

MAY 2019

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

# Endocrine news

INTERNATIONAL

**A special 22-page rundown of the progress being made advancing the science and practice of endocrinology at the Endocrine Society's 102<sup>nd</sup> Annual Conference in New Orleans:**

- ▶ **Friendly Competition at the Knock Out Rounds.**
- ▶ **Early-Career Attendees Can't Curb Their Enthusiasm!**
- ▶ **Guided Poster Sessions Make a Successful Debut.**
- ▶ **The Endocrine Society Reaches Out to LGBTQ+ Members.**
- ▶ **The Latin American Leadership Academy Launches.**
- ▶ **Teresa Woodruff Discusses the History of Reproductive Transplants.**



# ENDO2019



## **BAD BREAKS:**

New Society guideline details osteoporosis drug therapies.

## **I AM ENDOCRINOLOGY:**

A lifelong fascination with the pituitary gland.

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*Hormone Science to Health*

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## An ENDO Gumbo in New Orleans!

Scientists and clinicians descended upon the Crescent City in anticipation of being a part of the biggest endocrinology meeting in the world. From the latest research to the newest patient therapies, **ENDO 2019** had something for everyone, all set against the backdrop of one of the country's most culturally rich cities.

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## The Endocrine Society: A Trusted Policy Advisor Around the World

**L**ast month, Congress conducted four hearings on insulin pricing. Several draft legislative proposals were considered, and several high-ranking representatives pledged they would do something to address the problem of rising insulin prices.

Behind the scenes, the Endocrine Society had been working to get Congress to conduct these hearings and had provided extensive comments and recommendations proposing various steps to gain access to affordable insulin for our patients. Over the past year alone, we arranged multiple meetings with Society members and their congressional delegations to discuss this topic and advocate for action; we conducted an educational briefing for members of Congress and their staffs about insulin pricing; we held a joint Hill Day with patients and caregivers from the Diabetes Patient Advocacy Coalition (DPAC)

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**Our work on insulin pricing is not done, but it is one example of Endocrine Society advocacy I am proud of.**

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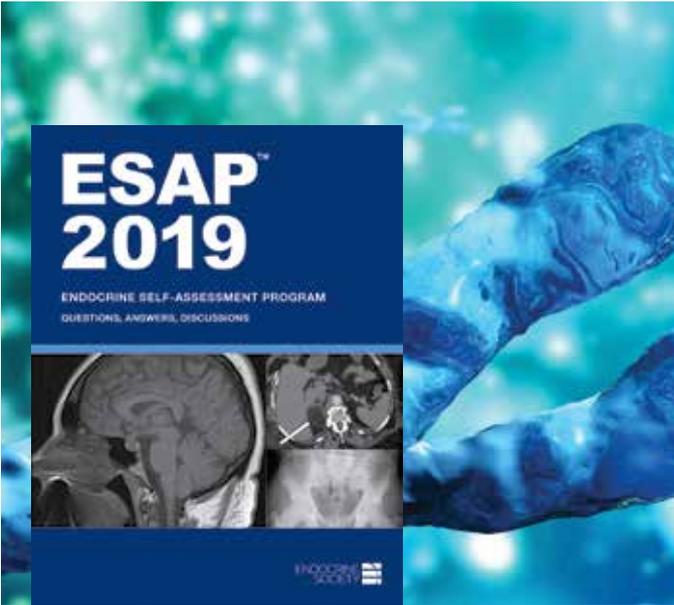
focused on this issue; we issued a position statement on insulin pricing; and we worked extensively with the Congressional Diabetes Caucus to raise visibility of the problem. In recognition of our role and contributions, we were one of only two medical societies invited to testify at the hearings. Our work on insulin pricing is not done, but it is one example of Endocrine Society advocacy I am proud of.

Led by our Advocacy and Public Outreach Core Committee (APOCC), the Society works on a number of legislative and regulatory issues affecting our members here in the U.S. and globally. Our policy priorities include: increased funding for the National Institutes of Health (NIH), ensuring access to adequate, affordable healthcare, improved regulation of endocrine-disrupting chemicals (EDCs) in the U.S. and internationally, realigning physician payment to recognize the value endocrinologists bring to the healthcare system, reduction in the prevalence of diabetes and obesity, and protecting access to care for women and transgender patients.

Our advocacy work is constant and is making a difference. While Endocrine Society member Alvin Powers, MD, was testifying on one end of the Capitol about insulin pricing, we also submitted testimony to the Appropriations Committee in the House of Representatives advocating for increased funding for biomedical research. As a result of advocacy supporting the NIH and demonstrating the value of endocrine-related research, both the House of Representatives and the Senate have announced they plan to boost NIH spending despite cuts proposed by President Donald Trump. The same day we were testifying in Washington, D.C., across the Atlantic members of our European Union (EU) EDC Advocacy Advisory Committee were contacting their Members of Parliament urging them to support the recommendations issued in a report prepared by Society members Barbara Demeneix, MD, and Remy Slama, MD, about the need for expanded regulation of EDCs. The European Parliament voted in favor of a resolution calling for the EU to take greater action in regulating EDCs.

Later this month, we will submit comments to the U.S. Food and Drug Administration about how to increase access to insulin biosimilars; we will continue our advocacy to protect physician reimbursement for evaluation and management (E/M) visits; and we will continue to advocate for renewal of funding for the Special Diabetes Program.

The Endocrine Society has become the trusted policy advisor for policy makers in the U.S., EU, and around the globe. I invite you to join me in participating in Endocrine Society advocacy. We always welcome members' participation in visits to politicians and with policy makers. You can also find links to weekly advocacy updates in your *E-News* newsletter and more details about our work on [endocrine.org/advocacy](http://endocrine.org/advocacy). Please keep an eye out for our advocacy alerts in your email, and please respond. Our collective voices are powerful and effective! We would love to have more members join our online advocacy campaigns and share our policy priorities with policy makers. If you have any questions or comments, please contact me at [president@endocrine.org](mailto:president@endocrine.org). 



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FROM THE **EDITOR**

## ENDO 2019: What It Means to Miss New Orleans

I know I say this every year post-ENDO, but once again, **ENDO 2019** outdid all previous incarnations...and that's not the gumbo talking (although I did consume my weight in New Orleans food and drink while at ENDO!).

While last month we highlighted some of the breaking research presented in New Orleans, the centerpiece of this month's issue is the annual **ENDO** wrap up. Our coverage begins on page 18 and is rich with photography from throughout the four-day event. **ENDO 2019** saw several new additions to the regular programming, both academic and social, that should do wonders to encourage attendance in the future. Among the new offerings are:

“  
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”

- **Guided Poster Sessions:** These new and improved poster presentations were set up more like a game show or talk than a lecture. The posters were presented on interactive screens (akin to CNN's "magic wall") that the presenters could manipulate at their leisure to highlight an area of their poster as well as enlarge it, reduce it, and so on. The presenters gave their talks to enthusiastic crowds gathered around them on the **ENDO** Expo floor and created a spirit of camaraderie among colleagues.

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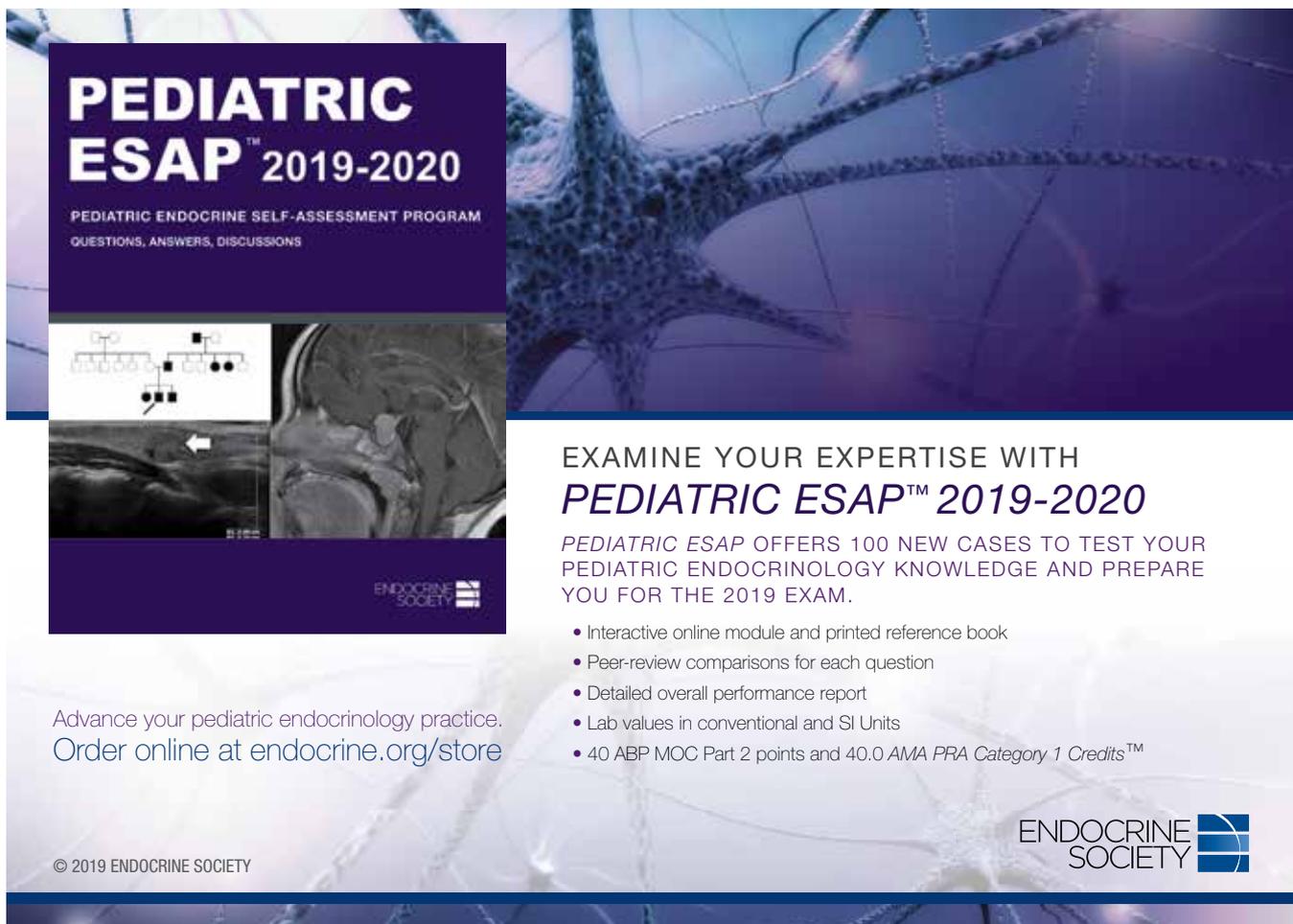
- **LGBTQ+ Outreach:** For the first time, **ENDO 2019** hosted a reception for LGBTQ members and allies. While the attendance of around 50 might be considered modest against the backdrop of a conference attended by thousands, those who did attend were eager and excited that the Endocrine Society's Committee on Diversity and Inclusion (CoDI) launched this initiative. More on this meeting can be found on page 30 where we talk to CoDI co-chair Bruno Ferraz-de-Souza, MD, who said that this outreach was created in order to celebrate this segment of the Society's membership as well as to "promote and develop personal and institutional relationships that support the LGBTQ+ community."
- **Latin American Leadership Academy:** Through a partnership with six South American offices of Sanofi, the Society was able to host the inaugural meeting of the Latin American Leadership Academy, which had an attendance of over 60 clinicians from over 15 countries who all participated in a day-long leadership program the day before **ENDO 2019** (p. 38). Aside from taking part in

this new mini-conference, many of the participants were attending an **ENDO** for the very first time. In addition, they all had the opportunity to visit a local medical facility to get a firsthand look at how endocrine research and treatment are conducted by their U.S. colleagues.

We also have a roundtable discussion by some of the Endocrine Society's Early-Career members about their impressions of **ENDO 2019** (p. 32) and, we highlight Teresa Woodruff's Sawin History of Endocrinology Lecture that took the audience through the compelling history of transplantation in reproductive health (p. 29).

All in all, **ENDO 2019** was personally one of my more memorable meetings but, alas, I say that every year. No doubt I'll be repeating myself next May after **ENDO 2020** in San Francisco! <sup>EN</sup>

— **Mark A. Newman**, Editor, *Endocrine News*



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## “A Mouse in One Hand and a Pipet in the Other”

BY MARIA INES PEREZ-MILLAN, PHD, ASSISTANT PROFESSOR, INBIOMED, University of Buenos Aires, CONICET, Argentina

**M**y fascination for the pituitary gland began when I was studying biotechnology at the University of Quilmes in Argentina. One day, I was in physiology class with Dr. Diego Golombek — the best teacher ever — and the topic of the day was “The Pituitary Gland.” That day I learned how important this tiny gland is to maintain many bodily functions. I also realized how much I love research. I spied into his lab and thought, “I want to be that person with a lab coat and a mouse in one hand and a pipet in the other.”

### #IAMENDOCRINOLOGY

**NAME:** Maria Ines Perez-Millan, PhD

**AFFILIATION:** University of Buenos Aires, CONICET, Argentina

**MENTORS:** Damasia Becu-Villalobos, PhD; Marcelo Rubinstein, PhD; Sally Camper, PhD

**HOW HAS THE ENDOCRINE SOCIETY SUPPORTED YOU IN YOUR CAREER?** The Endocrine Society supported each step of my career since I was a PhD student until today as an independent scientist starting my own lab back in Argentina.

After graduating, I started my PhD under the mentorship of Drs. Damasia Becu and Marcelo Rubinstein working with pituitary tumors and transgenic mice (my other love). I conducted a cell-specific genetic ablation in mutant mice that selectively lack dopamine D2 receptors (D2R) in pituitary lactotropes (lacDrd2KO) or neurons (neuroDrd2KO). This study allowed us to make two important discoveries. First, central D2Rs mediate a neuroendocrine-exocrine cascade that controls the maturation of the GH axis and downstream signals that are critical for fitness, social

dominance, and competition among adult males. Second, prolactin has an important role as a metabolic hormone. I also extended the study to human pituitary adenomas, and I found a rise in cell proliferation and angiogenesis in these tumors relative to controls. This work has provided the basis for developing new treatments for pituitary adenomas based on antiangiogenic therapies.

