Educational programming at The Scientific Sessions designed for clinicians and researchers alike

Dr. Patti said, “They provide an opportunity for attendees to interact directly with the experts in both clinical care and research.” Dr. Patti also highlighted a new feature at The Scientific Sessions: two President’s Oral Sessions, one on Friday afternoon and the other on Tuesday, June 25, that will feature the “very best abstracts related to both basic science research and clinical research,” she said.

Also on Tuesday, the Insulin Action and Molecular Metabolism track features a symposium with the intriguing title “Bugs Inside and Out.” The session will focus on the human microbiome — the sum of the microorganisms in the gut and deep layers of the skin — and its effects on metabolism, diet, obesity, and the skin.

“The microbiome is a hot area of investigation,” Dr. Patti said. “What’s becoming increasingly appreciated is that these bacteria and other microorganisms contribute to differences in individuals. Your gut microbiome is different from your microbiome. Those differences may contribute to differences in how our food is metabolized. When we eat something, the bacteria in the gut are also digesting the food we eat, using the food as nutrients.”

As microorganisms metabolize some of the food we eat, they can change the amount of calories absorbed by an individual, resulting in differences in body weight and metabolism.

Register today for the world’s preeminent meeting on diabetes

Join your colleagues for the world’s foremost meeting on diabetes — The American Diabetes Association’s 73rd Scientific Sessions. The five-day meeting will feature timely and significant advances in basic science and the prevention, diagnosis, and treatment of diabetes.

You won’t want to miss:

• More than 2,000 original research presentations
• Meet the Expert Sessions: Diabetes experts will facilitate informal discussions on clinical and basic science topics in a setting that fosters interaction and gives meeting attendees the opportunity to present questions and gain new perspectives.
• Guided Audio Poster Tours: A unique, attendee-only experience. You will have the opportunity to choose from more than 60 moderated poster tours.
• Interactive Online Posters: Every poster in the Poster Hall will have a corresponding QR Code on its board. Scanning the QR Code with a smartphone or camera-equipped tablet will allow access to an electronic version of the poster, corresponding abstract, and audio commentary by presenters (if provided).
• Networking Reception: Join us Saturday evening, June 22, from 6:15 p.m. – 7:30 p.m. for a Networking Reception. Share ideas and innovative practices with colleagues from around the world. Light hors d’oeuvres and refreshments will be provided.
• Exhibit Hall: View the latest products and services to help you in your practice — take care of a year’s worth of office visits in just three days!

Visit scientificsessions.diabetes.org for more information and to register today.

Meeting Highlights

Friday, June 21
4:35 p.m. – 6:15 p.m. ADA President’s Oral Session I
Joint ADA/JDRF Symposium
8:00 p.m. – 10:00 p.m. Opening Reception (ticketed event)
The Field Museum

Saturday, June 22
8:00 a.m. – 10:00 a.m. Noether Freinkel Award Lecture
Caroline A. Crowther, MD, FRANZCOG, FRCOG, CMFM
10:15 a.m. – 11:15 a.m. President, Health Care & Education Address
Laurie A. Gatten, RN, MSN
Outstanding Educator in Diabetes Award Lecture
Ann L. Albright, PhD, RD
1:45 p.m. – 3:45 p.m. Behavioral Medicine and Psychology Distinguished Contributions Award Lecture
Margaret Gery, DNP, RN, FAAN
Joint ADA/GEI Symposium
4:00 p.m. – 6:00 p.m. Roger Pecoraro Award Lecture
Christopher E. Attieger, MD, FACS
10:15 a.m. – 11:15 a.m. Joint ADA/ASN Symposium
8:00 p.m. – 10:00 p.m. Joint ADA/AACC Symposium
2:15 p.m. – 4:15 p.m. ADA President’s Oral Session II
Primary Results of the Look AHEAD Trial
4:30 p.m. – 6:30 p.m. Joint ADA/ASN Symposium
5K@ADA Fun Run/Walk
8:00 a.m. – 10:00 a.m. National Scientific & Health Care Achievement Awards Presentation and Outstanding Educator in Diabetes Award Lecture
Joseph L. Witztum, MD
6:30 a.m. – 7:30 a.m. Joint ADA/AACCC Symposium
10:15 a.m. – 11:15 a.m. Joint ADA/ASN Symposium
8:00 p.m. – 10:00 p.m. Joint ADA/ASN Symposium
2:15 p.m. – 4:15 p.m. Joint ADA/ASN Symposium
4:30 p.m. – 6:30 p.m. Primary Results of the Look AHEAD Trial

Sunday, June 23
WEAR RED TO STOP DIABETES®

Monday, June 24
6:30 a.m. – 7:30 a.m. 5K@ADA Fun Run/Walk
10:15 a.m. – 11:45 a.m. Joint ADA/AACCC Symposium

Tuesday, June 25
10:15 a.m. – 12:15 p.m. ADA President’s Oral Session II
Confronting Hypoglycemia with Diabetes Technology:
The Arc of Progress

FRIDAY, JUNE 21, 2013
HYATT REGENCY CHICAGO
GRAND BALLROOM C-F SOUTH
151 E. WACKER DRIVE
CHICAGO, IL
6:30 – 7:15 PM: REGISTRATION AND DINNER
7:15 – 9:00 PM: EDUCATIONAL PROGRAM

FACULTY
Irl B. Hirsch, MD
Program Chair
Professor of Medicine
University of Washington School of Medicine
Seattle, WA

Satish K. Garg, MD
Editor-in-Chief, Diabetes Technology & Therapeutics
Professor of Medicine and Pediatrics
Barbara Davis Center for Childhood Diabetes
University of Colorado Denver
Aurora, CO

James S. Hirsch
Author, Cheating Destiny: Living with Diabetes, America’s Biggest Epidemic
Needham, MA

Moshe Phillip, MD
Director, Institute for Endocrinology and Diabetes
National Center for Childhood Diabetes
Schneider Children’s Medical Center of Israel
Petah Tikva
Professor of Pediatrics & Vice Dean for Research and Development
Sackler Faculty of Medicine
Tel Aviv University
Israel

PROGRAM OVERVIEW
The inception of insulin therapy more than 90 years ago marked one of modern medicine’s greatest achievements but also introduced a persistent challenge: achieving healthy blood glucose levels without triggering potentially dangerous hypoglycemia. This continuing medical education symposium will explore how advances in insulin pharmacology and pump therapy, as well as tools for continuous glucose monitoring and data management, have helped to reduce the burden of hypoglycemia and spurred recent strides toward the development of an artificial pancreas. Current and future uses of diabetes technology to safely optimize insulin therapy will be examined, drawing on the perspectives of patients, their families, and health care teams.

