinic as well as video visits (see article below) and remote patient monitoring for patients with uncontrolled Type 1 diabetes with frequent hypoglycemia.

He is in the process of expanding video visits and continuous glucose monitoring service (CGMS) to the POET program (see article, page 8) to optimize perioperative glycemic control. The sensors will be placed in the preoperative anesthesia clinic, and the patients are then scheduled to see either an endocrinologist or APP for close follow-up within 7-14 days for data interpretation and medication titration. During the in-person visit, a follow-up video visit will be set up to facilitate additional medication dose titration.

News from our clinics

- Bryan Batch is the new endocrinology chief at the Durham VA Medical Center.
- Jenna Brothers and Adrienne Barnosky have a endocrine disorders in pregnancy clinic at Maternal Fetal Medicine.
- Diana McNeil has a Duke Outpatient Clinic (DOC) in Diabetes Mellitus. The DOC-DM clinic is an interdisciplinary clinic held twice monthly at the DOC. Our interdisciplinary team provides consultative diabetes management for patients with uncontrolled diabetes complicated by social or other health issues. Diana McNeill is the attending provider. Allyson Rhinehart, PA, leads the interdisciplinary pre-clinic huddle. An endocrine fellow participates in the clinic, along with a medical resident, a Doctor of Pharmacy, social workers, and nurses.
- Carly Kelley, Andrea Coviello, and Jennifer Rowell will start a polycystic ovarian syndrome or PCOS Clinic where patients will be seen at South Durham on Mondays/Wednesdays or clinic 1A on Tuesdays. The goal of our clinic is to provide excellent care to patients with PCOS and facilitate research in this area.
- Andrea Coviello, works in a new collaborative clinic, <u>Duke Cardiometabolic Prevention South Durham</u>. She is also part of the Duke Lipid Clinic team.
- The <u>Duke Lipid Clinic</u> has expanded and now includes more than eight physicians and four advanced practice providers (APP). We now have a clinical Pharm D who works closely to train patients starting on PCSK9 inhibitors and specialty medications, and works with their team for pharmacy approval processes.
- The Duke Metabolic Bone Program, directed by Thomas Weber, has provided comprehensive metabolic bone care to Duke patients for more than three decades, including the ability to provide same-day, in-clinic DXA bone mineral density scanning and analysis. Patients may also undergo same-day intravenous and subcutaneous treatment with bone-active medications, including Reclast™, Boniva™, Prolia™, and Evenity.™. Other metabolic bone providers at the 1A clinic include Dr. Kenneth Lyles (see article on Dr. Lyles' research, page 6), Dr. Susan Spratt, Dr. Sarah Zaheer and Patrick Cacchio, PA.
 - Metabolic bone providers have also expanded their practice to the Brier Creek Campus, South Durham, and the Duke Raleigh Campus.

Time for video visits

Even before COVID-19 suddenly and dramatically shifted much of U.S. health care to telehealth, Michael Caños and his team at Duke Endocrinology South Durham were pioneering the use of video visits to enable contacts with Type 1 diabetes patients who may have difficulty traveling to an office visit. They had conducted close to 40 video visits in by the end of 2019.

"We've been trying to expand the use of technology in our clinic to improve patient outcomes and improve convenience for Type 1 diabetes patients," Dr. Caños said. "Almost every provider in our clinic is trained on video visits, where if a patient had an urgent or semi-urgent concern and couldn't make it into the clinic, we can

engage them in a video visit, and we can review their blood glucose data remotely as long as they're on a sensor that transmits their data to the cloud."

"Patients can engage with us in video visits from their kitchen table or their dorm room, and it really helps when they're having difficulty with their blood glucose in between visits to obtain much better glycemic control quickly. So it's great for our patients who live in Fayetteville, or over at the coast in Wilmington, or in Boone, or some college students who may be at UNC Charlotte or ECU."

Video visits are being factored into the POET Diabetes Program, as a way to increase the number of patient contacts prior to surgery, to help optimize glycemic control. Also, Carly Kelley has started using the video visit platform for her gender medicine clinic, to review side effects of medications or talk about sensitive topics with transgender patients.

Caños said that the program has been successful, and that patients appreciate the idea of video visits. "Being able to see your provider and ask questions in real time has been valued by our patients," he noted.

Two clinics diversifying the Division

Dr. Afreen Shariff from Duke Endocrinology South Durham oversees two clinics targeting specific patient populations for endocrine interventions.