I was so lucky. Marcelo always told me, “You should go and do science internationally. Living in another country is an experience everyone should have.” During my last year of graduate school, I was nominated by the Endocrine Society for the International Endocrine Scholar Program and selected to receive a scholarship to attend the meeting and interview for postdoctoral training in the U.S. During **ENDO**, I met Dr. Sally Camper, professor at the University of Michigan, and after discussing projects, I decided to go to her lab for a postdoctoral position to gain experience in human genetics, genomics, and embryonic stem cell technology. The main focus of my postdoctoral research was the transcription factor PRO1. PRO1 mutations in mice and humans cause multiple hormone deficiencies and pituitary hypoplasia, but the mechanism underlying the disease pathophysiology was not understood. We discovered that PRO1 is essential for maintaining proliferation of stem cells and stimulating them to undergo an epithelial to mesenchymal transition-like process.

I was lucky again. Sally was an incredible mentor, and she encouraged me to start my independent career. In 2016, I came back home and started my own lab at the University of

If you would like to share your story with our readers around the world, contact Editor Mark A. Newman at [mnewman@endocrine.org](mailto:mnewman@endocrine.org).

**EDITOR'S NOTE:** The opinions and views of the author do not necessarily represent those of *Endocrine News* or the Endocrine Society.

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Don't forget to tag **@Endocrine\_News** and **@TheEndoSociety** on Twitter.

Buenos Aires in Argentina. The principal aim of my research is to identify the major genetic factors that predispose to and cause hypopituitarism and craniofacial disorders. I established collaborations in Buenos Aires with clinical endocrinologists. We combine molecular approaches (Next Generation

“

**The ENDO meetings consistently help me achieve my research plans by permitting me to participate in exceptional international meetings, to exchange ideas and provide an opportunity to collaborate within the international scientific community, and to acquire advanced technologies.**

”

Sequencing or NGS panels and WGS), in vitro functional assays, and in vivo (generation of mutant mice) analyses.

The ENDO meetings consistently help me achieve my research plans by permitting me to participate in exceptional international meetings, to exchange ideas and provide an opportunity to collaborate within the international scientific community, and to acquire advanced technologies. These opportunities are critical for launching my independent career and for overcoming challenges associated with working in a less developed country.

In 2017, I won the Early Investigator Award from the Endocrine Society. This allowed me to not only attend the meeting but also to increase my networking and establish new collaborations.

In 2018, I was invited to present my work in a symposium at ENDO. This was an incredible opportunity to show and discuss what I am doing in my lab in Buenos Aires, and it positioned me as local leader in genetics in endocrinology in Argentina. GO ENDO! 

## NEWLY UPDATED CPG APP

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## Daniel J. Drucker, MD, Named 2019 Hamm Prize Laureate



MEMBERS  
in the  
NEWS

“

**I am very pleased that the work of our group, including many students and postdoctoral fellows ... has been highlighted for recognition by the Harold Hamm Diabetes Center.**

”

**D**aniel J. Drucker, MD, editor-in-chief of *Endocrine Reviews*, will be honored with the 2019 Harold Hamm International Prize for Biomedical Research in Diabetes.

Drucker is a professor of medicine at the Lunenfeld-Tanenbaum Research Institute, Mt. Sinai Hospital, University of Toronto in Ontario, Canada. This honor comes with a \$250,000 award — the largest of its kind in the world — and will be awarded this fall by Harold Hamm Diabetes Center at the University of Oklahoma Health Sciences Center.

The Hamm Prize recognizes and encourages lasting advances in the field of diabetes research. It is awarded to an individual who has either demonstrated lifelong contributions to the field or realized a singular advance, especially in leading toward a cure.

Drucker was chosen for the prize by an international jury of diabetes scientists who met in Oklahoma in April. Jury members are Endocrine Society members George L. King, MD, Harvard Medical School; Jay S. Skyler, MD, University of Miami; and Steven E. Kahn, MB, ChB, University of Washington. Bruce A. Buckingham, MD, Stanford University; and Bernard Thorens, PhD, University of Lausanne, Switzerland, round out the jury.

“This honor bestowed upon my research group is further affirmation of the scientific excellence in metabolism research at the Lunenfeld-Tanenbaum Research Institute and the University of Toronto,” Drucker says. “Since 1921, and the discovery of insulin, Canadian scientists have continued to make important contributions to understanding the factors causing diabetes and the development of new diabetes medications. I am very pleased that the work of our group, including many students and postdoctoral fellows, that has developed over a period of 25 years from basic science discovery to clinical impact, has been highlighted for recognition by the Harold Hamm Diabetes Center.”

The 2019 Harold Hamm International Prize for Biomedical Research in Diabetes will be presented during the Connect+Cure Gala at the National Cowboy and Western Heritage Museum in Oklahoma City on October 22, 2019. The Connect+Cure Gala is a biennial gala to benefit the Harold Hamm Diabetes Center and to raise awareness of diabetes research, clinical care, and prevention.



## Endocrine Society Commends European Parliament's EDC Resolution

**T**he Endocrine Society praised the European Parliament's resolution calling for greater European Union action to regulate endocrine-disrupting chemicals (EDCs) that pose a serious threat to the health of current and future generations.

The resolution was adopted Thursday by an overwhelming cross-party majority during the final voting session of the current Parliament's term and affirms the European Parliament's commitment to shield the public from exposure to EDCs.

The Society has spent years pressing for science-based regulation of these chemicals, which mimic, block, or otherwise interfere with the body's hormones. EDCs are commonly found throughout our environment in children's products, food containers, personal care products, pesticides, and furniture.

The resolution directs the European Commission to propose legislation to regulate EDCs in toys and cosmetics and to update the regulations governing EDCs in food contact materials by June 2020. It emphasizes that EDCs pose a similar public health threat as carcinogens, substances that cause genetic mutations and reproductive toxins, and concludes that EDCs should be regulated in the same manner by the European Union.

"This welcome vote shows that all major political groups in Parliament are committed to protecting current and future generations from the public health threat posed by EDCs," says Angel Nadal, PhD, chair of the Society's EDC Advisory Group and professor at Miguel Hernández University in Elche, Spain. "The resolution's passage reflects years of advocacy by the

Endocrine Society as a scientific authority calling for evidence-based regulation of EDCs."

The vote comes a month after the Parliament's Committee on Petitions unveiled a scientific report demonstrating how current EU regulations are limited in their ability to identify EDCs and fail to protect consumers from the effects of exposure to chemical mixtures. Endocrine Society members Barbara Demeneix, PhD, of Muséum National d'Histoire Naturelle, in Paris, France, and Rémy Slama, PhD, of INSERM (National Institute of Health and Medical Research), in Grenoble, France, wrote the report, which called for the development of a coordinated set of EU regulations to govern all types of EDCs across different uses and EU laws.

The Parliament's resolution addresses the need to accelerate the development of better tests and strategies for identifying EDCs — a policy the Society supported in its position statement issued last year. The resolution also calls for the European Commission to promote research related to EDCs, which is needed to fully understand the impact of these chemicals.

A series of economic analyses found EDC exposure may be costing the European Union upwards of €157 billion (U.S. \$177 billion) a year. Society experts led the effort to quantify the public health impact of EDCs on the economy.

"We applaud this resolution sending a strong political signal based on latest science, that it is high time for the EU to take serious action to address the cumulative impact of our daily exposure to chemical mixtures on public health," Nadal says.

## Science News Writer Receives Endocrine Society Journalism Award



**S**cience News health and biomedical reporter Aimee Cunningham received the Endocrine Society's annual Award for Excellence in Science and Medical Journalism.

Cunningham was honored at the Society's annual meeting in New Orleans, La., for her coverage on hormone replacement for menopausal women. The winning article, "Hormone replacement makes sense for some menopausal women," was published in *Science News* in January 2018.

In her article, Cunningham discusses the 2002 Women's Health Initiative study that linked hormone replacement therapy to

breast cancer and heart disease, causing a lot of fear among patients and doctors. Many women stopped hormone therapy and missed out on the treatment of debilitating menopause symptoms like frequent hot flashes and poor sleep. Cunningham highlights new data in her article that provides evidence for the benefits of hormone replacement therapy for some menopausal women.

The Society established the journalism award in 2008 to recognize outstanding reporting that enhances the public understanding of health issues pertaining to the field of endocrinology.

## New Website Created for EDC Researchers



**W**ith the debut of [www.HEEDS.org](http://www.heeds.org), researchers and scientists now have a go-to site for accurate and up-to-date research on endocrine-disrupting chemicals (EDCs). HEEDS — Healthy Environment and Endocrine Disruptors Strategies — is a new online clearing house for the latest collection of reliable and curated scientific research related to EDCs.

Aside from simply being a website, HEEDS is a coalition of scientists, advocacy groups, and communication and policy experts whose overall goal is to help educate and provide current and timely resources on the hazards of exposures to EDCs and the data and framework needed to facilitate change in the manufacturing, marketing, and management of chemicals to avert the ongoing erosion in the welfare of life on Earth. HEEDS also addresses how EDC exposures can be reduced and thereby improve health.

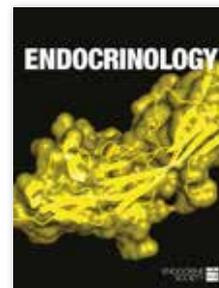
For more information, go to [www.heeds.org](http://www.heeds.org).



BY DEREK BAGLEY  
Senior Editor



## Researchers Find Evidence of Novel Pathway in Regulation of Body Weight, Temperature



**L**eptin receptor signaling in single-minded homolog gene (*Sim1*) neurons plays a role in the regulation of body weight and temperature, according to a mouse study recently published in *Endocrinology*.

Researchers led by Masoud Ghamari-Langroudi, MD, PhD, of the Vanderbilt School of Medicine in Nashville, Tenn., point out that the obesity epidemic continues to grow, and that two-thirds of the U.S. population are now overweight and obese. They write that there are a variety of circulating factors that play a role in regulating body weight, the most well-studied of which is leptin. The central expression and function of leptin receptor B (*LepRb*) have been studied for 20 years, the authors write, but the mechanisms by which *LepRb* signaling dysregulation contributes to obesity aren't clear. "The role of *LepRb* expression in the PVN in regard to the regulation of physiological function of leptin has been controversial," the authors write. "[*Sim1*] is densely expressed in the PVN and in parts of the amygdala, making *Sim1-Cre* mice a useful model for examining molecular mechanisms regulating PVN function."

The researchers generated a mouse line with *LepRb* deleted from their *Sim1* neurons and found that these mice grow at a normal rate while eating

normal chow but when fed a high-fat diet they developed obesity. These mice also had a decreased body temperature and a defective thermoregulatory response when exposed to cold temperatures associated with the inability to upregulate uncoupling protein 1 in the brown adipose tissue and total thyroxine (T4) in serum. "These data shed light on the role of *Sim1* neurons *LepRb* function in the regulation of energy homeostasis and adaptive thermoregulatory neuroendocrine responses," the authors write.

**Findings:** The authors go on to write that activation of central thermogenic circuits to increase the UCP1-induced thermogenesis may provide a therapeutic approach to treat obesity. "In this context," the authors conclude, "our data suggest that *LepRb* signaling expressed in this pathway could be potentially targeted by positive allosteric modulators to increase signaling in the presence of endogenous agonists."

“

These data shed light on the role of *Sim1* neurons *LepRb* function in the regulation of energy homeostasis and adaptive thermoregulatory neuroendocrine responses.

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## Case Study Illuminates Adrenocortical Carcinoma's Association with Lynch Syndrome



“  
Steroid profiling is an attractive alternative that could help diagnose ACC much earlier in the natural history of the disease.  
”

**A**drenocortical carcinoma (ACC) can be the only manifestation in patients with Lynch syndrome (LS) — which is already associated with a higher risk of colorectal cancer and endometrial cancer — according to a paper recently published in the *Journal of the Endocrine Society*.

Researchers led by Irina Bancos, MD, of the Mayo Clinic in Rochester, Minn., point out that while ACC was reported in 3.2% of patients with LS, no particular case-detection strategies have been recommended. In this paper, the authors present a case study of a 65-year-old woman with a history of hypertension who was incidentally discovered to have a large adrenal mass after she presented with postmenopausal vaginal bleeding. This patient's sister had recently been diagnosed with LS, so the investigators performed genetic tests, and the patient tested positive for familial pathogenic variant in MSH6, a variant that accounts for about 18% of LS cases. The team then performed a colonoscopy, which was normal.

The patient was mostly asymptomatic during clinical evaluation. She complained of some fatigue and loss of appetite and weight, but she attributed this to the stress of being diagnosed with an adrenal mass. She had no Cushingoid features, acne, or hirsutism. Her blood pressure was 135/83 mmHg, and she showed no clinical features suggestive of primary hyperaldosteronism, such as edema or hypokalemia.

However, the authors write that a biochemical workup revealed evidence of androgen excess, elevated serum steroid precursors, and estrogen excess, and the patient demonstrated evidence of adrenocorticotrophic hormone (ACTH) independent cortisol excess based on abnormal cortisol concentrations after 1 mg overnight dexamethasone administration, along with low ACTH and elevated 24-hour, urine-free cortisol.



“Urine multiteroid profiling was performed and was highly suspicious for ACC,” the authors write. “Based on the clinical, biochemical, and imaging presentation, ACC was suspected, and adrenalectomy was recommended.” The patient was treated and remains in remission.

This case of a patient with LS whose only presentation was incidentally discovered ACC and had no other manifestations of LS is one of only 13 reported so far in the literature, according to the authors. It's challenging to diagnose ACC when it's asymptomatic, and even in patients with a genetic predisposition to ACC, the incidence is still too low to warrant imaging.

**Findings:** “Steroid profiling is an attractive alternative that could help diagnose ACC much earlier in the natural history of the disease,” the authors write. “In our patient, steroid profiling confirmed our suspicion of ACC after discovery of adrenal mass. Whereas in this case, steroid profiling did not change our management, after appropriate validation, this test could be offered as a case-detection, noninvasive, and radiation-free test to patients at high risk for ACC.”

# Canagliflozin Significantly Reduces the Risk of Renal Failure in Patients with Type 2 Diabetes and Chronic Kidney Disease in Phase 3 CREDENCE Study

**T**he Phase 3 CREDENCE study recently showed that canagliflozin demonstrated a 30% reduction in the risk of progression to end-stage kidney disease (ESKD), defined as the need for renal replacement therapy (RRT) such as chronic dialysis or renal transplant; doubling of serum creatinine, a key predictor of ESKD; and renal or cardiovascular (CV) death.