TARGET AUDIENCE
This activity has been designed to meet the educational needs of physicians, pharmacists, registered nurses, nurse practitioners, and other health care professionals involved in the care of patients with diabetes.

CONTINUING MEDICAL EDUCATION
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Penn State College of Medicine and The Diabetes Education Group. Penn State College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Penn State College of Medicine designates this live activity for a maximum of 1.5 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The American Academy of Physician Assistants and the American Academy of Nurse Practitioners accept certificates of participation for educational activities certified for AMA PRA Category 1 Credit™ from organizations accredited by the ACCME or a recognized state medical society. Professionals should seek advice from their state boards and accrediting organizations as to whether physician credits may/may not be acceptable.

REGISTRATION
Go to https://www2.cmrreg.com/ada_5s/ADASS2013/index.html to register for the American Diabetes Association’s 73rd Scientific Sessions and our Corporate Symposium.

If you have already registered for the Scientific Sessions, click on the yellow “Register” button and log in using your e-mail address (for non-members) or your professional member ID number and last name (for members) and you will be able to add the corporate symposium to your existing registration. Proceed through the registration pages to the corporate symposia, and after making your selection, click “Next” and then “Submit” to save your updates and receive a revised e-mail confirmation.

If you have any questions regarding your registration, please contact the ADA Registration Customer Care Center at 866-290-9910 (toll free US & Canada) or 415-268-2086 (International) Monday through Friday, 9:00 AM – 9:00 PM ET, or via e-mail at adareg@cmrus.com.

Jointly sponsored by Penn State College of Medicine and The Diabetes Education Group. This activity is supported by an unrestricted educational grant from Medtronic and Bayer.
Brain and gut play central roles in diabetes development

It wasn’t long ago that diabetes was seen as a problem of insulin secretion and insulin sensitivity. But recent research into physiology and obesity has added complexity to that simple picture. It now appears that diabetes has more to do with the brain and the gut than it does with the pancreas, liver, skeletal muscle, and other peripheral tissues.

“The brain orchestrates the function of all the peripheral organs. It senses circulating hormones and nutrients in the organism and regulates the liver, the pancreas, and other tissues in controlling energy metabolism, glucose metabolism, and food intake,” said Sabrina Diano, PhD, Professor of Ob/Gyn, Neurobiology and Comparative Medicine at Yale University School of Medicine.

But the brain is also affected by food intake and metabolism, she added. A single day of high fat, high carbohydrate, nutrient-rich eating, can trigger inflammatory pathways in mouse brain tissue that are activated throughout the body in obesity.

The association between diet, inflammation in brain tissue, and metabolic dysfunction is one of several topics in the Integrated Physiology/Obesity track, which Dr. Diano helped to plan as a member of the Scientific Sessions Meeting Planning Committee. A symposium on Friday, June 21, titled Hypothalamic Inflammation and Metabolic Disturbance will specifically address this association.

“The inflammatory process begins even before the animal becomes obese,” Dr. Diano explained. “If you maintain that high fat diet, you maintain that inflammatory signaling pathway and begin changes in energy and glucose regulation. You get inflammation in just one day in the hypothalamus, much faster than we see inflammation in peripheral tissues.”

The hypothalamus is not the only cerebral tissue that plays a role in diabetes. A symposium on Sunday, June 23, will explore the Role of the Brainstem in Metabolism Regulation. New research is uncovering ever-larger roles for the brainstem in leptin signaling, in linking energy balance to higher brain function, melanocortin activity and energy balance, and the effects of serotonin on energy balance.

Bariatric surgery has also taken a prominent place on the boundary between basic research and clinical practice. It has long been observed that bariatric surgery can have dramatic effects on type 2 diabetes, and an international group recently confirmed those observations in a randomized, controlled trial setting. On Saturday, June 22, several of the researchers will discuss their findings during the Joint ADA/EASD Symposium titled Metabolic Effects of Bariatric Surgery—How Low Can You Go?

“These are sessions dedicated to understanding — from a clinician’s point of view — how bariatric surgery works, the safety and efficacy of different types of bariatric surgeries, and how the hormonal effects could potentially reverse the disease aside from weight loss effects,” said Sangeeta R. Kashyap, MD, another member of the Scientific Sessions Meeting Planning Committee.

Another Saturday symposium, Improving Glucose Metabolism with Bariatric Surgery—Mechanisms of Action, will explore the latest findings on how bariatric surgery exerts its effects.

“These speakers will be talking a lot about gut physiology, gut microbiotics, bile acids, gut hormones, and gastric emptying,” said Dr. Kashyap, Associate Professor of Medicine at the Cleveland Clinic Endocrinology Institute. “A lot of this material is focusing on gut physiology and anatomy because that is what bariatric surgery is changing and this will influence how we think diabetes develops and can be treated in the future.”

Additional sessions in the track will examine the importance of sleep regulation in glucose control. Sleep, Circadian Rhythm, and Metabolic Consequences will explore misalignments as novel risk factors for obesity and diabetes. The symposium will be held on Sunday at The Scientific Sessions.

A session of Monday, June 24, will explore the latest findings on the effects of bariatric surgery on postprandial metabolism, dietary fiber and postprandial metabolism, postprandial vascular changes, and exercise as protection from postprandial glucose stress. The symposium is titled Postprandial Metabolism — Hot Topics.

“The true importance of these sessions is their clinical relevance,” Dr. Diano said. "Understanding the role of inflammation signaling, the mechanism of action for bariatric surgery, have huge clinical relevance.”