She directs the immunotherapy-endocrinology clinic for immune-related endocrine side effects and works with cancer patients who are being treated with novel cancer therapies like immune check point inhibitors. As the use of immunotherapy has grown, so has the instance of immune-related endocrine side effects. "About 15% of patients treated with these drugs actually can get an endocrine side effect," she said.

She started the clinic in 2017, and since then has seen "a couple of hundred" patients, today averaging 6 or 7 patients per week. The most common side effects she sees are thyroid-related autoimmune conditions, with patients potentially having both hypothyroidism or an underactive thyroid-or an overactive thyroid. Less commonly, they can also have Type 1 diabetes or adrenal insufficiency, either from autoimmune attack

to their pituitary gland or adrenal glands. Dr. Shariff said that she also occasionally sees less common effects, such as diabetes insipidus and hypoparathyroidism.

She says oncologists have become increasingly aware of the immunotherapy-related endocrine toxicities. "They are more reactive to the labs and the patient symptoms than they were before, because they recognize that these are chronic side effects. And they recognize that this has to be treated right away, and they need expert opinions sooner than later." To address this, she launched the platform for electronic communications between oncologists and subspecialists so time-sensitive decisions can be made for patients. Although the side effects are not reversible, management and treatment are relatively straightforward. And she never asks the oncologists to cease the immunotherapy. "The damage is done and these conditions are rarely reversible." Continued on page 6







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Two clinics, continued

"So, I just treat them for what they have, and they get their immunotherapy as planned," she said.

Dr. Shariff's other clinic is called Managing Ethnic Diabetes Effectively, or MEDE. She established it in 2018 to serve the special needs of South Asian diabetes patients. "This is an idea I always had, that I needed to contribute to ethnic subgroups where patients eat differently, and they're not getting a tailored regimen for what they should be eating. It's like a one size fits all approach. We often fail when we are unable to recognize and account for cultural differences. So that's how this clinic came into being, was to provide personalized medical advice to patients who have diabe-tes. I decided to start a clinic just for this, where we have a South Asian provider who understands the food that South Asians eat, and we counsel them on what they can and cannot eat, and understand the ethnic risk factors." She noted that South Asians are at 2-3 times more risk for diabetes than Caucasians or African-Americans, even without being obese. South Asians tend to be more insulin resistant, even though they are not obese, with a lot of fat around the liver and around the muscles. "So there are differences in medication management that I institute when I see these patients. I put them on insulin-sensitizing agents to reduce insulin resistance before jumping on to insulin or other more aggressive therapies. I like to exhaust medications that help the body's own insulin work better. It seems to be very effective in this population. It is important to recognize that it's not just dietary changes, it's also different combinations of medica-tions that you would give pertinent to the physiology of diabetes in these patients."

Dr. Shariff says the Division has been extremely supportive of the two clinics, where she spends approximately half of her time.

Parkinson's and Bone Health: A Conversation with Dr. Kenneth Lyles

Dr. Lyles is a geriatrician who has long worked very closely with Endocrinology.

"My passion is old people with bone disease, and I love to do clinical trials."

Those passions have combined in a new research initiative studying the efficacy of Reclast[™] (zoledronic acid) in a population of elderly patients with Parkinson's disease, who are highly prone to fractures, such as broken hips.

"In an earlier study, we used the FDA-approved osteoporosis drug zoledronic acid, and found that if you take it once a year, you reduce the fracture rate by 35%. That is important because after a fracture, particularly a hip fracture, there is a significantly elevated risk of subsequent fractures, and that involves an increased risk of mortality. Three years ago, my friend Dr. Steve Cummings from the University of California San Francisco called me and said he wanted to design a clinical trial where we recruit patients with Parkinson's, give them either placebo or Reclast™ and hopefully change their fracture rates. Now, working with the Endocrinology Division, the trial is going forward." "The trial is very simple. We want to recruit people over 65 who can walk (you can't be bedridden) and who have Parkinson's. We offer you a chance to get either calcium and a little bit of vitamin D, and that's all, or we'll come to your home and give you an intravenous *Lyles*



infusion of either zoledronic acid or placebo. And then we're going to watch your medical record to see if we cut your fracture rates."

"We're doing this all over the country, in all 48 contiguous states. Once you sign a consent form, we will mail you the calcium and vitamin D, and then a nurse appears at your home, checks your kidney function, and gives you the infusion in the comfort of your home. That's one of the attractive things, because it reduces the burden on the patient and their family."