The study evaluated the efficacy and safety of canagliflozin versus placebo in patients with chronic kidney disease

(CKD) and type 2 diabetes when used in addition to standard of care. Study results also showed canagliflozin reduced the risk of the secondary CV endpoints, including the risk of CV death and hospitalization for heart failure by 31%, major adverse CV events (MACE; composite of nonfatal myocardial infarction [MI], nonfatal stroke and CV death) by 20%, and the risk of hospitalization for heart failure alone by 39%. Importantly, the study showed no imbalance in amputation or bone fracture. Additionally, no new safety concerns were identified in this study of high-risk patients.

The data were presented last month during a late-breaking clinical trials session at the International Society of Nephrology 2019 World Congress of Nephrology in Melbourne, Australia, and simultaneously published in the *New England Journal of Medicine*.

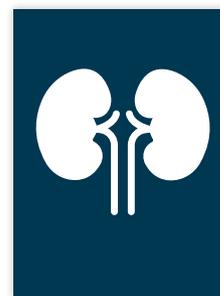


The Phase 3 CREDENCE (Canagliflozin and Renal Events in Diabetes with Established Nephropathy Clinical Evaluation) clinical trial was a randomized, double-blind, event-driven, placebo-controlled, parallel-group, two-arm, multicenter study. It evaluated 4,401 patients with type 2 diabetes, Stage 2 or 3 CKD (defined as an estimated glomerular filtration rate (eGFR) of  $\geq 30$  to  $< 90$  mL/min/1.73 m<sup>2</sup>), and macroalbuminuria (defined as urinary albumin-to-creatinine ratio (ACR)  $> 300$  to  $\leq 5,000$  mg/g), who were receiving

standard of care including a maximum tolerated labeled daily dose of angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs).

**Findings:** “Canagliflozin is the first medical breakthrough in nearly 20 years proven to slow the progression of chronic kidney disease in patients with diabetes at high risk of developing kidney failure,” says Vlado Perkovic, MBBS, PhD, FASN, FRACP, CREDENCE Steering Committee co-chair, executive director, the George Institute for Global Health, Australia, and professor of medicine, UNSW Sydney. “These impressive results from the CREDENCE study have significant clinical implications for preventing kidney failure and improving health for millions of people living with chronic kidney disease and type 2 diabetes.”

**The Janssen Pharmaceutical Companies of Johnson & Johnson is funding the study and marketing canagliflozin as INVOKANA. **



“  
**Canagliflozin is the first medical breakthrough in nearly 20 years proven to slow the progression of chronic kidney disease in patients with diabetes at high risk of developing kidney failure.**”

”



“  
Tumors from different locations exhibit a different relationship with genetic or hormone-derived syndromes, display different driver alterations in sporadic cases, have a different ratio of aggressive [versus] indolent cases, and often have extremely different outcomes.”

## Review Examines Genetics and Epigenetics of Gastroenteropancreatic Neuroendocrine Neoplasms

A paper recently published in *Endocrine Reviews* summarizes what's presently known about the genetic and epigenetic alterations that sustain gastroenteropancreatic (GEP) neuroendocrine neoplasms (NENs) and points to the need for further investigation of these rare but potentially malignant tumors.

Authors Andrea Mafficini, PhD, and Aldo Scarpa, MD, PhD, of the University of Verona, in Italy, point out that while GEP-NENs are rare, their incidence rate has tripled in the past 40 years. They write that GEP-NENs include well-differentiated neuroendocrine tumors (NETs) and poorly differentiated neuroendocrine carcinomas (NECs). “NETs are graded as grade 1 (G1), grade 2 (G2), or grade 3 (G3) based on mitotic count and/or Ki-67 labeling index; NECs are G3 by definition,” the authors write.

According to Mafficini and Scarpa, what distinguishes NETs from NECs are their genetic background, as TP53 and RB1 inactivation in NECs set them apart from NETs. “A large number of genetic and epigenetic alterations have been reported,” they write.

Due to the growing amount of studies and data reporting these alterations, targeted therapies for GEP-NETs have been developed and approved in recent years. However, these treatments face a low response rate and resistance phenomena that limit their efficacy in prolonging the time to progression, the authors write. Clinical and preclinical trials have been looking at the combination of molecular drugs to address these

problems, and there have been some promising results combining everolimus and PI3K inhibitors, but these results haven't been validated in a clinical setting. “Recent reviews have pinpointed that clinical trials on GEP-NETs need to be improved by exploiting molecular markers derived from the accumulated knowledge on altered pathways,” the authors write. “These may help patient stratification and possibly predict response to therapy.”

But GEP-NETs are heterogeneous, and the authors write that they display more differences than similarities. “Tumors from different locations exhibit a different relationship with genetic or hormone-derived syndromes, display different driver alterations in sporadic cases, have a different ratio of aggressive [versus] indolent cases, and often have extremely different outcomes,” they write.

**Findings:** The differences in how these tumors form and act, as well as the scarcity of disease models, have led to some blind spots and opportunities for further study. Disease models that can produce a similar heterogeneity in humans will be vital to the development of targeted drugs. “[F]urther research is necessary to fully integrate and functionalize data on deregulated pathways to recapitulate the large heterogeneity of behaviors displayed by these tumors. This is expected to impact diagnostics, prognostic stratification, and planning of personalized therapy,” Mafficini and Scarpa conclude.

READ THIS AND OTHER ENDOCRINE SOCIETY JOURNAL ARTICLES AT  
[HTTPS://ACADEMIC.OUP.COM/ENDOCRINESOCIETY](https://academic.oup.com/endoctrinesociety)

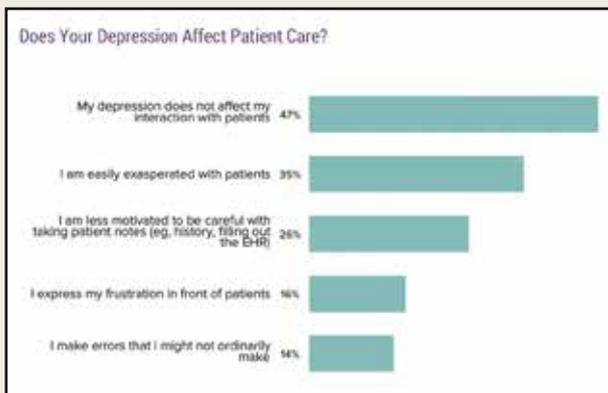
“ The ethnic, religious, and generational diversity seen at the conference is a highlight that is often overlooked. One of the best parts of the conference for me is to interact with endocrinologists from around the world. I love walking down the halls and seeing people from all races, ages, and religions, from medical students to directors of large research centers. I believe that the true value of this conference is not only the diversity of the presentations but also in the diversity of the background of the attendees and speakers.”

— Maria Gabriela Suarez, a fellow at Oregon Health Sciences University in Portland, when asked what surprised her about attending **ENDO 2019** for the first time. Read more of her and her colleagues' comments about their own **ENDO 2019** experiences in "First Impressions: Talking with Early-Career ENDO 2019 Attendees" on page 32.



**21.4%**  
Percentage of blacks, American Indians, and Hispanics who graduated from U.S. medical schools from 1978 to 2015.

— SOURCE: ASSOCIATION OF AMERICAN MEDICAL COLLEGES



— SOURCE: MEDSCAPE'S NATIONAL PHYSICIAN BURNOUT, DEPRESSION & SUICIDE REPORT 2019  
Image reproduced with permission from Medscape (<https://www.medscape.com>), 2019, available at: <https://www.medscape.com/slideshow/2019-lifestyle-burnout-depression-6011056>.

FROM THE CENTURY OF ENDOCRINOLOGY TIMELINE

# 1917: Endocrinology Published

The first issue of the journal *Endocrinology* was published in 1917. Lewellys Barker, who would be the second Association president, wrote to start this issue: "This is the first number of a new medical journal, the first to be devoted entirely to the study of the internal secretions."

For more about the Century of Endocrinology, go to: [www.endocrine.org/timeline](http://www.endocrine.org/timeline).



- 2x** – men with diabetes are twice as likely to get cardiovascular disease
- Every **80** seconds – how often an adult with diabetes is hospitalized for heart disease
- Every **2** minutes – how often an adult with diabetes is hospitalized for stroke
- 7** in **10** – people with diabetes over age 65 will die from heart disease
- 1** in **6** – will die of stroke – SOURCE: AARP, THE MAGAZINE



**2019 Clinical  
Endocrinology  
Update/  
Endocrine Board  
Review**

**CEU East:  
Miami, Florida,  
Sept. 5 – 7, 2019**

**CEU West/  
EBR: Seattle,  
Washington, Sept.  
17 – 21, 2019**

Once again this year, endocrine clinicians from around the world will have a choice about which Clinical Endocrinology Update (CEU) they choose. CEU East will take place in Miami while CEU West/Endocrine Board Review (EBR) will land on the West Coast in Seattle.

Miami's Intercontinental Hotel will be the location of the 2019 CEU East September 5 – 7, and the Hyatt Regency Seattle will be where the joint meeting of the EBR and CEU West take place on September 17 – 21. Each year CEU brings together hundreds of endocrine clinicians for a unique learning experience and opportunities to network with expert faculty and colleagues. Attend the 71st CEU to receive the most trusted and clinically relevant information about recent advances in the field of endocrinology. The educational programming at CEU appeals to clinicians at all levels of practice, as well as fellows and other members of the clinical practice team. Unlike other board preparation meetings, the Endocrine Society's EBR offers a comprehensive mock-exam format with case-based American Board of Internal

Medicine-style questions forming the bulk of the presentations. Each section follows the ABIM blueprint for the board exam, covering the breadth and depth of the certification/recertification examination. Each case will be discussed in detail, with the correct and incorrect answer options reviewed. The mock exam appeals to endocrine fellows who have completed or are nearing completion of their fellowship and are preparing to take the board certification exam. Practicing endocrinologists may appreciate the EBR's comprehensive self-assessment of endocrinology either to prepare for recertification or to update their practice.

[www.endocrine.org/ceu](http://www.endocrine.org/ceu)  
[www.endocrine.org/eb/2019](http://www.endocrine.org/eb/2019)

**EARLY REGISTRATION:  
NOW – AUGUST 1, 2019**

**International Conference on  
Reproductive Medicine and  
Biology**

**Las Vegas, Nevada,  
May 22 – 23, 2019**

The International Conference on Reproductive Medicine and Biology (ICRMB19) provides a global platform for international scholars and researchers to voice their research findings to the world. This conference provides an opportunity for the fertility and medicine industry to learn about current and upcoming issues, explore new developments in culture

technology, and interact with others with similar interests. Topics of interest include but are not limited to assisted reproductive technology in vitro fertilization, female reproductive endocrinology, fertility preservation, male reproductive endocrinology, and obesity and metabolism.  
[www.meetingsint.com](http://www.meetingsint.com)

**Vitamin D Workshop**

**New York, New York,  
May 29 – June 1, 2019**

The Vitamin D Workshops are international scientific conferences that bring together

basic researchers, clinicians, and nutrition experts from around the globe during a multi-day forum where the latest research on vitamin D is presented, debated, and shared. The workshop will look at health implications of vitamin D by focusing on topics including adipose tissue appetite and obesity, bone and mineral metabolism, and steroid hormones and receptors.

[www.vitamindworkshop.org](http://www.vitamindworkshop.org)

INTERNATIONAL ITINERARY



**American Diabetes Association  
79th Scientific Sessions**

**San Francisco, California,  
June 7 – 11, 2019**

The Scientific Sessions offers researchers and healthcare professionals an opportunity to share ideas and learn about the significant advances in diabetes research, treatment, and care. Over the course of five days, attendees will receive access to more than 2,800 original research presentations, take part in in-depth conversations with leading diabetes experts, and expand professional networks with colleagues from around the world.

[www.professional.diabetes.org](http://www.professional.diabetes.org)

**ObesityWeek**

**Las Vegas, Nevada, November 3 – 7, 2019**

ObesityWeek is a unique, international event focused on the basic science, clinical application, surgical intervention, and prevention of obesity. By combining both American Society for Metabolic & Bariatric Surgery (ASMBS) and The Obesity Society (TOS) annual meetings, ObesityWeek brings together world-renowned experts in obesity to share innovation and breakthroughs in science unmatched around the globe. This year, the international conference will focus on the heart, the cardiac component of obesity. Attendees will enjoy the diverse educational opportunities, networking events, and scientific synergies created through the collaboration of these leading obesity organizations.

[www.obesityweek.com](http://www.obesityweek.com)

**International Conference on Clinical Diabetes, Diabetic Medication, and Treatment**

**Osaka, Japan, June 17 – 18, 2019**

Clinical Diabetes 2019 is a congress designed to provide an exclusive forum for doctors, dieticians, researchers, scholars, students, and scientists to discuss the latest advances, challenges, trends, concerns, applications, and solutions in mitigating diabetes. Some of the topics for this year's sessions include cellulite and endocrinology, cell therapy for diabetes, and diabetes medications and pharmacotherapy.

<https://www.meetingsint.com/conferences/clinicaldiabetes>

**4th International Conference and Exhibition on Metabolic Syndrome**

**Paris, France, June 20 – 21, 2019**

The theme of Metabolic Syndrome 2019 is "Promoting Care, Prevention, and Cure Worldwide" and will highlight recent research and findings in endocrinology and metabolic syndromes. The two-day conference includes workshops, symposiums, and special keynote sessions that focus on topics including male and female reproductive health, PCOS and metabolic syndrome, energy metabolism and stress management, and tissue engineering and stem cell transplantation.

[www.metabolicsyndromes.conferenceseries.com](http://www.metabolicsyndromes.conferenceseries.com)

**World Congress on Thyroid Cancer**

**Rome, Italy, June 20 – 22, 2019**

This scientific meeting is organized for experts in the fields of endocrinology and oncology from around the world to share research and ideas to further the understanding of the management of thyroid cancer. The delegates attending this congress lay the groundwork for collaborations and the direction of future thyroid cancer research.

[www.thyroidworldcongress.com](http://www.thyroidworldcongress.com)

**9th International Conference on Children's Bone Health**

**Salzburg, Austria, June 22 – 25, 2019**

ICCBH meetings provide an international forum for the presentation and discussion of current basic and clinical science in the field of bone metabolism and bone mass in children, adolescents, and young adults. The conference topics will include bone and mineral metabolism, development, pediatric endocrine practice, among others. (20 CME credits offered.)