WE’RE NOT INVESTING IN RESEARCH. WE’RE INVESTING IN RESEARCHERS.

History shows that great breakthroughs often come from unexpected places. The only constant is talent. Pathway to Stop Diabetes provides five- to seven-year grants of $1.625 million to enlist a new generation of brilliant scientists, regardless of their current field of study, and provides freedom, autonomy, professional mentoring and opportunities for collaboration to drive new breakthroughs. It’s a radical new road for diabetes research. And one that can accelerate your career.
Research into new therapies for type 1 diabetes will be highlighted in immunology, transplant sessions

**Symposia at this year's Scientific Sessions**

Sessions related to immunology and transplantation will explore topics ranging from T-cell therapeutics to transplant therapies for patients with type 1 diabetes.

During a symposium on Saturday, June 22, four speakers will discuss trials of interleukin-2 (IL-2) and rapamycin, low-dose IL-2, antithymocyte globulin (ATG), and combined ATG-granulocyte colony stimulating factor (GCSF) therapy in patients with type 1 diabetes. The symposium is titled *Clinical Trials of T-Cell Therapeutics for Reversing Type 1 Diabetes.*

"Researchers believe that the major autoimmune cell directing the autoimmune response against pancreatic islet cells is a T-cell," explained Mark S. Anderson, MD, PhD, a member of the Scientific Sessions Meeting Planning Committee who helped organize the symposium. "Over the last decade and a half, some progress has been made in understanding how to intervene and change the behavior of T-cells with various drugs."

One of the trials that will be discussed during the symposium is the IL-2/Rapamycin Trial, in which investigators administered the two drugs in combination to newly diagnosed type 1 diabetes patients to see if the combination would halt autoimmune destruction of beta cells.

"The trial was focused on regulatory T-cells, or Tregs, which are critical immune cells that help prevent autoimmunity," explained Dr. Anderson, Associate Professor and the Robert B. Friend and Michelle M. Friend Endowed Chair in Diabetes Research at the University of California, San Francisco, Diabetes Center. "A lot of progress has been made in understanding this cell population," he continued. "If you eliminate those cells, you can invoke a lot of autoimmune problems, including type 1 diabetes. Current research is looking into ways to enhance the activity of the Tregs to block the immune response against pancreatic islet cells."

Another trial to be reviewed is the Low-Dose IL-2 Trial in Type 1 Diabetes, which used low-dose IL-2 to induce or stimulate Tregs and optimize the risk-benefit ratio of this treatment in type 1 diabetes patients.

A third trial is a study of the use of ATG (Thymoglobulin) to arrest new-onset type 1 diabetes. "The idea behind this trial is to further explore methods to suppress T-cells. ATG is a complex drug. It is actually a combination of multiple antibodies in one cocktail and is used predominantly by transplant surgeons," Dr. Anderson said.

The final trial is a study of combined ATG-GCSF therapy for patients with new-onset type 1 diabetes. GCSF is a drug used to help mobilize bone marrow cells for bone marrow transplants.

"This symposium will present the state of the art in research into efforts to manipulate the immune system in type 1 diabetes," Dr. Anderson said. "Targeting the Treg population may be a way to induce antigen-specific tolerance to shut down the immune response to pancreatic islet cells, which is the Holy Grail of immunology."

**Transplantation**

Another Saturday symposium, this one titled *Transplant Therapies for Type 1 Diabetes – Current, Emerging, and Novel,* will cover a range of transplant therapies, from whole pancreas transplantation to islet cell transplantation and the use of stem cells to replace beta cells.

"Right now the islets come from deceased donors, as do whole pancreata. Looking down the road, alternative cell sources, particularly those derived from stem cells, are being studied as beta cell replacements. The symposium will update attendees on what's feasible in terms of stem cell therapy for humans in the near future," said Dr. Rickels, Assistant Professor of Medicine and Director for Translational Research in the Institute for Diabetes, Obesity & Metabolism at the University of Pennsylvania.

See NEW THERAPIES, next page.
EDUCATIONAL PROGRAM
Continued from page 1

“One person’s gut bacteria might consume more calories than another person’s, so even if the two individuals eat the same amount of food, there could be a difference in the net amount of calories absorbed by each,” Dr. Patti explained. Research has shown that bariatric surgery also affects the gut flora. “It’s possible — and this is not entirely clear yet — that changes in gut flora could contribute to some changes in intestinal hormones that contribute to the resolution of diabetes in people who undergo this operation,” Dr. Patti said. We desperately need to know more about the interaction between us and the bacteria in our gut to understand more about diabetes.

Another session in the track is titled NAD Biology and Energy Regulation. This session will be held on Monday, June 24, and will examine how cells sense energy levels.

“Over the past few years, it’s become clear that how cells sense energy levels is important to energy regulation,” Dr. Patti explained. “Body cells need energy to build proteins, repair injuries, and metabolize fuels. Among the most common forms of energy are ATP and NAD.”

NAD stands for nicotinamide adenine dinucleotide, a co-enzyme found in all cells. It is an important regulator of metabolism and cell function.

“It turns out that living cells have sensors that can detect the amount of these energy molecules in the body,” Dr. Patti said. “Any change in the sensor can be turned on or off, helping the cells reset their metabolism back to normal. For example, if I am exercising and deplete the nutrient stores in my muscle cells, the cells turn on pathways that help restore energy levels in the cells. Altering the balance of energy can potentially contribute to a key feature of diabetes risk: insulin resistance.”

The symposium will include a discussion of the role of sirtuins as master metabolic regulators. Sirtuins are a class of proteins that influence aging-related diseases, including diabetes, the speaker added.

NEW THERAPIES
Continued from page 6

“Another transplantation symposium, Islet Autotransplantation following Total Pancreatectomy for Chronic Pancreatitis – State-of-the-Art, will feature four speakers discussing the pathophysiology of chronic pancreatitis, the evaluation of patients for total pancreatectomy and islet autotransplantation, the metabolic consequences of that procedure, and non-immunologic mechanisms of islet graft failure.”