"The trial is called <u>TOPAZ—Trial of Parkinson's and</u> <u>Zoledronic Acid</u>. The Parkinson's Foundation is involved, helping us recruit and maintaining a helpdesk with a neurologist always on call if there are Parkinson's questions. I am always on call if you have trouble taking the drug." *Continued on page 7*

Metabolomics: Advancing study of maternal outcomes

Dr. James Bain reports:

The Metabolomics Lab at the <u>Duke Mo-</u> <u>lecular Physiology Institute</u> measures small-molecule metabolites in studies ranging from basic science work in cell culture to large, observational studies in humans.



Bain

Since 2011, we have enjoyed working with William L. Lowe, Jr., MD, Denise M Scholtens, PhD, and their colleagues at Northwestern University on maternal and neonatal (cord blood) sera from the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Study.

One recent report, which correlates maternal metabolites with neonatal outcomes, was selected as an Editor's Choice in Diabetologia 62: 473 (Kadakia, et al,, 2019). In that work, we examined maternal fasting and one-hour oral glucose-tolerance test or OGTT sera at seven months' gestation in 1,600 expectant moms of Thai, Mexican-American, Afro-Caribbean, and Northern European ancestry. Findings were consistent across ancestries. Maternal levels of metabolic fuels in diverse biochemical pathways correlate with fetal growth, adiposity, and cord C-peptide, independent of maternal glycemia and body mass index or BMI.

Re-enrollment in the HAPO Follow-up Study is now complete, with resampling of families approximately 10-15 years postpartum. We are excited by our newest rounds of studies, in which we are examining how genetics and perinatal metabolism relate to long-term health outcomes in mothers and their children.

A revisionist look at glucagon

Recent work led by Dr. Jonathan Campbell and Dr. David D'Alessio has challenged the long-standing concept that glucagon production by alpha cells is pathogenic in Type 2 diabetes.



The prevailing narrative has been that

inappropriately elevated glucagon levels drive endogenous glucose production and exaggerate hyperglycemia. Thus, the story goes, the two hormones are opposing in nature, with glucagon action counterbalancing the effects of insulin. The narrative has driven research efforts to antagonize glucagon action or silence alpha cell function as therapeutic strategies to target diabetic hyperglycemia.

Despite the narrative, Drs. Campbell and D'Alessio have demonstrated that alpha and beta cells work together

synergistically to coordinate postprandial metabolism. Their work has shown that paracrine interactions originating from alpha cells are essential for beta cell function, and that impairing alpha cells or glucagon input into beta cells greatly diminished insulin secretion and glycemic control.

Those ideas have spawned a reconsideration of the metabolic role of glucagon in the pathogenesis of diabetes.

The endocrinology basic research group led by Drs. Campbell and D'Alessio is continuing to define these concepts through funding provided by an R01 grant on alpha to beta cell communication from the National Institute of Diabetes and Digestive and Kidney Diseases or NIDDK and industry grants from Eli Lilly and Novo Nordisk to foster better understanding of alpha cell function and glucagon signaling in beta cells.

Overall, the goal of the research is to leverage the newly understood properties of glucagon in a new approach to treating metabolic disease, including incorporation of glucagon agonism in the next generation of multireceptor agonists.

Parkinson's, continued

"The point is that if you have Parkinson's disease, if you're over 65, you have a 10-15% chance of having a fracture every year, because these people fall. You're four times more likely to have a hip fracture than a normal older person the same age. And the fascinating thing that we still don't fully understand is that this drug zoledronic acid reduces hip fractures by 40%, but it also cuts your risk of dying. In the big trial that I did previously, we cut the mortality rate by 28%."

Just since December 2019, the study has randomized 33 patients, with a plan to recruit a total of 3500 over the next two years.

"We believe that because one of the huge problems we know from studies of Parkinson's patients is that when they have a fracture, they are much slower to spring back from it than a normal older person. And of course we know that hip fractures and other fractures are disastrous for older patients. That's what I have made my career studying."

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POET: Improving surgical outcomes in diabetic patients

Endocrinologist Dr. Tracy Setji directs the <u>POET Diabetes Program</u>, which is designed to identify and expedite care for patients who have suboptimally controlled diabetes prior to a planned surgery, to help improve surgical outcomes.