[www.iccbh.org](http://www.iccbh.org)

**28th European Diabetes Congress**

**Edinburgh, Scotland, July 17 – 18, 2019**

The Euro Diabetes 2019 Conference invites academic scientists, endocrinologists, surgeons, primary care physicians, pharmaceutical industrial delegates, and students from across the globe to network and learn about the latest advancements, growth, and research in diabetes and endocrinology. The theme of the conference is "Recent Advancements and Developments for Changing Life of Diabetes World."

[www.diabetesexpo.com](http://www.diabetesexpo.com)

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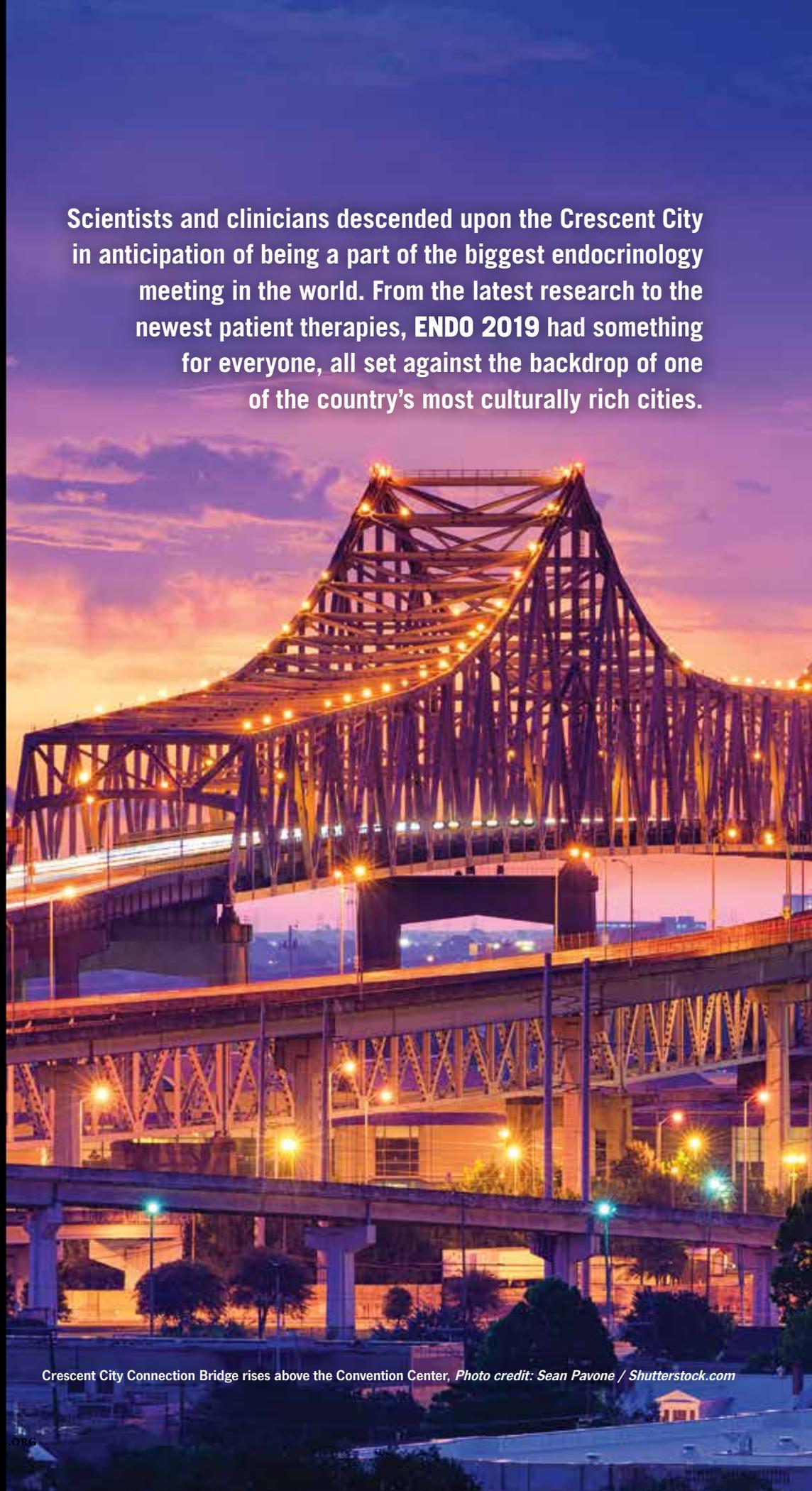
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Scientists and clinicians descended upon the Crescent City in anticipation of being a part of the biggest endocrinology meeting in the world. From the latest research to the newest patient therapies, **ENDO 2019** had something for everyone, all set against the backdrop of one of the country's most culturally rich cities.



Crescent City Connection Bridge rises above the Convention Center, *Photo credit: Sean Pavone / Shutterstock.com*

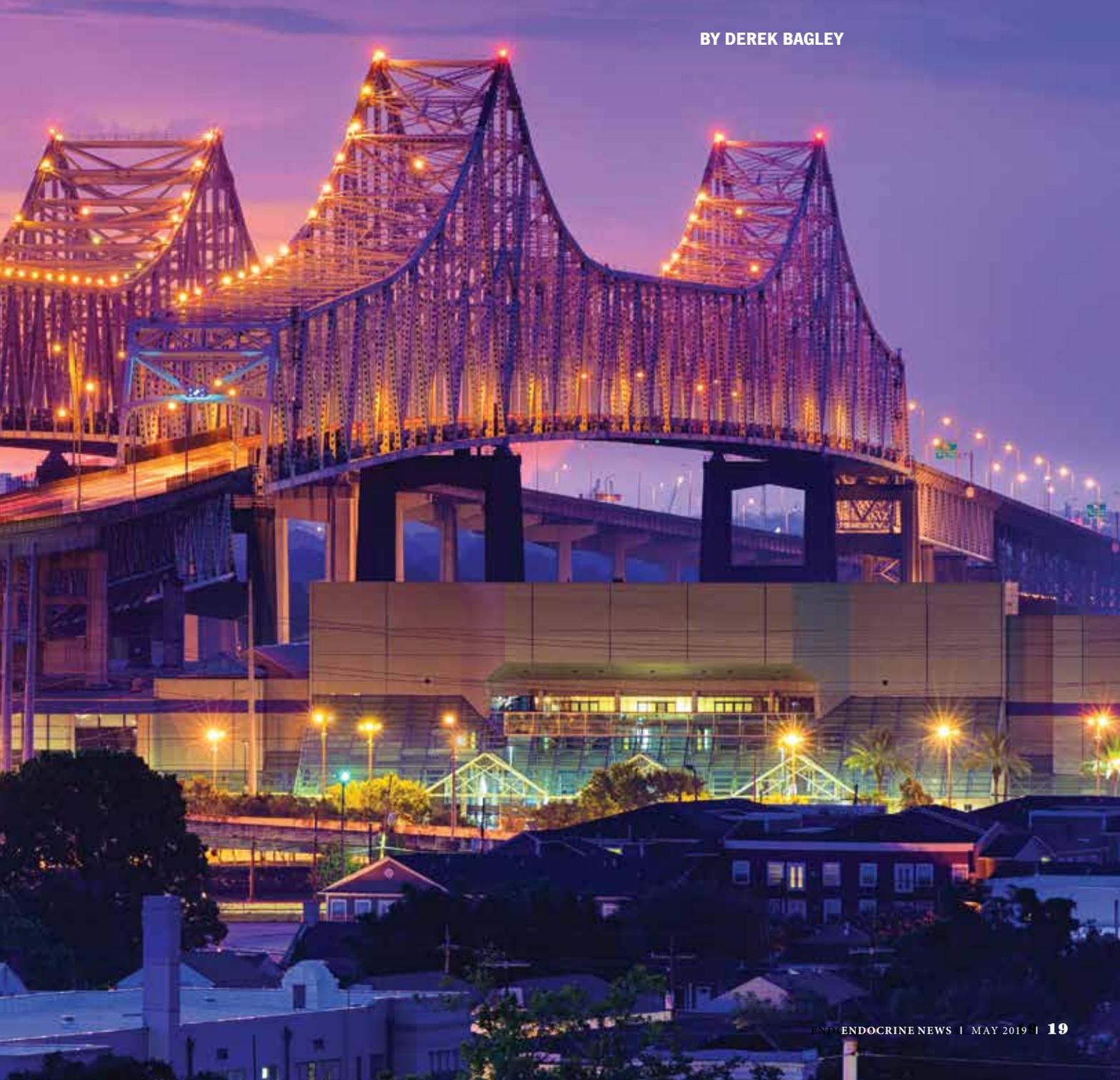
**ENDO**2019

THE ENDOCRINE SOCIETY'S 101ST ANNUAL MEETING & EXPO

# AN ENDO GUMBO

*in* New Orleans!

BY DEREK BAGLEY





Once the **ENDO 2019** sessions ended for the day, many attendees were drawn to New Orleans' world famous French Quarter. Photo credit: fl1photo / Shutterstock.com



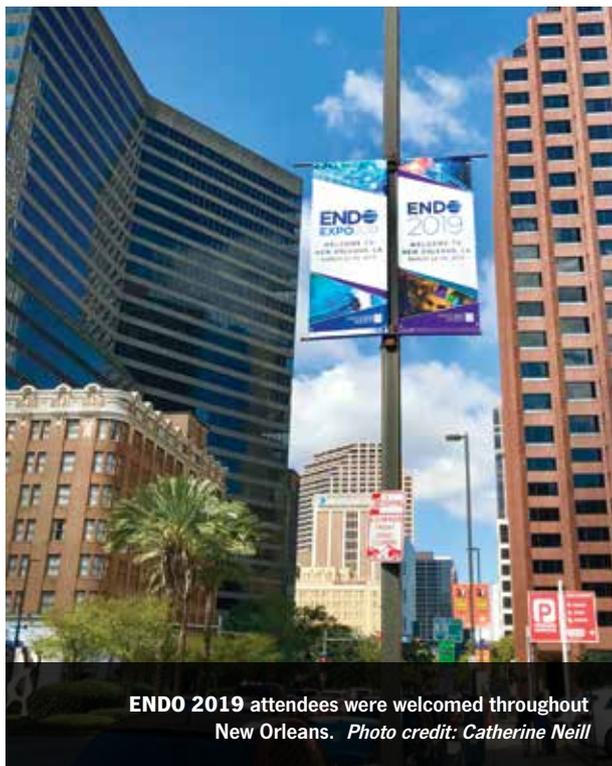
**“Laissez  
les bon  
temps  
rouler!”**

Depending on whom you ask, New Orleans is the birthplace of modern music or the perfection of modern cuisine, a city defined by its diversity, an amalgam of styles equal to more than the sum of its parts, making it the perfect setting for a meeting like **ENDO**. The 101st annual meeting of the Endocrine Society once again displayed what makes this event unique — just as jazz combines the musical stylings and gumbo the culinary practices of several cultures, **ENDO** brings together the best from all corners of endocrinology, where physicians and researchers can share their work and connect with other endocrinologists who may not work in their subspecialties.

And collaboration seemed to be the theme this year. On Monday, March 25, the penultimate day of the meeting, Cori Bargmann, PhD, of The Rockefeller University in New York and the Chan Zuckerberg Science Initiative, gave a plenary talk titled, “Accelerating Science through Technology and Collaboration,” which focused on the importance of supporting collaboration among scientists from disciplines with a goal of curing, preventing, or managing all diseases by the end of the century. That may seem like a tall order, but as Bargmann says, “Insulin didn’t exist 100 years ago, so it’s not an unrealistic goal when you consider how far medicine has come.” (Read more about Bargmann and the work the Chan Zuckerberg Science Initiative is doing in a future issue.)



One of the centerpieces of the ENDO Expo was a Mardi Gras float on display. *Photo credit: Riverview Photography*



ENDO 2019 attendees were welcomed throughout New Orleans. *Photo credit: Catherine Neill*



As usual, the Endocrine Society booth was a hub of activity on the ENDO Expo floor. *Photo credit: Riverview Photography*



Colleagues and friends alike from around the world used ENDO 2019 as the perfect place to reconnect and reminisce between sessions. *Photo credit: Riverview Photography*



The ENDO Store is always a crowd pleaser each year as attendees clamor for everything from ESAP books to a variety of ENDO 2019 T-shirts and even plushies of their favorite endocrine organs! *Photo credit: Riverview Photography*

“ I was so excited to be a part of ENDO this year. I went to many informative sessions and I had a great time exploring New Orleans afterwards. I love Southern food and all the seafood in New Orleans; my favorite restaurant this week was Herbsaint.”

— JUANITA HODAX, MD, PEDIATRIC ENDOCRINOLOGIST AT SEATTLE CHILDREN'S HOSPITAL



## Knockout Rounds: Friendly Competition

Collaboration among peers, of course, is always welcome and encouraged. But there's also room at ENDO for a little friendly competition. Take the innovative and ever-popular Knockout Rounds — during which “contestant” endocrinologists have three minutes and one slide to present their work to a standing-room-only audience. And again, these rapid-fire presentations cover a variety of endocrine topics, from gestational diabetes to gene mutations to pituitary dysfunction.

“It was very challenging to summarize everything we have worked on and learned in the past two years into such a short presentation,” says Juanita Hodax, MD, a pediatric endocrinologist at Seattle Children's Hospital, who won first place in the Knockout Rounds for her work on the role of aggrecan in cartilage development. “While working on this research day-to-day, I have focused so much on the details of each experiment, the results, and analyzing the data. It was a nice change to take a step back and think more about the clinical relevance of the project in the big picture.”

Hodax and her team have found that aggrecan has additional functions within cartilage that had previously not been determined. Hodax says she was inspired to look at how aggrecan affects a child's growth and development after one of her mentors diagnosed a patient with an aggrecan mutation a few years ago. “At the time, this was only the fourth family found to have this mutation,” she says. “Compared to other patients we evaluate for short stature, the most remarkable finding in patients with aggrecan mutations is that their bone age x-rays are often advanced compared to their chronological

age. After taking care of this patient and learning more about the function of aggrecan, we wanted to look further into how aggrecan deficiency affects the growth plate in ways that could cause this advanced bone age.”

And while these novel findings could provide some optimism for children and their families with aggrecan mutations, Hodax says there's still work to be done. “Aggrecan is an extracellular matrix molecule, and the extracellular matrix has some role in cell signaling but we still have to determine the exact mechanism of aggrecan's role in this,” she says. “We still have a lot to learn before we have information that can affect the treatment and clinical outcomes of patients with aggrecan mutations.”