“This symposium is designed around a procedure that has been available in clinical practice for many years at only a few institutions. However, it has been expanded in recent years to many institutions across the country,” Dr. Rickels said.

“Patients who have chronic pancreatitis and suffer from debilitating pain have their pancreas removed. While that would assuredly induce insulin-dependent diabetes, surgeons attempt to prevent or ameliorate their diabetes by transplanting the patient’s own islet cells back to the patient,” he explained. “Our understanding of this procedure and, more importantly, of the patients who may be candidates has increased dramatically in recent years from the molecular understanding of causes of hereditary pancreatitis as informed by human genetics.”

The last talk will explore curtailing autoimmune responses to beta cell replacements, whether they are allogeneic or autologous, that lead to type 1 diabetes in the first place. The speaker will address novel immunomodulation strategies for transplantation that is specific to individuals with type 1 diabetes,” Dr. Rickels explained.

“What we are learning from treating type 1 diabetes patients with beta cell replacement therapies and preventing autoimmunity has a lot to teach us about how we might intervene early or even prevent type 1 diabetes in the larger population,” he added.

While attending the American Diabetes Association’s 73rd Scientific Sessions, you are invited to attend a CME symposium

Impacting Type 2 Diabetes and Optimizing Patient Outcomes With GLP-1 Agonists

SUNDAY, JUNE 23, 2013

Hilton Chicago • International Ballroom • 720 S. Michigan Avenue • Chicago, Illinois
Registration & Dinner: 6:45 pm – 7:30 pm • Scientific Session: 7:30 pm – 9:30 pm

Faculty

Vivian Fonseca, MD, FACE
Professor of Medicine and Pharmacology
Tulsa Tulane Alumni Chair in Diabetes
Chief, Section of Endocrinology
Tulsa University Health Sciences Center
New Orleans, Louisiana

Lawrence Blonde, MD, FACP, FACE
Director, Ochsner Diabetes Clinical Research Unit
Department of Endocrinology, Diabetes, and Metabolic Diseases
Ochsner Medical Center
New Orleans, Louisiana

Michael A. Nauck
Professor & Head Physician
Diabeteszentrum Bad Lauterberg
Hatz, Germany

Program Overview
Management of type 2 diabetes is shifting to new treatment modalities that offer low risk of hypoglycemia and weight gain while effectively lowering blood glucose levels. GLP-1 receptor agonists can be used alone or in combination with other agents. This case-based continuing education program will explore the relative merits of GLP-1 agonist therapy across the spectrum of patients with type 2 diabetes and provide pathophysiologic and clinical rationale for the use of these agents. Faculty will present complex cases and review the rationale for or against different therapeutic options, and present data supporting why GLP-1 agonists might be appropriate as part of mono- or combination-therapy strategies. Clinical scenarios and patient complexities that may require physicians to re-evaluate, adjust therapy, or reframe their clinical decisions will be posed to the faculty for their expert opinions.

Target Audience
This activity is designed to meet the educational needs of endocrinologists, internists, primary care clinicians, and other healthcare professionals who manage patients with type 2 diabetes.

Accreditation Statement
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of Clinical and Patient Educators Association and Global Directions in Medicine. Clinical and Patient Educators Association is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation
Clinical and Patient Educators Association designates this live activity for a maximum of 2.0 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Americans With Disabilities Act
Event staff will be glad to assist you with any special needs (e.g., physical, dietary, etc.). Please contact Deanna Schuly prior to the live event at 215-321-3204 or via e-mail at dschuly@gdmedicine.com.

Registration Instructions
Go to https://www2.cme.org/ad/a_eac/DAOSS2013/Index.html to register for the American Diabetes Association’s 73rd Scientific Sessions and our Corporate Symposium.

If you have already registered for Scientific Sessions, click on the yellow ‘Register’ button and log in using your e-mail address (for Non-Members) or your Professional Member ID # and Last Name (for Members) and you will be able to add the Corporate Symposium to your existing registration. Proceed through the registration pages to the Corporate Sympoas, and after making your selection, click ‘Next’ and then ‘Submit’ to save your updates and receive a revised e-mail confirmation.

If you have any questions regarding your registration, please contact the ADA Registration Customer Care Center at (866) 290-9910 (toll free US & Canada) or (415) 268-2086 (international) Monday through Friday, between the hours of 9 am – 9 pm ET or via e-mail at adareg@cmrus.com.

Fee Information
There is no fee for this educational activity.

Upon receipt of a completed activity evaluation form, a statement of credit will be mailed to you within 4 weeks.

Patient images © stockphoto.com

Jointly sponsored by Clinical and Patient Educators Association and Global Directions in Medicine

Supported by an educational grant from Novo Nordisk Inc.
Sessions will address behavioral medicine, clinical nutrition, education, and exercise

The Scientific Sessions Meeting Planning Committee has organized several sessions this year covering the latest approaches to diabetes care through behavioral medicine, clinical nutrition, education, and exercise.

One of the highlights related to clinical nutrition is a symposium on Sunday, June 23, titled Dietary Sweeteners—Research, Recommendations, and the Real World, according to Melinda Maryniuk, MEd, RD, CDE, FADA, a member of the Scientific Sessions Meeting Planning Committee who helped plan the symposium.

“There has been a lot of research attention given to dietary sweeteners based on the perception that too much sugar may contribute to the epidemic of metabolic diseases in the United States, including diabetes,” said Maryniuk, Director of Clinical Education Programs at the Joslin Diabetes Center. “This symposium will look at the research related to dietary sugars, sucrose, and high-fructose corn syrup, and nonnutritive sweeteners and their effects on adults and children.”

One of the session’s speakers is Christopher D. Gardner, PhD, the lead author of a 2012 scientific statement from the ADA and the American Heart Association on substituting nonnutritive sweeteners — including aspartame, acesulfame-K, neotame, saccharin and sucralose, and plant-derived stevia — for sugars added to beverages and other foods. Another speaker is Y. Claire Wang, MD, ScD, who will present a public health perspective on regulating consumer behavior through taxes on soda and other sugary drinks to help prevent heart disease and diabetes.