Setji

The POET (PeriOperative Enhancement Team) Program was established in 2014 by Dr. Sol Aronson from Duke Anesthesiology, who as medical director oversees its dozens of projects, including arms devoted to nutrition, anemia, team management, and more. The diabetes arm was added in 2016.

Dr. Setji described the medical need for POET Diabetes: "Patients with diabetes are at risk for surgical complications, including infections, longer length of stays, and readmission. Prior to the POET program identifying those patients and expediting them into clinics, sometimes patients would come in on the day of surgery and their sugar was very high, sometimes leading to their surgery being cancelled as a result. Our hope is to identify and treat them so that they are coming in with optimal glucose for surgery," she said.

Dr. Setji also pointed out that the POET program is providing value by capturing patients who may have unrecognized medical conditions such as uncontrolled diabetes. "If we can get those conditions treated and get the patients healthier earlier on in their disease process or life, it should help with population health long term as well," she noted.

The POET diabetes program is a collaboration between anesthesiology and endocrinology, and involves all of the surgical services. "The surgical services are quite appreciative of having the diabetes managed by somebody in the perioperative time period. So the POET program is identifying the patients before the surgery, and then also if they are hospitalized after the surgery our endocrinology team is consulted automatically. We follow them in the hospital and arrange for outpatient follow-up to closely monitor their sugars," Setji said.

"Our team feels that POET is a very rewarding program to be involved with, because the patients are motivated, they appreciate the help, and it's a really good opportunity to be involved in their care," she observed.



Faculty News Online

An extensive list of recent grants, awards, publications and presentations by Division faculty has been added to the <u>website</u>. We invite you to take a few moments to review these impressive achievements by your friends and colleagues!

Publication in press at Diabetologia.

Y. Liu, A. Kuang, O. Talbot, **J.R. Bain**, M.J. Muehlbauer, O.R. Ilkayeva, L.P. Lowe, B.E. Metzger, **C.B. Newgard**, D.M. Scholtens, and W.L. Lowe, Jr., for the HAPO Study Cooperative Research Group. "Metabolomics and genetics define maternal metabolites associated with pregnancy-induced insulin resistance." *Diabetologia*, in press, 2020.

New North Carolina Diabetes Research Center will benefit Duke endocrinology division and partner institutions

In a collaboration with scientists at Wake Forest University, the University of North Carolina at Chapel Hill, and North Carolina Agricultural &Technical State University, the <u>Duke Division of Endocrinology, Metabolism,</u> and <u>Nutrition</u>, a leader in diabetes research, has been awarded a \$5.7 million federal grant to establish a North Carolina Diabetes Research Center (NCDRC).

The NCDRC grant is funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), an NIH institute, and it will leverage the resources of the four partner institutions to expand the already substantial progress being made in diabetes research in the state.

The North Carolina center will join <u>16 other diabetes</u> <u>research centers</u> across the country. Their purpose is to allow institutions that have significant resources dedicated to diabetes research to coordinate their efforts across the institutions and bring people together, particularly young investigators starting in diabetes research.

66 Three or four years ago, we sat around my kitchen table and hatched this idea...**99**

David D'Alessio, MD, professor of medicine and chief of the Division of Endocrinology, Metabolism, and Nutrition, spearheaded the Duke portion of the initiative. "A quarter of the money will be for pilot and feasibility grants, and those should be focused on new investigators," he said. "The other big pot of money is to fund core laboratories that have capabilities that would be useful to diabetes investigators, particularly young diabetes investigators. And then the last part is to coordinate educational efforts across the institutions." The NCDRC will act as a clearinghouse for diabetes initiatives and educational programs across the institutions, such as symposia series, speaker presentations, and coordination of educational events among the institutions.

Dr. D'Alessio said the center grant will bring notoriety to the four programs – the North Carolina center is the only diabetes research center in the country with a regional focus. "We're up there now in the mix with Vanderbilt and Washington and Michigan, and all of those places that have pretty storied diabetes programs. We are now recognized with the best," he noted.

Each of the universities will be responsible for one core program.

"At Duke, the core laboratory that will contribute to the consortium is the <u>Duke Molecular Physiology Institute</u> <u>metabolomics core</u>, which is one of the world leaders and has a long track record of effective collaborations," said D'Alessio.