Rachel Gonzalez, a graduate student in the Neuroscience Program at the University of Illinois at Urbana-Champaign won second place for presenting her team's work studying the influence of gestational diabetes on tancytes and how those cells affect metabolic health. She explains that prior data indicated that tancytes had the potential to alter the function of the arcuate nucleus in response to dietary changes, partially through their role as an adult neurogenic pool and partially through their physiological function. “We combined knowledge of this prior research with an interest in the poorly understood question of cause and effect between GDM growth environment and obesity outcomes and tried to push further into whether they were related,” Gonzalez says.

Gonzalez and her team examined three potential mechanisms by which gestational diabetes could affect the hypothalamus — tancyte proliferation, insulin signaling, and microglial activation — and found that being born to



“ Part of why I really value ENDO is that I hope to continue to pursue health-based questions for the rest of my career and the Endocrine Society provides such an important venue for cross-communication between clinicians and basic scientists. **Clinicians need basic scientists to inform their practice and basic scientists can gain so much direction from looking to the issues clinicians encounter.** Hearing talks from both groups drove home the potential for my work to make a real difference in the health of others.

— RACHEL GONZALEZ, GRADUATE STUDENT IN THE NEUROSCIENCE PROGRAM AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

a mother with gestational diabetes results in alterations to the cell population in the median eminence, which can lead to disordered feeding and obesity. “Given how broad and multi-factorial the question of maternal context is, we certainly still have room to dig further,” she says. “At this point it is difficult to be prescriptive. However, our current findings, in particular regarding the altered physiological function of the tanycytes and the change in proliferation in the median eminence, would suggest that the issue is in how GDM sets up the organism’s ability to accurately respond to and communicate information about the nutritional state to the brain. Without accurate signaling about the body’s needs, the hypothalamus can’t fully function as necessary and this could lead to the development of obesity.”

Gonzalez credits her mentor, Lori Raetzman, PhD, with the success of her Knockout Rounds presentation, especially in the initial stages of clarifying the scope of the work and the resolution expected. “When communicating science for broader consumption, it’s so important to highlight the salient points while not insinuating that the question isn’t complicated,” Gonzalez says. “The style was a fun challenge. I really like design and thinking about how design serves

communication, but I haven’t had many opportunities to test that skill. I’ve joked with friends that practicing the talk felt like watching videos of people attempting skateboarding tricks; with each attempt to get it right, there are small shifts in performance and you try so hard to remember the exact right moves to pull it off and when you make a mistake, you just start over again until it works. It can feel tedious, but sticking the landing is exciting.”

One of the reasons the Knockout Rounds are such a hit, aside from the diversity of the research presented, is the fact that it’s a wholly interactive session. And while Hodax won first place and Gonzalez second place based on the judges’ votes, Carlos Perez-Kerkvliet an MD, PhD student at the University of Minnesota Medical School, won the “People’s Choice award,” based on the tallies from the audience members. He presented research on the role of glucocorticoid receptors in triple-negative breast cancer (TNBC).

Perez-Kerkvliet explains that while glucocorticoid receptor expression is indicative of good prognosis in luminal breast cancer, it means poor prognosis in TNBC, so he and his team wanted to elucidate the reason behind this dichotomy. “We

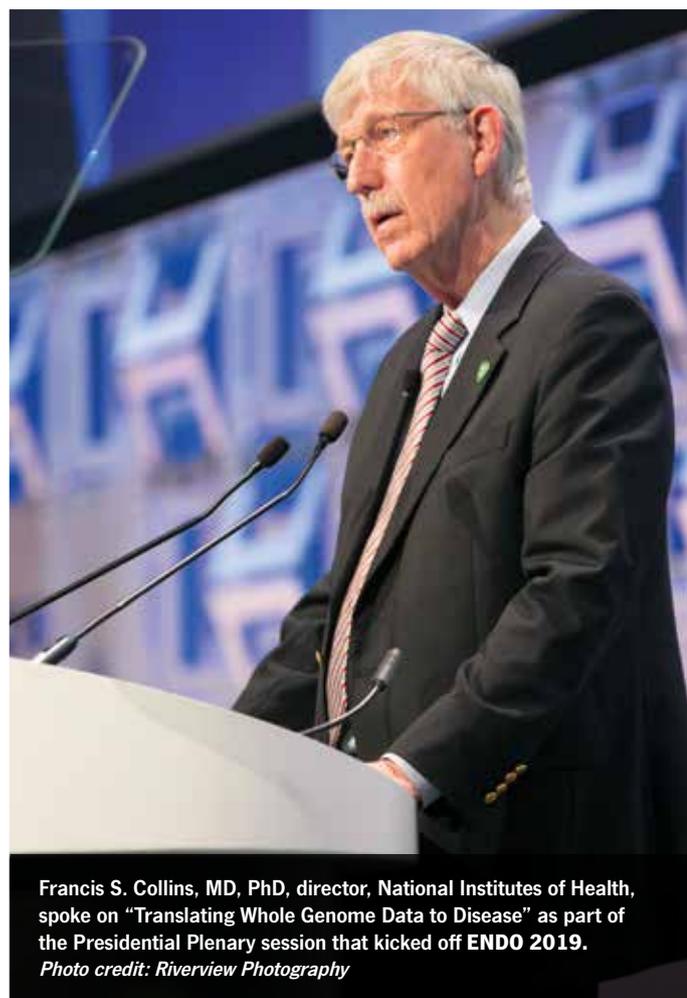


Adorned with beads, these **ENDO 2019** participants are ready to set sail on their own Mardi Gras float. *Photo credit: Riverview Photography*

hypothesize that post-translational modifications (i.e., changes to the receptor that change its structure and function) of the glucocorticoid receptor modify its behavior, thereby promoting advanced cancer phenotypes in TNBC,” he says.

Perez-Kerkvliet and his team identified the glucocorticoid receptor pS134-GR and the scaffolding protein 14-3-3zeta as therapeutic targets in patients with TNBC, a promising finding for suffering from this cancer. “We have identified a gene-signature that could be paired with existing diagnostic tools to better predict prognosis in each patient,” Perez-Kerkvliet says. “Using that information, clinicians will be able to tailor the treatment for TNBC patients. Additionally, we could also target the pS134-GR directly now that we know it mediates migration of cancer cells and consequently metastasis.”

As for the Knockout Rounds themselves, Perez-Kerkvliet says he got a lot of support from his colleagues and principal investigator, who listened to his presentation and provided input. “I really liked the end-result of my presentation,” he says. “However, what I enjoyed the most from the [Knockout Rounds] was listening to the amazing research that is being done by my endocrinology colleagues.”



Francis S. Collins, MD, PhD, director, National Institutes of Health, spoke on “Translating Whole Genome Data to Disease” as part of the Presidential Plenary session that kicked off **ENDO 2019**. *Photo credit: Riverview Photography*



The ceremonial passing of the gavel from Endocrine Society past-president Susan Mandel, MD, to newly installed president E. Dale Abel, MD, PhD.  
*Photo credit: Riverview Photography*



One of the participants at the Tumor Biology Guided Poster Session highlights his research on an interactive screen.

*Photo credit: Riverview Photography*

## Guided Poster Sessions

New to ENDO this year were the Guided Poster Sessions, similar in design to the Knockout Rounds — three minutes and one slide to present research — but there was no competition among the presenters, and the different endocrine topics were spread out across the expo floor. Crowds gathered in front of digital posters on flat-screen monitors at different locations to listen to presentations on obesity, reproductive endocrinology, pediatric endocrinology, steroid hormones, and many more.

“My overall experience of guided poster sessions was excellent, from preparation to presentation,” says Yuanjie Mao, MD, PhD, of the University of Arkansas for Medical Sciences in Little Rock, who presented his team’s work examining the effects of continuous positive airway pressure (CPAP) treatment on weight loss on patients with obesity and obstructive sleep apnea (OSA). “It gave me the opportunities to highlight the key points of my study, to increase exposure to audiences, and to have interactions with experts and people all over the world who are very interested to this field.”

“My favorite session is the Laureate Award recipients’ speeches. They were short biographies telling the frustration, hard work, perseverance, inspiration, and eventual successes.”

—YUANJIE MAO, MD, PHD, THE UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES IN LITTLE ROCK



Mao says there are very complex interactions among obesity, OSA, and their treatments, and at the weight loss clinic where he treats patients, many of them come in with the same question: Should I start CPAP treatment right away or should I wait to lose weight first? “When I went back to search the answer in the literature, there were conflicting results regarding the impact of CPAP to weight loss,” Mao says.

OSA causes weight gain due to decreased physical activity during the daytime and neuroendocrine hormonal changes like leptin resistance and the release of extra ghrelin. CPAP therapy has been shown to reverse these mechanisms. “However, without strict dietary management, a prior large-scale study showed that CPAP treatment for OSA patients can cause mild weight gain in the long term, such as one to two pounds in six months,” Mao says. “There was no evidence of the impact of CPAP treatment on weight loss in patients with strict dietary management. I was then thinking to do a study to investigate the impact of CPAP treatment on weight loss in patients with strict dietary management.”

Mao and his team found that for obese patients with OSA, CPAP treatment helps the weight loss in a 16-week weight-loss program mainly through a low-calorie restriction to 800 Kcal/day. The study suggests that a combination of CPAP and weight loss program should be considered for these patients to facilitate weight loss. “In terms of our study results, now we can discuss with them about starting CPAP treatment right away along with the weight loss program to facilitate weight loss,” Mao says. “My approach will be starting CPAP treatment with weight loss at the same time, and if they successfully lost weight and improved OSA symptoms, then reassess them to see if we could discontinue the CPAP treatment at that time.”

One of the great things about endocrinology is that even if the research falls under the umbrella of obesity, the approaches can be vastly different. For instance, in the same Guided Poster Session with Mao, Amanda Leiter, MD, of the Icahn School of Medicine at Mount Sinai in New York, presented her team’s work looking at the role of obesity in immune-related adverse events (irAEs) in people on immune checkpoint inhibitor (ICI) therapies used for treating cancer. “As a medicine resident and endocrine fellow at Mount Sinai, I have increasingly seen patients with immune complications from immune checkpoint inhibitor therapy,” Leiter says. “As obesity tends to increase inflammation, I thought it would be an interesting question to see if obese patients would be at increased risk of immune-related adverse events from ICI therapy.”

Leiter and her team retrospectively collected clinical data from the Mount Sinai Data Warehouse for 398 cancer patients with baseline BMI data who received ICI therapies between January 2011 and April 2017. They found that patients with higher BMI were more likely to have a preexisting autoimmune diseases and higher BMI was significantly associated with irAEs. The researchers conclude that being overweight or obese was associated with irAEs in patients on ICI therapy.

“As immune-related adverse events are very common and lead to significant patient morbidity, identifying risk factors for developing these adverse events is crucial,” Leiter says. “If we can identify a subset of patients that are more likely to develop side effects, this may inform how we monitor subsets of patients on ICI therapy. I am very interested in the mechanisms linking obesity and cancer, such as how obesity changes the tumor immune microenvironment and the inflammatory signaling pathways in other organs.”



Colleagues discuss research findings during the poster sessions in the ENDO Expo hall. Photo credit: Riverview Photography

But again, these Guided Poster Sessions weren't just about presenting, but listening and digesting the work of peers in the field, and this new ENDO feature seems to have provided a way to do just that effectively and efficiently. "As an audience member, I enjoyed the presentation format of highlighting portions of the poster, rather than going through a slide deck," Leiter says. "The hardest part of preparing the presentation was keeping everything to three minutes. It was a good exercise in figuring out the highlights of the poster and how to present the key points as succinctly as possible."

### All Work and No Play...

For these attendees delivering rapid-fire presentations to endocrine luminaries and early-career fellows alike, ENDO could prove to be a stressful time, but New Orleans always provides the perfect opportunities to step back and relax. ENDO is about the latest work in endocrinology, the most groundbreaking innovations and their possible implications, but there's a reason New Orleans's unofficial motto is *Laissez les bon temps rouler*. <sup>EN</sup>



## APP APPEAL

When asked about what really surprised her about ENDO 2019 as part of the Early-Career Attendee Roundtable article on page 32, Maria Gabriela Suarez, a fellow from Oregon

Health Sciences University in Portland states she was surprised at the effectiveness of the ENDO 2019 app. "I was able to organize my days effectively and the fact that the Meet the Professors slides were available online was a great plus!" she says, adding that "giving the audience the ability to answer questions through the app elevated the discussions and made the sessions more interactive."

BAGLEY IS THE SENIOR EDITOR OF ENDOCRINE NEWS. HE WROTE THE APRIL COVER STORY ABOUT THE LINK OF EDCS IN HOUSEHOLD DUST TO POTENTIAL WEIGHT GAIN IN CHILDREN.



# Teresa Woodruff Charts the History of Reproductive Transplants in Sawin Lecture



**TERESA K. WOODRUFF, PHD**

dean of The Graduate School and chief of Reproductive Biology Research in the Department of Obstetrics and Gynecology at Northwestern University in Chicago  
*Photo credit: Riverview Photography*

One of the highlights of **ENDO** each year is the trip through endocrinology history via the Clark T. Sawin Memorial History of Endocrinology Lecture, which is presented by the recipient of the Delbert A. Fisher Research Scholar Award.

This year's recipient was Teresa K. Woodruff, PhD, dean of The Graduate School and chief of Reproductive Biology Research in the Department of Obstetrics and Gynecology at Northwestern University in Chicago, who took listeners through a history of reproductive rejuvenation.

During her speech entitled "Engineering Reproduction: A Brief History of Reproductive Tissue Transplantation for Endocrine and Fertility Restoration," Woodruff spoke about her interest in developing strategies that would allow endocrinologists to engineer ovarian constructs that could restore fertility and endocrine function for young women and girls who have a cancer diagnosis and have been treated with life-preserving chemotherapy or radiation. "But those same life-preserving treatments may also render them infertile," she says. "For children who are pre-pubertal, this may result in their inability to go through pubertal transitions without the aid of exogenous hormones."

True to her lecture's title, Woodruff took the audience through the history of humanity's understanding of reproduction, including when people thought life came from non-living things like the mud. This obviously began to change once doctors and researchers began to dissect bodies, but there was still a long way to go. "The ovaries were not understood — the ovary itself was detached from the fallopian tube," Woodruff says. "It did not seem like the ovary had anything to do with generation because it was away from the womb. These follicles were not known, the egg was not known, and the development of an embryo through insemination was not known."