“Research into nutrition as it relates to diabetes may be changing long-held beliefs, and we clinicians who work with diabetes patients need to be more flexible in helping patients plan their meals and avoid foods that can raise the risks of complications from diabetes,” Maryniuk said.

Exercise mimetics

Another highlight will be a symposium on Saturday, June 22, titled The Future of Exercise Mimetics—New Insights into Mechanisms of Exercise, which will explore the basic science of the mechanisms of exercise and various, so-called, mimetics of exercise.

“We know that exercise is good for patients with diabetes and that it reduces the risk of diabetes in others. We know from the Diabetes Prevention Program that exercise is better than the best available drug, metformin, in terms of preventing diabetes,” said Bret H. Goodpaster, PhD, another member of the Scientific Sessions Meeting Planning Committee. “This symposium will highlight the potential of certain compounds or targets for compounds that might act like exercise.”

During the symposium, four experts will discuss: exercise and irisin, a hormone under investigation that can potentially replicate some of the positive effects of exercise; exercise-induced myokines, which are muscle-derived peptides; estrogen-related receptor-gamma, which exercise induces in skeletal muscle; and resveratrol, a chemical found in red wine and dark chocolate thought to combat the effects of obesity and diabetes.

“The speakers will address the cellular and biochemical effects of exercise and exercise mimetics and how they might lead to better treatments and prevention of diabetes and other metabolic diseases, as well as obesity and even age-related loss of metabolic function,” said Dr. Goodpaster, Professor of Medicine and Assistant Professor of Health and Physical Education at the University of Pittsburgh.

Psychosocial/behavioral medicine

Another important Saturday session is a symposium titled Behavioral Interventions for Diabetes—Evidence from Recent Intervention Studies, according to Julie Wagner, PhD, another member of the Scientific Sessions Meeting Planning Committee. Five expert presenters will examine research into financial incentives vs. peer mentoring for diabetes, diabetes education and skills training for African Americans, community-based interventions for low-income Latinos, couples vs. individual interventions for diabetes, and pharmacist vs. nurse-led interventions for diabetes.

“The speakers will be talking about comparative-effectiveness studies comparing one type of treatment to another to determine which works best. These studies will be presented at this symposium for the first time,” said Dr. Wagner, Associate Professor of Behavioral Sciences and Community Health at the University of Connecticut Health Center.

“We know from past studies that behavioral interventions improve self-care, decrease stress, and, in some cases, improve glycemic control,” she added. “Now we are seeing the next generation of research asking how do we tailor those interventions to specific populations, who are the best people to deliver them, and what are some creative ways to address the psychosocial issues that people with diabetes face.”

The National Standards for Diabetes Self-Management Education and Support were released recently, and speakers for this symposium and other sessions at the Scientific Sessions will be talking about them,” said Linda M. Siminerio, RN, PhD, CDE, another member of the Scientific Sessions Meeting Planning Committee.

The goal of the symposium is to help attendees understand the evidence behind the standards, said Dr. Siminerio, Executive Director of the University of Pittsburgh Diabetes Institute and Professor of Medicine at the University of Pittsburgh. Speakers will present information on the importance of health literacy in diabetes education, studies supporting the cost-effectiveness of diabetes self-management education, and how to integrate psychosocial themes such as stress and depression into diabetes education.

“The new standards have some key pieces in them,” Dr. Siminerio said. “For the first time, we are talking about education as it relates to primary prevention. I think it’s important for educators and providers to hear why these standards are so important and why changes were made to them.”

Achieving the Best in Patient Outcomes

NEW BOOKS for this year’s 73rd Scientific Sessions

June 21-25, 2013 • Chicago, Illinois

Available at the Scientific Sessions Store at the meeting or at ShopDiabetes.org

American Diabetes Association.
Therapeutic sessions look beyond hyperglycemia

Clinicians recognize that treating diabetes means more than dealing with hyperglycemia. Obesity can be an issue. So can renal complications, testosterone, bone health, and medication choices, among many others considerations.

For this reason, the Scientific Sessions Meeting Planning Committee has organized several symposia this year that will be of general interest to clinicians, and several others with a more specialized focus.

“There was a big push this year to bring out topics and areas that the busy diabetes practitioner wants and needs to know about with the latest data,” said Craig D. Williams, PharmD, a member of the Scientific Sessions Meeting Planning Committee who helped organize the symposia related to clinical diabetes and therapeutics.

Even the more specialized symposia will resonate with busy clinicians, noted Kathleen M. Dungan, MD, another member of the Scientific Sessions Meeting Planning Committee. “By attending these sessions, you are getting a comprehensive view of diabetes — type 1 and type 2, pediatric to old age, and all the therapeutic approaches in between,” said Dr. Dungan, Associate Professor of Medicine at Ohio State University. “We are focusing on the comprehensive nature of diabetes therapeutics and not just on hyperglycemia.”

One of the sessions planned with specialists in mind is a symposium on Friday, June 21, titled The Effect of Low Testosterone on Glycemic Control and Health in Diabetes and Obesity. But the session’s topics of testosterone, bone health, and renal complications have broad clinical interest.

“Testosterone control is a topic that specialists think about quite a bit,” said Dr. Williams, Associate Professor at the Oregon State University College of Pharmacy and the Oregon Health & Science University. “It is also a topic that generalists should be more aware of even if it is not going to be on the front burner of their concern.”

Bone health is the focus of session on Sunday, June 23, titled Diabetes and the Bones. In patients without diabetes, obesity typically leads to better bone health, Dr. Williams explained. But in diabetes, obesity leads to poor bone health. The session’s speakers will discuss osteoporosis in patients with diabetes, skeletal effects of diabetes therapies, screening and monitoring of bone disease in diabetes.

Knowing that FRAX underestimates fracture risk, and the skeletal effects of bariatric surgery.

Also on Sunday, two experts will face off to debate the clinical impact of one of the most common renal complications of diabetes. The symposium Persistent Microalbuminuria as an Adequate Indication of Renin-Angiotensin-Aldosterone System (RAAS) Blocking Therapies will examine what the latest data on microalbuminuria does — or does not — say about the use of specific medications.