 Wake Forest's effort is led by Don McClain, MD, PhD, director of the <u>Center on Diabetes, Obesity, and</u> <u>Metabolism</u>. Wake Forest will contribute the center's genomics/proteomics core.



McClain

Buse

- The principal investigator at UNC-CH is John Buse, MD, PhD. UNC will draw upon the resources of the <u>North Carolina Translational and</u> <u>Clinical Sciences (NCTraCS) Institute</u> and the more than 200 UNC scientists involved in diabetes research to develop advanced clinical studies methods.
- North Carolina A&T will be home to the consortium's Enrichment/Community Engagement Core, directed by Elimelda Moige Ongeri, PhD, professor and associate dean of research in the College of Health and Human Sciences.



Ongeri

D'Alessio was gratified that the long effort to secure the NCDRC grant has now come to fruition.

"Three or four years ago, we sat around my kitchen table and hatched this idea, and then went ahead putting in the grants," he recalled. "And now we're in the game."

Recent presentations from members of the Duke Division of Endocrinology at national meetings.

80th American Diabetes Association Scientific Sessions. *Virtual Venue* Chicago, IL. June 12-16, 2020.

Oral Presentations

"Implementation of an Intensive Telehealth Intervention for Rural Patients with Uncontrolled Diabetes." Kobe EA, Lewinski A, Danus S, Sidoli E, Greck B, Horne L, Saxon D, Shook S, Aguirre L, Evenson C, Elizagaray C, Jackson GL, Bosworth HB, Edelman D, **Crowley MJ**.

Poster Presentations

"Glycemic control impacts severity of hepatic fibrosis in NAFLD/NASH."

Anastasia-Stefania Alexopoulos, Matthew J. Crowley, Ying Wang, Cynthia A. Moylan, Cynthia D. Guy, Ricardo Henao, Dawn L. Piercy, Keri A. Seymour, Ranjan Sudan, Dana D. Portenier, Anna Mae Diehl, Manal F. Abdelmalek, Andrea D. Coviello.

"Insulin Sensitivity and Metabolic Profile of Subjects with Type 2 Diabetes and Nonalcoholic Steatohepatitis After Exposure to Cenicriviroc: A Subanalysis of the CENTAUR Study."

Andrea Coviello, Gerardo Rodriguez-Araujo, Eduardo Bruno Martins, Naim Alkouri, Manal F. Abdelmalek.

"Efficacy of Oral Semaglutide According to Background Medication: An Exploratory Subgroup Analysis of the PIONEER Trial Program."

Buse J, Crowley M, Eriksson JW, Gislum M, Hertz CL, Kaiser M, et al.

"Impaired Gsa/cAMP Signaling Exclusive to Pancreatic ß-Cells Exhibits a Unique Urinary Metabolome via Nontargeted Metabolomics in a Murine Model of Diabetes In Vivo."

Amro Ilaiwy, Megan Capozzi, Jennifer Brown, Mike Muehlbauer, James Bain, David D'Alessio, Jonathan Campbell.

"Urine tricarboxylic acid cycle organic anions and progression of diabetic kidney disease." J. Lunyera, M. Nguyen, C.J. Diamantidis, H.B. Bosworth, U. Patel, C.A. Davenport, **J.R. Bain**, M.J. Muehlbauer, O.R. Ilkayeva, S.H. Shah, and J.J. Scialla.

"Metabolomics reveals broad-scale metabolic perturbations in gestational diabetes (GDM)." Y. Liu, A. Kuang, J.R. Bain, T.K. George, O.R. Ilkayeva, A.C. Mincey, M.J. Muehlbauer, L.P. Lowe, B.E. Metzger, C.B. Newgard, D. Scholtens, and W.L. Lowe, Jr.

Symposiums

Sunday, June 14, 2020. 9:10 a.m.-9:30 a.m. (central time) Theme Area: Acute and Chronic Complications, Cardiorenal–Metabolic Axis in Diabetes. "Translating Evidence to Practice." **Jennifer B. Green, MD**

Sunday, June 14, 2020. 2:15 p.m.-4:15 p.m. (central time) "Update on Lipid-Lowering Drugs." John R. Guyton, MD

Sunday, June 14, 2020. 3:45 p.m.-4:15 p.m. (central time) "Drugs in Development to Lower Lipids." **John R. Guyton, MD**



Giving back

Want to give back to your Division? Here's how: contact Sally Schatz in the development office for Duke Endocrinology, <u>sally.schatz@duke.edu</u>