Woodruff then detailed the story of three scientists who earned their PhDs in the late 1600s at Leiden University in the Netherlands, which

at the time was one of the most progressive universities in the Western world — they had a botanical garden to grow medicinal herbs and test them with scientific technology and an amphitheater that allowed the human anatomy to be studied by more than the number of people who could surround a single corpse. These scientists were Niels Stensen, a clinical investigator who discovered Steno's duct; Jan Swammerdam, a basic scientist interested in respiration; and Regnier de Graaf, a clinician interested in acid-base relationships, bile, pancreas, and the stomach. "All were interested in our various aspects of our tripartite mission — clinical, clinical research, and pure research," Woodruff says.

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**It did not seem like the ovary had anything to do with generation because it was away from the womb. These follicles were not known, the egg was not known, and the development of an embryo through insemination was not known.**

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It was de Graaf who first described the development of ovarian follicles after observed pregnancy in rabbits. He first called them female testicles, but they are now of course known as Graafian follicles. It would be another 150 years before Baer would discover and describe the mammalian ovum in 1826. In 1895, scientists performed the first human transplant, a heterotypic transplant from an adult woman to a female patient with a delayed onset of sexual maturity. Then in 1899, doctors transplanted an ovary from a 17-year-old into a 29-year-old woman who was experiencing menopausal symptoms. Within a week, the 29-year-old patient

was menstruating and regained mental and physical equilibrium within eight months.

Woodruff then took the audience through the modern era of transplantation and in vitro fertilization but ended her talk with the hope that scientists can begin to develop tissues, since tissues from these cancer patients are biopsied and cryopreserved. "Tissues come from a patient prior to that first sterilizing treatment, which means the cancer cells may still be embedded within them," she says. "Thus, the next wave of development has to be creating new artificial ovaries, or ovarian bioprothetics that can restore endocrine function and fertility."

"I learned a lot," Woodruff concludes, "and I look forward to continue to develop in this particular area." — *Derek Bagley*



## A Rainbow Coalition: LGBTQ+ Outreach Debuts at ENDO 2019

A new initiative from the Endocrine Society's Committee on Diversity & Inclusion reached out to LGBTQ+ members with an inaugural reception at ENDO 2019.

BY MARK A. NEWMAN



**BRUNO FERRAZ-DE-SOUZA, MD, PHD**

Co-chair of the Society's Committee on Diversity and Inclusion (CoDI)

In New Orleans, the strains of jazz mingle with the sumptuous scents of award-winning chefs on virtually every corner. However, when ENDO 2019 was in town, there was a new buzz that gently floated on the southern breezes on the banks of the Mississippi River — the Endocrine Society's first LGBTQ+ reception.

As the article "A Quarter Century Celebrating Diversity" in the March issue of *Endocrine News* demonstrated, striving for inclusivity has been a priority for the Endocrine Society for decades. The outreach to LGBTQ+ members is a more recent initiative to welcome all members, past, present, and future.

"CoDI has a strong track record in promoting underrepresented minorities within the Endocrine Society and for the past two years we had been discussing how we could better engage with our LGBTQ+ members," according to co-chair of the Society's Committee on Diversity and Inclusion (CoDI), Bruno Ferraz-de-Souza, MD, PhD. "The

idea was born to hold the LGBTQ+ and Allies reception at ENDO 2019 not only to celebrate sexual orientation and gender identity diversity within the Society, but also to establish a lasting communication channel with this segment of our membership, hoping to promote and develop personal and institutional relationships that support our LGBTQ+ community."

Ferraz-de-Souza, attending physician and tenured principal investigator, Endocrinology and Metabolism, Hospital das Clinicas at the University of Sao Paulo School of Medicine, Sao Paulo, Brazil, first became involved with CoDI when then-Endocrine Society president Lynnette Nieman, MD, encouraged him to join. "I was thrilled to be invited for committee service, but I confess that at that point, I had no idea how much I would enjoy it," he says.

Prior to joining CoDI, Ferraz-de-Souza's admiration for the Society was mainly from a scientific/medical perspective, "but after joining the committee I could see firsthand how

professionally and transparently the Society was run, how committed it was to promoting diversity and inclusion, and how members' voices indeed mattered," he says. "Moreover, joining CoDI gave me a chance to meet and be inspired by wonderful colleagues that had long been promoting diversity such as Sherri-Ann Burnett-Bowie, Cherié Butts, Carolyn Becker, and Beverly Biller, to name a few."

Ferraz-de-Souza has been attending **ENDO** since he began his PhD studies in 2006 and formally joined the Endocrine Society upon joining the faculty of University of Sao Paulo School of Medicine in 2011. "From the outside, committee service can seem too far-fetched or intimidating, but we at CoDI are determined to make younger or less represented Society members feel like they belong and should, indeed, get involved to help shape the Society's future," he says. "That's one of our missions."

CoDI decided to use **ENDO 2019** as a starting point for an even more inclusive type of outreach by appealing to LGBTQ members. "It might seem that promoting LGBTQ+ matters in 2019 is unnecessary, that this is an outdated and resolved topic," Ferraz-de-Souza explains. "But we have to remember that the Endocrine Society is global and, therefore, members in different stages of their careers or in different parts of the world might feel differently. They could benefit from the Society's support in carrying on with their lives and careers, regardless of sexual orientation or identity constraints."

Despite the relatively small gathering — about 50 or so attendees — Ferraz-de-Souza is encouraged by the turnout. "I thought it was a huge success!" he says. "The feedback was very positive and encouraging. Several attendees expressed their gratitude for the initiative, and I found one comment particularly striking where one member said that at big conferences such as **ENDO**, people can sometimes feel isolated or invisible. Having this reception made them feel like they belonged."

By focusing on LGBTQ+ outreach Ferraz-de-Souza believes that this further emphasizes how the Endocrine Society celebrates diversity and will fight discrimination and promote equal opportunities and respect for LGBTQ+ members. "We are very lucky that the Endocrine Society is at the forefront among medical and scientific societies in

**“ We are very lucky that the Endocrine Society is at the forefront among medical and scientific societies in terms of sexual orientation and gender identity inclusivity.”**

— BRUNO FERRAZ-DE-SOUZA, MD, PHD, CO-CHAIR OF THE SOCIETY'S COMMITTEE ON DIVERSITY AND INCLUSION (CoDI)

terms of sexual orientation and gender identity inclusivity," he says, "but there is always room for improvement, and that's why we at CoDI want to hear from LGBTQ+ members on how they feel we could support them further."

To contact CoDI with questions, ideas, or suggestions, email: [diversity@endocrine.org](mailto:diversity@endocrine.org). 





# First IMPRESSIONS



BY MARK A. NEWMAN

*Endocrine News* chats with a group of early-career members whose trip to New Orleans had quite an impact on them, most of whom were at their very first **ENDO**. Find out what their takeaways were from **ENDO 2019** and why they would recommend it to colleagues.

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**F**or so many attendees in New Orleans, **ENDO 2019** was their fourth **ENDO**. Or their seventh. Or even their thirtieth. It can be easy to forget that once upon a time you attended your very first **ENDO**. Do you remember how excited you were? Or how overwhelmed?

While it's easy for veterans to look back and the lessons learned, the trips taken, and friendships that blossomed at past conferences, each year there are a significant number of young professionals who are coming to see what **ENDO** has to offer for them so early in their endocrine careers. For many endocrinologists, a successful **ENDO** experience can be a deciding factor on the course their career takes simply based on networking opportunities, ideas gained, or information learned.

Not surprisingly, most early-career attendees were a part of

the Early Career Forum that took place on Friday March 22, and that's where we caught up with them to get their thoughts about **ENDO**, what influenced them the most, and what they learned while they were in New Orleans.

Answering our questions are Ghada Elshimy, MD, PGY4 fellow, Endocrinology Department, University of Arizona College of Medicine, Tucson; Kristopher A. Lofgren, PhD, research scientist, Gunderson Medical Foundation, Oncology Research Laboratory, La Crosse, Wisc.; Wayne Hann Kang, MD, University Tunku Abdul Rahman, Malaysia; Komal Motwani, MD, Eastern Virginia Medical School, Norfolk; medical student Leticia Assad, University of Brasilia – UnB, Brazil; and Maria Gabriela Suarez, fellow, Oregon Health Sciences University, Portland.



**Ghada Elshimy, MD,**  
PGY4 fellow, Endocrinology  
Department, University of Arizona  
College of Medicine, Tucson

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I will definitely encourage all of my colleagues to go to the conference because ENDO is a one-of-a-kind experience. I enjoyed every second of the meeting. If you want to improve your medical knowledge, network, and learn about endocrinology, you should never miss ENDO!

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**Wayne Hann Kang, MD,**  
University Tunku Abdul Rahman,  
Malaysia

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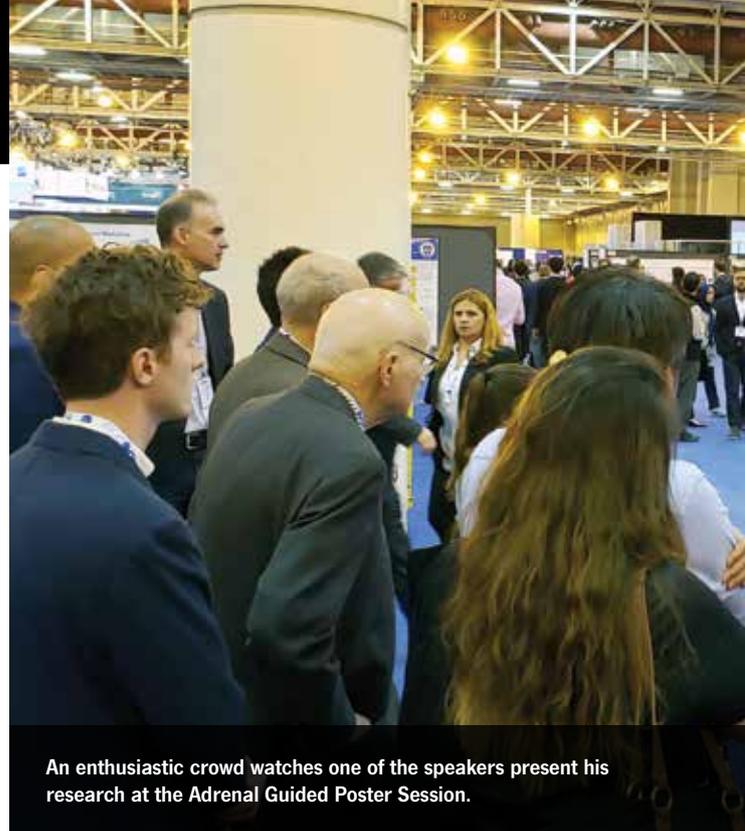
The Early Career Forum empowers young trainees and nurtures budding researchers, while the actual ENDO with its dynamic programs left me with an overwhelming sense of euphoria. There are just so many things to learn! I would say my 34-hour flight from Malaysia to New Orleans was well worth it!

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### Endocrine News: What made you decide to come to ENDO 2019?

**Ghada Elshimy:** ENDO 2019 is one of the most important events for endocrinology fellows. It is a great learning experience and the best place for networking. I actually attended prior ENDO when I was an internal medicine resident preparing for my fellowship and the experience was delightful, so I wanted to attend the conference after being a fellow as I enjoyed my prior ENDO meetings.

**Wayne Hann Kang:** My supervisors who had attended previous ENDO meetings gave very positive feedback and strongly encouraged me to attend. Furthermore, I have logged onto the free session recordings of the previous ENDO meetings and



An enthusiastic crowd watches one of the speakers present his research at the Adrenal Guided Poster Session.

found them to be very beneficial to my practice and training. Hence, after having been awarded the early career travel grant, I could not find any reason to decline this opportunity.

**Kristofer Lofgren:** I presented a poster at the Great Lakes Nuclear Receptor conference at the end of 2018 and was the gracious recipient of a travel award to use toward ENDO 2019 attendance. It was also the first time I have had research to present that would be a good fit at an ENDO meeting.

**Komal Motwani:** The quality of the educational sessions and the scale of ENDO as heard by colleagues and attendings made it a must-visit.

**Leticia Assad:** I first considered attending ENDO 2019 when my mentor encouraged me to submit my work as a poster. He described ENDO as the largest and most important meeting in the endocrinology field; anyone who considered pursuing endocrinology as a specialty had to get to know ENDO. I then decided to come to ENDO 2019 when I saw all the topics related to professional career development as it was an opportunity to improve my skills beyond endocrinology.

**Maria Gabriela Suarez:** I am currently a second-year fellow and I wanted to come to ENDO 2019 because it is the largest endocrine meeting, which means that endocrinologist from all around the world meet under one academic roof. Because of this I feel that I'm able to get the most updated information about clinical trials, diagnostic methods and advances in patient care.



Photo credit: Mark A. Newman

## EN: What really surprised you about the ENDO experience?

**Ghada Elshimy:** ENDO has always been one of my favorite meetings of the year. This year, ENDO has been exceptional. Being a fellow and meeting all of these experts has been an honor. I was really surprised that the lectures were so crowded; people actually showed up 15 minutes early just to have a seat and attend these amazing lectures. Other people will stand up or sit on the ground just to listen to some of the sessions. ENDO was very well organized and the staff was very nice. I was also surprised to know that there are a lot of organizations that we can be part of and that ENDO offers a lot of help for fellows.

**Wayne Hann Kang:** I would describe the ENDO meeting as empowering, nurturing, dynamic, and overwhelming! The early career forum empowers young trainees and nurtures budding researchers, while the actual ENDO with its dynamic programs left me with an overwhelming sense of euphoria. There are just so many things to learn! I would say my 34-hour flight from Malaysia to New Orleans was well worth it!

**Kristofer Lofgren:** I was pleasantly surprised with the attention and opportunities given to trainees (at all levels) during the meeting. The collegiality of the attendees that I interacted with was great too; I immediately felt like I had been a frequent or returning attendee.

**Komal Motwani:** The variety of international faculty and



**Kristopher A. Lofgren, PhD,**  
research scientist, Gunderson  
Medical Foundation, Oncology  
Research Laboratory, La Crosse,  
Wisc.

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Even though there is a considerable amount of clinically focused material, basic scientists should use this as an opportunity to learn from clinicians. If you are concerned about your research not ‘fitting in,’ use ENDO as an opportunity to get a fresh set of eyes and feedback on your work, as well as broadening your own thought process.