In another debate session, this one on Saturday, two experts will offer different perspectives on a current issue, Should Sulfonylureas Remain an Acceptable First-Line Add-On Therapy to Metformin?

“There have been rumors about sulfonylureas being associated with increased cardiovascular risk,” Dr. Williams said. “Should sulfonylureas retain the high rankings they have had with clinicians? The results of this debate should be of quite broad appeal.”

Two additional symposia grew out of the recognition that pharmacotherapy alone is not enough to deal with diabetes. Saturday’s symposium on Pharmacologic Management of Obesity takes a more basic science approach to obesity, Dr. Dungan said. Presentations will explore the neuroscience of obesity, the successes and failures of past efforts at pharmacologic intervention in obesity, and the role of two recently approved medications for obesity.

On Tuesday, June 25, the symposium Obesity Management for the Practicing Clinician will offer a more practical look at obesity. Presenters will explore the latest insights into grading obesity and selecting the most appropriate patients for intervention, how to make lifestyle interventions effective, how the newer anti-obesity pharmacologic agents should be incorporated into clinical practice, and practical approaches to the current endoscopic and surgical options.

“We’ve asked experts on the front lines to talk about the practical aspects of managing obesity from lifestyle to the pharmacologic agents that are available,” Dr. Williams said. “But it is really aimed to discuss the more practical steps clinicians can take to help patients in their practice work on their obesity separate from any medications and looking specifically at the lifestyle aspects of the disease. People are having success, but it takes work.”

CME-CERTIFIED DINNER SYMPOSIUM

BEYOND THE BASICS: Addressing Obesity IN YOUR PATIENTS WITH T2DM

Sunday, June 23, 2013
Hyatt Regency Chicago • 151 E. Wacker Dr.
Grand Ballroom A-D North

6:30 pm - 7:00 pm Registration & Dinner
7:00 pm - 9:00 pm CME-Certified Symposium

Course Chair
Robert H. Eckel, MD
Professor of Medicine
Division of Endocrinology, Metabolism and Diabetes
University of Colorado Denver
Director Endocrinology and Preventive Medicine
Associate Professor of Medicine
University of Michigan Medicine
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Hypoglycemia is one of many diabetic complications to be addressed at The Scientific Sessions

**Acute and Chronic Complications**

Complications are a never-ending problem for patients with diabetes and the clinicians who care for them. Hyperglycemia gets most of the attention, but hypoglycemia can create just as many problems.

“The fear of hypoglycemia is one of the main impediments to the treatment of diabetes,” said Ilan Gabriely, MD, a member of the Scientific Sessions Meeting Planning Committee who helped organize several sessions in the Acute and Chronic Complications track.

“This fear of hypoglycemia is one of the main reasons patients are not treating themselves appropriately, which may result in deterioration of their glycemic control,” added Dr. Gabriely.

Several symposia at the 73rd Scientific Sessions will address various aspects of hypoglycemia. A session on Saturday, June 22, titled Hypoglycemia in Clinical Practice will provide the latest data on the correlation between continuous glucose monitoring and hypoglycemia. The session’s speakers will also address the pathophysiology, diagnosis, and treatment of hypoglycemia following gastric bypass; the impact and treatment of nocturnal hypoglycemia; and the etiology and treatment of hypoglycemia in hospitalized patients.

A session on Tuesday, June 25, titled Defective Hypoglycemia Counterregulation in Diabetes Mellitus – Mechanisms, Prevention, and Reversal will approach hypoglycemia from both a basic science and clinical perspective. The session will include an update on the central nervous response to hypoglycemia, the mechanisms involved in hypoglycemia unawareness, prevention of early impairment in autonomic control of islet function, and the latest on pharmacologic modulation of the counterregulatory response to hypoglycemia.

“Hypoglycemia is one of the main impediments to the treatment of diabetes,” said Dr. Gabriely. “But more and more patients with type 2 are suffering from hypoglycemia, particularly those who are more advanced in their disease. If we can improve the response to hypoglycemia, we will be able to advance the treatment of diabetes and be able to decrease further complications and pooling life.”

**Kidney Disease**

Kidney complications in both type 1 and type 2 diabetes are a concern that needs greater attention. To that end, the ADA and the American Society of Nephrology are co-sponsoring their third annual joint symposium titled From Mice to Men and Back in Diabetic Kidney Disease.

“This is a combination of cutting-edge research and direct clinical relevance,” said Katherine R. Tante, MD, a member of the Scientific Sessions Meeting Planning Committee and also Clinical Professor of Medicine at the University of Washington School of Medicine and Executive Director for Research at Providence Health Care. “We are coming full circle [in this session], from experts in the newest research to a presentation on personalized medicine and ways these advances will be translated into the clinic and into the community for our patients.”

Kidney complications will also be the focus of a symposium on Friday, June 21, titled The Kidney’s Unholy Triad – Obesity, Hypertension, and Hyperglycemia. Two speakers will look at ways obesity produces kidney damage, while two other speakers will weigh recent evidence on hypertension in diabetes and examine ways chronic kidney disease influences management of hyperglycemia.

Another Monday symposium will provide practical guidance through some of the clinical complexities and controversies surrounding diabetic kidney disease. The session is titled So Your Patient Has Diabetic Kidney Disease – Now What?

**Neuropathy and small fibers**

Look for new ideas in the etiology and treatment of neuropathy as well.

“Among all chronic complications of diabetes, diabetic neuropathies are probably the ones that are the most highly overlooked in practice,” said Rodica Pop-Busui, MD, PhD, another member of the Scientific Sessions Meeting Planning Committee. “It is the single most common complication of diabetes but we have almost nothing to offer our patients except to control hyperglycemia. We are going to show some less traditional ways of approaching neuropathy.”

Those nontraditional approaches will be discussed on Sunday, June 23, during a symposium titled Small Fiber Dysfunction in the Natural History of Diabetic Neuropathies in Type 1 and Type 2 Diabetes – From the Bench to the Bedside. The symposium will examine findings from both basic science and clinical translational research. Speakers will discuss neuropathy endpoints tested in animal models, as well as novel strategies to develop them and create more clinically useful endpoints. They will also discuss new clinical data on the positive impact of lifestyle and exercise interventions on neuropathy.

“Less traditional perspectives like focusing on small fiber neuropathy are critical to move the field forward,” said Dr. Pop-Busui. "We must employ new paradigms to find therapies for this very common and too often undertreated complication."
Beta cell research will be a hot topic at The Scientific Sessions

The traditional view of type 1 and type 2 diabetes as distinct diseases is giving way to a more unified perspective of beta cell failure as a common underlying factor for both diseases. This new way of thinking could signal a major shift in the perception of diabetes.

Several sessions in the Islet Biology/Insulin Secretion track will highlight the latest thinking about the beta cell’s role in the development, progression, and treatment of diabetes. Raghu G. Mirmira, MD, PhD, a member of the Scientific Sessions Meeting Planning Committee who helped organize the sessions in the track, said the committee focused on practical applications to make beta cells more effective and to engineer surrogate beta cells rather than developmental biology research, which had been the focus at recent Scientific Sessions.

This new emphasis on beta cell function begins on Friday, June 21, with a symposium on Beta Cell Failure in Type 1 Diabetes – Cause or Consequence? The beta cell focus continues on Saturday, June 22, with sessions titled Lipid Signaling in the Beta Cell and New Insights into Islet Inflammation.

Mandeep Bajaj, MD, another member of the Scientific Sessions Meeting Planning Committee, said the roles of lipotoxicity and inflammation in dysregulating beta cell function and impairing insulin secretion are important areas where the science is constantly evolving. “In the session on lipotoxicity, there is an entire lecture on the essential role of cholesterol transport in maintaining normal beta cell function, and the mechanisms by which disruption of cholesterol transport impairs insulin secretion,” said Dr. Bajaj, Professor of Medicine and Molecular and Cellular Biology at Baylor College of Medicine.

“On the inflammation side, there will also be exciting new data and new directions for the future,” he continued. “This will include a lecture on the mechanisms by which free fatty acids induce islet inflammation and beta cell dysfunction. Both lipotoxicity and beta cell inflammation play important roles in understanding the pathophysiology of type 2 diabetes as well as the central role of obesity.”

On Sunday, June 23, a session titled Phenotyping the Engineered Beta Cell will survey the current landscape as researchers work to establish the basic definitions and milestones that will help define the pathway to engineered beta cells. Decades of effort toward creating new beta cells is starting to come together in very practical ways, noted Dr. Mirmira, Professor of Pediatrics and Medicine, and Director of the Diabetes Research Center at Indiana University.

“Just because a cell secretes insulin does not make it a beta cell,” Dr. Mirmira said. “The reason is that insulin secretion may be dysregulated. You need a cell that can sense levels of glucose and secrete insulin in response. If engineering beta cells is to become a therapeutic reality, we need to be able to define the parameters of just what makes a beta cell a beta cell.”

On Tuesday, June 25, the symposium Engineering a Beta Cell – A Road Map will chart a course into the future and describe four possible strategies that might take current research all the way to clinical therapy.

One approach is gene therapy. While much of the work to date has been done in type 1 diabetes, the approach shows promise in type 2 as well.

Another approach is the generation and regeneration of beta cells. One possible technique is to generate beta cells from human pluripotent stem cells derived for a common tissue such as skin.

“Using pluripotent stem cells is very appealing,” Dr. Mirmira said. “Nobody should have a problem with this technique even if they had problems with using embryonic stem cells in the past. This is a new, very forward thinking way to accomplish the same goal.”

A final session will explore cell plasticity in the pancreas and the potential to regenerate beta cells by transforming other types of cells in the pancreas.

“Any of these techniques would provide new avenues of therapy that just don’t exist today,” Dr. Mirmira said. “Most therapies for diabetes today focus on making beta cells produce more insulin — they focus on reducing insulin resistance. These sessions are looking at ways to make the beta cell better at what it does, not just push it to secrete more insulin.”

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Pediatric diabetes, pregnancy care, and new health care delivery models to be discussed in clinical sessions

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Clinical Diabetes/Therapeutics track at the 73rd Scientific Sessions will explore topics ranging from pediatric diabetes and pregnancy care to changing health care delivery models.

“The sessions in the pediatric diabetes area this year will provide information about insulin resistance from pregnancy to birth and its relationship to both type 1 and type 2 diabetes,” said Amy B. Criego, MD, MS, a member of the Scientific Sessions Meeting Planning Committee who helped organize symposia in the Clinical Diabetes/Therapeutics track.

On Saturday, June 22, the symposium In Utero and Beyond—Insulin Resistance, Puberty, and Pregnancy in Pediatric Diabetes will bring together nationally and internationally recognized speakers to discuss the effects of prenatal growth on infant insulin resistance and future fertility. The four expert speakers will also address insulin resistance in the prevention and treatment of type 1 diabetes, pregnancy prevention education and intervention in pediatric diabetes, and puberty and the risk for complications in pediatric diabetes.

“Insulin resistance has become a topic of greater interest as we see more patients with excessive weight gain and obesity; not only in those with type 2 diabetes but also type 1 diabetes,” said Dr. Criego, Chair of Pediatric Endocrinology at the Park Nicollet Clinic International Diabetes Center.

“The fact that the speakers for this symposium will talk about the in utero development of prenatal risk factors for insulin resistance will be of particular interest to clinicians attending the meeting,” she added. “People who come to this session will learn how to identify patients who may be at risk and how to intervene earlier in everyday practice to decrease the risk of complications and adverse effects of insulin resistance.”

**CGM in pregnancy**

Another Saturday session, Continuous Glucose Monitoring (CGM) in the Management of Diabetes in Pregnancy, will provide an overview of the latest technology being used to manage diabetes during pregnancy.

The session’s four speakers will share insights concerning the use of CGM in normal and obese women during pregnancy, lessons learned from a randomized trial that analyzed the use of CGM in women with type 1 diabetes during pregnancy, the use of closed-loop systems with CGM in women with type 1 diabetes during pregnancy, and the potential use of CGM in newborns with hypoglycemia.