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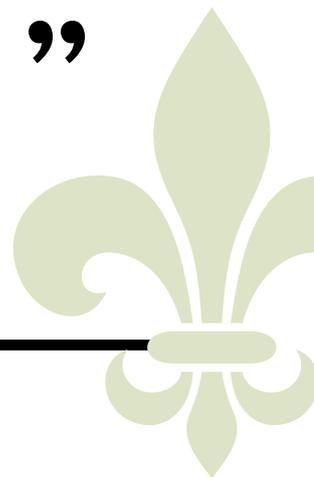


**Komal Motwani, MD,**  
Eastern Virginia Medical  
School, Norfolk

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The clarity of the presenters wowed me. Whether it was old topics such as endocrine emergencies or rare topics such as endocrine tumors in pregnancies, the message was crisp.

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participants came as a pleasant surprise to me.

**Leticia Assad:** I was surprised by the friendly atmosphere. Every little detail of the organization was thought through so the experience for “first timers” could be wonderful.

**Maria Gabriela Suarez:** The ethnic, religious and generational diversity seen at the conference is a highlight that is often overlooked. One of the best parts of the conference for me is to interact with endocrinologists from around the world. I love walking down the halls and seeing people from all races, ages, and religions, from medical students to directors of large research centers. I believe that the true value of this conference is not only the diversity of the presentations, but also in the diversity of the background of the attendees and speakers.



**Letícia Assad,**  
medical student, University of  
Brasília – UnB, Brazil

“

The session regarding the genetics of puberty was breathtaking. All the new discoveries about the mechanism of puberty regulation are really exciting. And the professors were spectacular.

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**Maria Gabriela Suarez,**  
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I love walking down the halls and seeing people from all races, ages, and religions, from medical students to directors of large research centers. I believe that the true value of this conference is not only the diversity of the presentations, but also in the diversity of the background of the attendees and speakers.

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**Kristofer Lofgren:** It wasn't so much a particular session, but how sessions were organized. The planning that went into the basic science pathways was incredibly helpful for me, because it is usually very difficult to attend symposia, poster sessions, etc. on a focused topic during a large meeting due to scheduling conflicts. Keeping the 'meeting within a meeting' in mind helped me get as much as I could out of a large meeting like ENDO.

**Komal Motwani:** The clarity of the presenters wowed me. Whether it was old topics such as endocrine emergencies or rare topics such as endocrine tumors in pregnancies, the message was crisp.

**Letícia Assad:** The session regarding the genetics of puberty was breathtaking. All the new discoveries about the mechanism of puberty regulation are really exciting. And the professors were spectacular.

**Maria Gabriela Suarez:** I would say that all the Meet-the-Professor talks are always a highlight of ENDO meetings. One of the ones that I liked the most was obesity therapeutics. It was fascinating to bring up the discussion on the weight set point and the different medications available to treat these patients. I liked that we are moving away from overlooking obesity in our everyday clinic and approaching it as the cause of many other comorbidities. We are changing our mentality of shaming our patients with obesity, to understanding the true pathophysiology behind their weight gain.

### EN: What session or sessions really “wowed” you at ENDO 2019?

**Ghada Elshimy:** This year, ENDO has been amazing. I attended multiple lectures including Meet-the-Professor and I couldn't believe the amount of information I gathered to deliver better care for my patients. Each lecture was better than the prior one. I loved Dr. William Young's sessions about Clinical Pearls Adrenal Disease Case Reports and Email Consults. I also have to mention Dr. Lynnette K. Neiman's lecture about Approach to Pituitary and Ectopic ACTH-Secreting Tumors. These three lectures were my favorites.

**Wayne Hann Kang:** The clinical pearls sessions held at the science hub were incredible. I love the way some of the interesting cases from the posters were dissected and discussed by the experts, making the learning experience brisk and robust.

### EN: Did anything you saw or heard at ENDO 2019 have an impact on your future career aspirations?

**Ghada Elshimy:** This year, I was lucky to receive an Early Career Forum travel award. It was a one-day meeting on Friday March 22 where I had the chance to talk to multiple physicians and learn about their experiences and how they reached their goals. That helped me realize that there are a lot of opportunities available and lot of people are ready to offer help to fellows and others to get the right job/career. This has opened my eyes to the future and that dreams can be achieved.

**Wayne Hann Kang:** Gary Hammer's session in the Early Career Forum was truly inspirational. I'm amazed at how much he has accomplished, and I believe his career journey has really struck a chord to aspiring research-clinicians like me.

**Kristofer Lofgren:** Absolutely. I participated in the Early Career Forum to get some insights on career development as not only a scientist, but as a mentor, project coordinator, and other aspects of science that are usually developed on the job. The sessions helped me reaffirm my current career goals, but also to identify some viable alternatives in case things do change in the future.

**Komal Motwani:** The early career session did orient me to be more aware of my career as well as teaching options.

**Leticia Assad:** Yes, I came to Brazil really motivated to continue working with bone metabolism, my research topic. Getting to know specialists that are international references in their fields was also really inspiring. Nevertheless, the section at the Early Career Forum with Gary Hammer was the most touching one. It will keep me motivated throughout the year.

**Maria Gabriela Suarez:** I was born in Ecuador but did my studies in the U.S., so **ENDO 2019** allowed me to meet and network with other endocrinologists in South America as well as see the high-level research that was done in several countries all around the world. During this conference I was able to meet amazing endocrinologists in Colombia, Brazil, Chile, and Ecuador who could become great mentors for me in the future. Because of this, I have been able to establish a network of contacts for future collaborations.

### **EN: Did you learn anything at ENDO 2019 that you can use daily?**

**Ghada Elshimy:** **ENDO 2019** taught me valuable things regarding adrenal, pituitary, diabetes, etc. One of the lectures was talking about depression and diabetes which is considered an everyday challenge for a lot of patients and our role as physicians is actually to realize what our patients are going through and try to help them. I attended this amazing lecture of pheochromocytoma and paraganglioma presented by Dr. Daniel Pryma about different imaging modalities and when to use each one of them. I will apply that in my patients' care.

**Wayne Hann Kang:** A lot. I totally enjoyed the Meet-the-Professor sessions. The topics were very practical and would benefit my daily practice. I wish I could have attended all the sessions!

**Kristofer Lofgren:** As a basic scientist, 'daily use' can be a little hard to define...but I did learn a considerable number of things that directly applied to my research. There were several new ideas generated for approaching problems we've been contending with in the lab, new leads for the mechanistic basis for phenotypic changes in our cell and mouse models of breast cancer, and valuable feedback at my poster presentation.

**Komal Motwani:** The importance of comfortable shoes!

**Leticia Assad:** Yes, at **ENDO** it was possible to get up to date with thyroid cancer protocols by the professionals who developed it. It was a remarkable learning experience of a prevalent pathology, which I use on a daily basis.

### **EN: What would you say to one of your colleagues who was on the fence about attending ENDO?**

**Ghada Elshimy:** I encourage all of my colleagues to go to the conference because **ENDO** is a one-of-a-kind experience. I enjoyed every second of the meeting. If you want to improve your medical knowledge, network, and learn about endocrinology, you should never miss **ENDO**!

**Wayne Hann Kang:** Don't hesitate! You definitely have to attend at least once in your lifetime!

**Kristofer Lofgren:** Go for it. Even though there is a considerable amount of clinically focused material, basic scientists should use this as an opportunity to learn from clinicians. If you are concerned about your research not 'fitting in', use **ENDO** as an opportunity to get a fresh set of eyes and feedback on your work, as well as broadening your own thought process.

**Komal Motwani:** Go for it! You won't regret it!

**Leticia Assad:** Go for it! It will be, for sure, your best professional experience!

**Maria Gabriela Suarez:** **ENDO** goes far beyond an academic meeting. It is not only a space where endocrinologists from all around the world are able to present the latest advances in endocrinology, it is also a platform that gives you the opportunity to network with endocrinologists from different countries and backgrounds that you might never have the opportunity to meet. 

# Latin American Leadership Academy Debuts in New Orleans



The 2019 class of the first Endocrine Society Latin American Leadership Academy.

**O**n March 22, 2019 through an unprecedented partnership with six Sanofi offices across Latin America (Argentina, Chile, Colombia, Pacific and Caribbean, Peru and Uruguay) the Endocrine Society hosted its first Latin American (LATAM) Leadership Academy. Sixty-two clinicians from over 15 countries across South America, Central America, and the Caribbean took part in a one-day leadership training program the day before **ENDO 2019**.

During the program, participants were able to network and learn directly from faculty composed of top endocrine leaders from Argentina, Brazil, Ecuador, Peru, the UK, and the U.S. Specifically, participants learned about their own leadership style, effective communication, and how to balance clinical and research priorities. “Our first Latin American Leadership Academy was a major success, and I’m excited to see what this group of rising stars in the field will do for the future of endocrinology,” says Endocrine Society president-elect Gary D. Hammer, MD, PhD, University of Michigan, Ann

Arbor, who chaired the faculty that developed the training program. “We hope to make this the first of many LATAM Leadership Academy events and to continue furthering our development of global leaders.”

After the one-day leadership training program, participants — many for the first time — attended **ENDO 2019** and during the final day of the conference, they had the opportunity to visit the University Medical Center New Orleans for a guided tour and brief presentation from local Endocrine Society members, which provided them with an opportunity to observe how endocrine research and practice is conducted by their American colleagues.

The launch of this regionally focused program marks not only an unprecedented partnership between the Society and Sanofi offices across the Latin American region, but also will serve as a model for future programs around the globe. **EN**



John Bilezikian, MD, (left) leads a group discussion on how to communicate with patients.

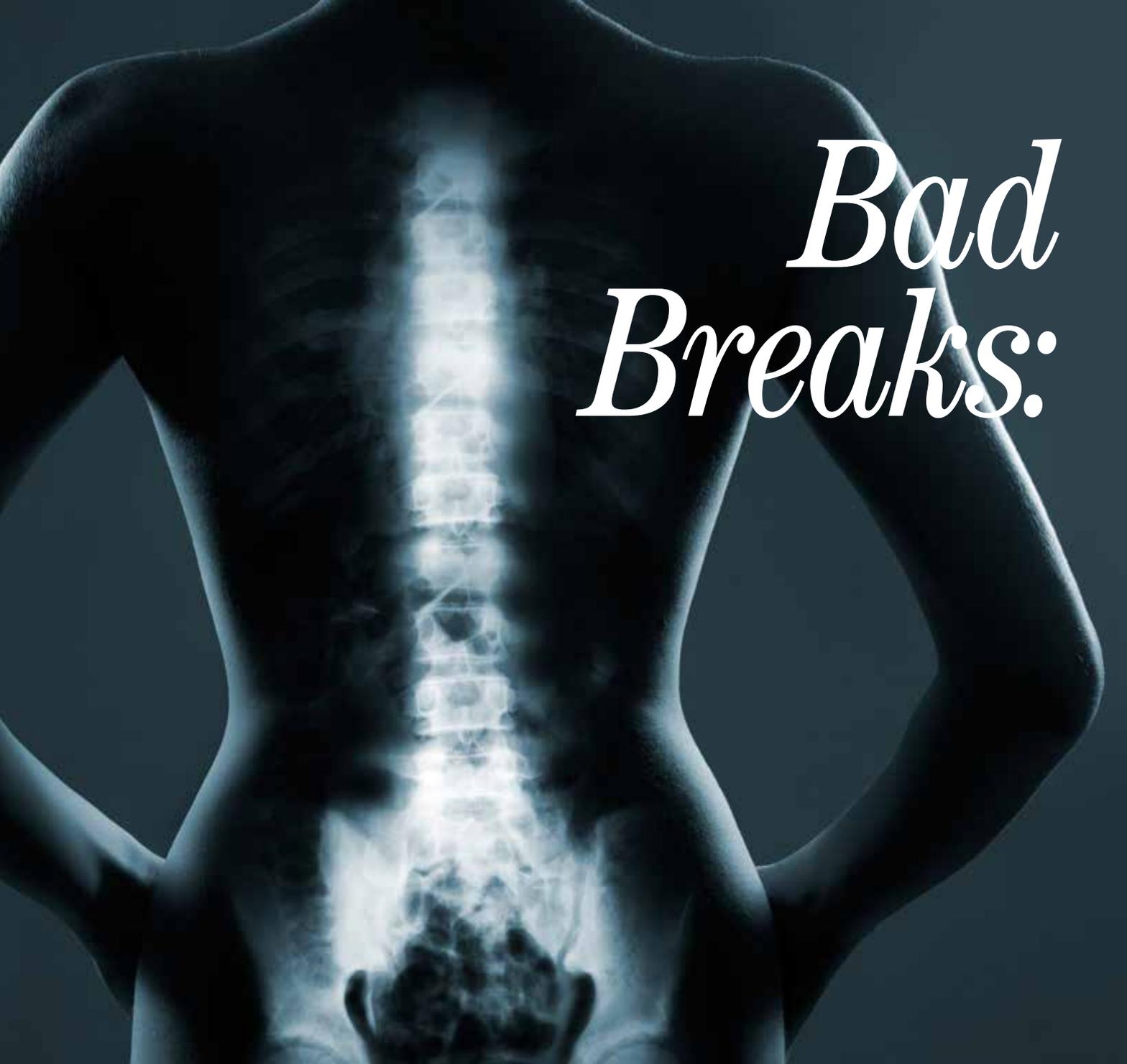


“ I’m excited to see what this group of rising stars in the field will do for the future of endocrinology.”

— GARY D. HAMMER, MD, PHD,  
UNIVERSITY OF MICHIGAN, ANN ARBOR,  
ENDOCRINE SOCIETY PRESIDENT-ELECT



The Power of Partnership: For the first time ever, Sanofi offices across Latin America came together and partnered with the Endocrine Society to support the launch of the LATAM Leadership Academy. From left to right: Rony Calderon (Sanofi Pacific and Caribbean), Jose Colina (Sanofi Chile), Andrea Espinosa (Sanofi Colombia), Maria Elena Vernal (Sanofi Peru), and Victor Kalpokas (Sanofi Uruguay).



# *Bad Breaks:*

Drug therapies for osteoporosis can reduce fractures in postmenopausal women — so why the decline in their use? A new Endocrine Society clinical practice guideline provides recommendations for pharmacological treatment of osteoporosis in postmenopausal patients.