“The management of women with diabetes, especially those with type 1, is very challenging. There are new technologies emerging that will help us treat these women,” said Denice S. Feig, MD, MSc, a member of the Scientific Sessions Meeting Planning Committee who helped organize the session. “Women with type 1 and 2 diabetes in pregnancy are increasing in prevalence,” added Dr. Feig, Associate Professor of Medicine at the University of Toronto and head of the Diabetes and Endocrinology in Pregnancy Program at Mt. Sinai Hospital. “Women with both type 1 and type 2 diabetes have unique complications in pregnancy, and clinicians face difficult challenges in treating these complications. This and other sessions at the meeting will help clinicians learn what can be done to face those challenges.”

**Health care delivery**

Robert A. Gabbay, MD, PhD, another member of the Scientific Sessions Meeting Planning Committee, will open Saturday’s session on The Future is Now—Changing Health Care Delivery Models. He will be followed by three experts who will discuss the notion of expanding diabetes expertise within primary care as a novel role for endocrinologists, accountable care organizations as defined by the Affordable Care Act, and innovative new models of care.

“It’s a changing world in health care, and it’s all happening quite rapidly. Diabetes stands in the center of a lot of the changes that are happening, and it can help point to the future of how new models of care can be implemented,” said Dr. Gabbay, who is currently Professor of Medicine at the Penn State College of Medicine and Director of the Penn State Hershey Diabetes Institute, and will become Chief Medical Officer of the Joslin Diabetes Center in August.

“The concepts of self-management, a patient-centered medical home, and team-based care originated in the diabetes world and have now moved into the mainstream of chronic disease care,” Dr. Gabbay added.

The goal of the symposium is to examine a number of new approaches to diabetes care from a system perspective, whether that system is in primary care, an accountable care organization, or another type of delivery model, such as remote patient monitoring.

“One talk will explore how to engage primary care providers and help them do a better job in diabetes care because that’s where most diabetes patients receive their care. Endocrinologists can play a unique role to guide primary care activities for these patients,” Dr. Gabbay said.

“The current health care system may not be serving people with diabetes well because outcomes have not been particularly good,” he continued. “The reason may be that the system of care is poorly designed as a reactive, acute care system, which doesn’t work well for a chronic disease like diabetes. A retooling of the health care delivery system is finally happening, and this symposium will provide insights into new models of care.”

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Epidemiology, genetics sessions offer increased clinical focus

**Epidemiology and genetics have long been the purview of basic science with relatively limited appeal to clinicians.** The Scientific Session Meeting Planning Committee set out to change that by increasing the clinical focus in the Epidemiology/Genetics track at this year’s Scientific Sessions.

“In terms of the symposia, we are at a watershed moment in 2013,” said committee member Struan F.A. Grant, PhD, Assistant Professor of Pediatrics at the University of Pennsylvania and Children’s Hospital of Philadelphia Research Institute. “What we are doing this year is connecting what we are doing in the lab to the clinical world. We are saying very clearly to clinicians that this basic work you have heard about in the epidemiology and genetics fields is going to be very relevant to what you are doing in the clinic very soon. We want to convey where the field is today, where it is going and, most important of all, why and how this is all going to impact clinical practice.”

This heightened clinical focus will be on full display on Friday, June 21, during a symposium titled The Big Picture—Genetic Architecture of Diabetes.

“There are a lot of risk-conferring genetic variants that have now been characterized which are very common in the general population, raising one’s risk of diabetes relatively moderately,” Dr. Grant explained. “Although they are not particularly useful as diagnostic tools, especially in isolation, they have given us new crucial biologic insights into the disease.”

Less common variants may be even more important in individual risk, Dr. Grant continued, but not much is known about rare variations associated with diabetes. However, with the advent of whole genome sequencing approaches, that may soon change.

“These rare variants will not be so prevalent in the population, but if an individual harbors one it may confer substantially higher risk,” Dr. Grant said. “This is a critical insight that has the potential to be very powerful in the clinic.”

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The practical perspective

The advent of genome-wide association studies sent the genetics field on a wild ride of gene discovery around 2006. With the plethora of genetics insights now gained, Scientific Sessions planners thought it might be time to assess how those insights will be useful to patients and clinicians. Milking the Genome-Wide Association Study (GWAS)—Practical Applications for Metabolic Disease on Tuesday, June 25, will highlight some of the most useful applications.

“Clinicians have heard about GWAS but they can be a little intimidated by the language of ‘research-ese’ in this context,” Dr. Grant said. “This symposium is taking the information from that first symposium (described in this article) on common variations and honing in on ways we can exploit GWAS for clinical practice.”

One very practical application is using GWAS to identify metabolic pathways and potential clinical targets. One presenter during the session will look at how GWAS can move from genes to clinically relevant pathways, while a second presenter will examine different ways that software techniques can be used to turn GWAS data into clinical information.

Ethnicity has also emerged as a potential complication in GWAS. The session’s third presenter will explore population-wide approaches used to identify relevant genes in multiple populations, not just the largely Caucasian groups used to date for most GWAS studies in North America and Europe. The final speaker will look at efforts to uncover the functional meaning of genes and pathways discovered using GWAS as a way to move from genetic research to clinical targets.

**Pediatric research**

Research into pediatric diabetes is changing the understanding and treatment of all types of diabetes. A symposium on Saturday, June 22, titled Pediatric and Young Adult Genetics—Implications for Metabolic Health in Later Life will examine links between early life, diabetes, and long-term metabolic health.

“We have known for quite a long time that health in early life impacts you throughout life,” Dr. Grant said. “For instance, if you are born small you are more likely to get type 2 diabetes in later life as genes associated with low birth weight are also associated with the disease.”

The session’s first presenter will explore neonatal diabetes caused by a single gene disorder. A second speaker will explore additional familial monogenic diabetes, maturity onset diabetes of the young, or MODY. A third presenter will explore links between birth weight, maternal-fetal health, and long-term metabolic health. The final presentation will explore the genetics of latent autoimmune diabetes of adults, or LADA.
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