BY ERIC SEABORG

# NOT JUST A MATTER OF CHANCE

**M**any postmenopausal women who would benefit from pharmacologic drug treatment are not receiving it because both patients and clinicians are apparently confused by frightening — and misinterpreted — reports on their side effects. The evidence indicates that the fear of rare side effects such as atypical femoral fractures and osteonecrosis of the jaw are overblown, but the fears lead many women to decline treatment that could benefit them, according to a new Endocrine Society clinical practice guideline on pharmacologic management of osteoporosis in postmenopausal women.

“The current treatments are effective, and the risk-benefit often falls towards a significant benefit rather than harm,” says Clifford Rosen, MD, director of the Center for Clinical and Translational Research at the Maine Medical Center Research Institute in Scarborough, who chaired the guideline-writing committee.

“One in two postmenopausal women will have an osteoporotic fracture in her lifetime,” the guideline notes. “Those who have had a fracture are at high risk of subsequent fractures.”





The new guideline suggests that high-risk individuals should have their bone mineral density monitored every one to three years.

“The guideline recommends bisphosphonates — which include alendronate, risedronate, zoledronic acid, and ibandronate — as initial treatment. **Women who receive them should have their fracture risk reassessed after three to five years.**”

And yet the use of the common drugs — bisphosphonates — has actually declined in recent years, and that appears to be interrupting a decline in the incidence of hip fractures among postmenopausal women in the U.S. To address patients’ concerns, the guideline committee undertook a meta-analysis of the literature that found that a variety of pharmacologic agents reduce fractures in postmenopausal women (see sidebar on page 52).

That led the committee to its key point that “we recommend treating postmenopausal women at high risk of fractures, especially those who have experienced a recent fracture, with pharmacological therapies, as the benefits outweigh the risks.”

Other key points include:

- ▶ Bisphosphonates should be the first therapeutic choice for postmenopausal women at high risk of fracture, with denosumab as an alternative initial treatment.
- ▶ Women at very high risk of fractures should receive anabolic drug therapy.
- ▶ High-risk individuals with low bone mineral density (BMD) should have their BMD monitored every one to three years by dual-energy X-ray absorptiometry at the spine and hip to assess the response to treatment.
- ▶ All women undergoing treatment with osteoporosis therapies should increase their calcium and vitamin D intake in their diet or via supplements.

### Assessing Risk

The guideline recommends that clinicians should use country-specific assessment tools to assess fracture risk and guide decision making. For example, in the U.S., it says: “Pharmacological therapy is recommended for postmenopausal women with hip or vertebral fractures; those with T-scores of 22.5 or less in the femoral neck, total hip, or lumbar spine; and those with T-scores of 21 to 22.5 and a 10-year probability of  $\geq 20\%$  for major osteoporotic fractures or  $\geq 3\%$  for hip fractures based on the U.S.-adapted FRAX (Fracture Risk Assessment Tool) tool.”

It notes that recent fractures — those happening within the past two years — are a good predictor of risk and may indicate the need for immediate treatment.

### First-Line Therapies

The guideline recommends bisphosphonates — which include alendronate, risedronate, zoledronic acid, and ibandronate — as initial treatment. Women who receive them should have their fracture

risk reassessed after three to five years. Those who remain at high risk of fractures should continue therapy, whereas those whose fracture risk is low to moderate should be considered for a bisphosphonate “drug holiday.”

Denosumab is recommended as an alternative initial therapy. In contrast to bisphosphonates, denosumab’s effects on bone remodeling reverse after six months if the drug is not continued, so a drug holiday or treatment interruption is not recommended. The guideline suggests that postmenopausal women taking denosumab should have their fracture risk reassessed after five to 10 years, and women who remain at high risk of fractures should either continue denosumab or be treated with other osteoporosis therapies.

### Anabolic Therapy for Very High Risk

Patients who have had severe or multiple vertebral fractures should be considered very high risk, so the guideline recommends they be given an anabolic therapy — either teriparatide (a parathyroid hormone protein analog) or abaloparatide (a parathyroid hormone-related protein analog). These drugs should be given for up to two years, and then the patient should transition to an antiresorptive therapy, such as a bisphosphonate, hormone therapy, or a selective estrogen receptor modulator.

### Beyond Drugs

The guideline also notes that to reach the goal of reducing fractures “nutritional and lifestyle interventions and fall prevention should accompany all pharmacologic regimens to reduce fracture risk.” Patients should be educated on practices for good bone health maintenance, including “adequate calcium and vitamin D



## AT A GLANCE

- ▶ Postmenopausal women at high risk of fractures should receive pharmacological therapy because the benefits outweigh the risk.
- ▶ Bisphosphonates remain the recommended initial treatment, but many options are available depending on patient preferences and treatment goals.
- ▶ Patients who have heard frightening reports of osteoporosis drug side effects may require reassurance about their safety and who is most at risk.





## VARYING EFFECTS

A meta-analysis of the literature done in conjunction with the guideline found that osteoporosis drugs significantly reduced fractures, but they varied in their effects on specific body parts.

- ▶ Significant reduction in vertebral fractures: alendronate, risedronate, ibandronate, zoledronic acid, denosumab, teriparatide, abaloparatide, raloxifene, bazedoxifene, HT [hormone therapy], tibolone, calcitonin, PTH [parathyroid hormone], romosozumab, strontium ranelate, and lasofoxifene.
- ▶ Significant reduction in hip fractures: alendronate, risedronate, zoledronic acid, denosumab, menopausal HT (estrogen with or without progestogen), and a calcium with vitamin D combination.
- ▶ Significant reduction in nonvertebral fractures: alendronate, risedronate, zoledronic acid, denosumab, teriparatide, abaloparatide, HT, tibolone, calcium or vitamin D, romosozumab, and lasofoxifene.



intake, resistance and balance exercises, smoking cessation, limited alcohol use, decreased use of drugs, and optimization of comorbid conditions that can harm bone for all postmenopausal women.”

### Talking to Patients

When concern about side effects makes a patient hesitant to take the drug he is recommending, Rosen tells her that researchers have studied the incidence of problems such as atypical femoral fractures. “It is rare, but it does happen,” Rosen says. “We can identify those people at highest risk. These are people who have been on the bisphosphonates for more than three years generally. They are usually younger individuals who don’t have very low bone density.” So Rosen can tell many patients that they are among those at the highest risk of osteoporotic fractures, but they are at lowest risk for the atypical femoral fractures.

But Rosen notes that the committee had to work hard to reach consensus as the experts applied the best available science to the art of medicine. “These are one-on-one decisions that are made by patient and physician,” Rosen says, which perhaps is itself evidence of the need for an evidence-based guideline. <sup>EN</sup>

“ We recommend treating postmenopausal women at high risk of fractures, **especially those who have experienced a recent fracture, with pharmacological therapies, as the benefits outweigh the risks.**”

“Pharmacological Management of Osteoporosis in Postmenopausal Women: An Endocrine Society Clinical Practice Guideline” was cosponsored by the European Society of Endocrinology and published in the February print issue of *The Journal of Clinical Endocrinology & Metabolism*. It can be found online at: [www.endocrine.org/2019Osteoporosis](http://www.endocrine.org/2019Osteoporosis).

– SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE CONTROVERSIES SURROUNDING CUSTOM-COMPOUNDED BIODENTICAL HORMONES IN THE APRIL ISSUE.



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# Both Sides Now: Maximizing Mentor-Mentee Relationships



**Christopher McCartney, MD, from the University of Virginia, discusses the benefits of mentoring and being mentored and why it's always helpful regardless of where you are in your career.**

**BY GLENDA FAUNTLEROY SHAW**

**W**hen Christopher McCartney, MD, entered medicine, he had no idea what he was getting himself into. He says finding a mentor can help other young scientists navigate similar times of bewilderment.

“It is never too early to find a mentor, even if you don’t know for sure what you want to do,” he says. “Having a good mentor can help negotiate career decisions, and that’s really valuable. No one is born knowing this stuff.”

McCartney is an associate professor in the Division of Endocrinology and Metabolism at the University of Virginia in Charlottesville as well as the program director for the division’s endocrinology fellowship.

“I’m actually still a mentee, and I’m a mentor,” he says. “I’m about midcareer now, and there are still things I have to navigate that are new to me, and it’s helpful for me to get perspectives that maybe I haven’t thought about. I think my most important mentor has probably been the research mentor I’ve had for almost 20 years now, but I have several really important mentors.”

There is little debate in the academic medical community on whether mentoring has benefits. A 2017 literature review analysis in *Medical Teacher* concluded that mentoring creates better learning experiences, improves personal growth, career progression, and clinical competency. Another 2018 study in *PLoS One* assessed the long-term impact of a faculty mentoring program at Massachusetts General Hospital, and over the seven-year study, junior faculty enrolled in the program were more likely to hold senior faculty positions compared with junior faculty without mentorship.

McCartney stresses, however, that the benefits of the relationship are a two-way street. “My sense is that people usually become mentors because they are interested in devoting their energy into helping people establish their careers and doing well,” he says. “It’s remarkable how much you can learn from your younger and less-experienced colleagues, so I think it goes both ways.”

# MENTOR RELATIONSHIP GOALS

“It is never too early to find a mentor, even if you don't know for sure what you want to do. Having a good mentor can help negotiate career decisions, and that's really valuable. No one is born knowing this stuff.”

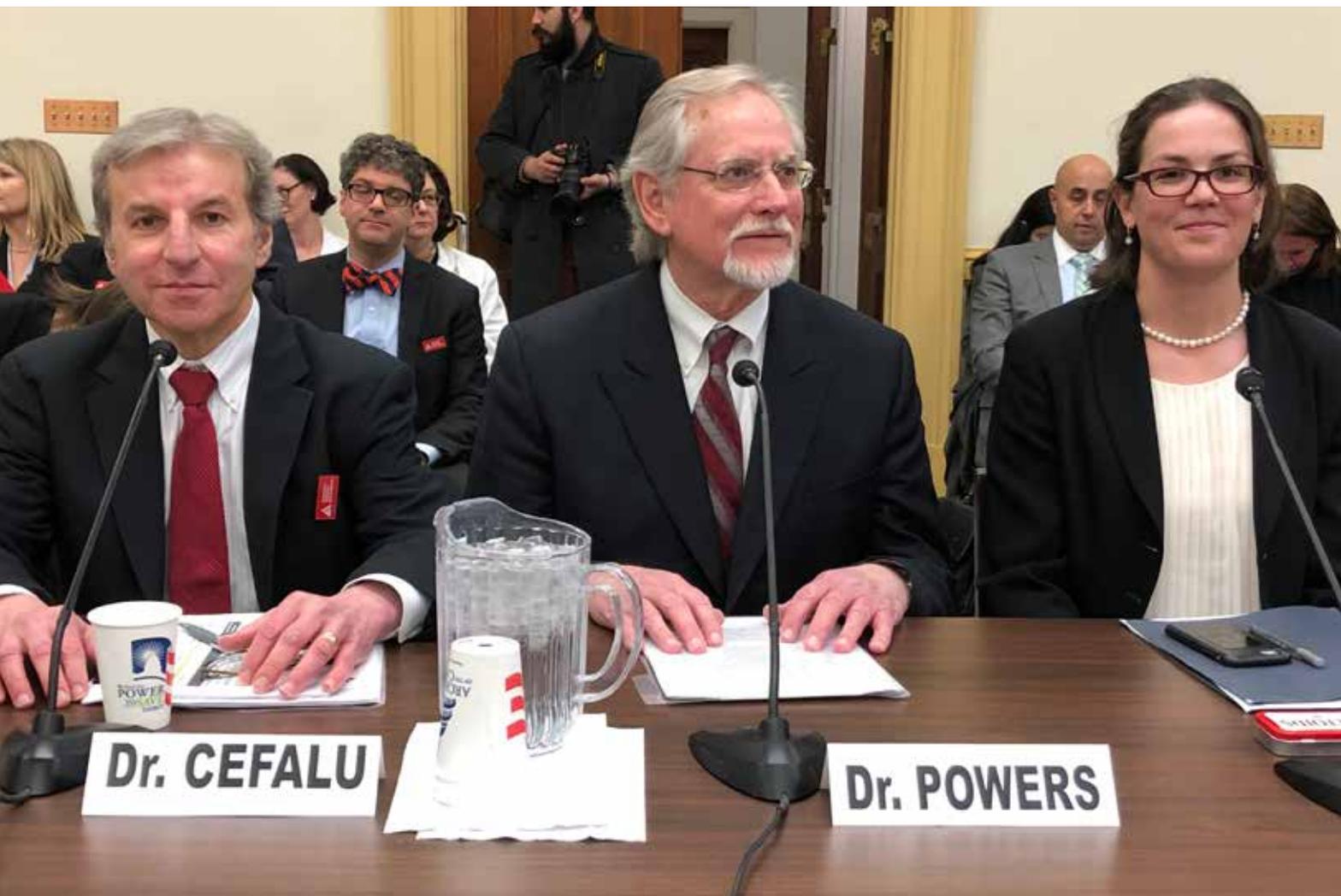
McCartney adds that these types of relationships really do change over time. “When you're young and just getting started, there is sort of an imbalance. The mentor is typically experienced and accomplished, in contrast to the mentee. But over time, the hope is that the mentee does well and establishes a more equal footing. Although the nature of the relationship changes, it's still important having those people to go to, to bounce ideas off of, and to get advice from. These folks are still my advocates, and that's been really helpful, I think.”

So, how does the relationship get started? The *Medical Teacher* study found mentoring relationships usually are formed by the mentor being assigned to mentees by the institution's mentoring program administrators. Matching mentees and mentors largely relies on questionnaires and profile matching, including the mentor's professional orientation, work-life priorities, and recreational interests. Most mentees, however, preferred to pick their own mentors, and mentee-initiated relationships were found to result in deeper relationships and better mentoring outcomes, according to the study.

“This is going to be different for different people, but the satisfaction I get out of my career tends to be more related to the relationships I have developed over time,” McCartney adds. <sup>EN</sup>

— SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO ENDOCRINE NEWS.

- ▶ **Looking for a mentor or mentee?** Go online: The Endocrine Society's Mentor Exchange matches both mentors and mentees looking to start a mentoring relationship. Find it under the “Training and Education” tab at [www.endocrine.org](http://www.endocrine.org).
- ▶ **Set goals:** Goal setting and clarifying expectations at the beginning of a mentoring relationship are critical to building an effective mentoring process. Some mentoring programs have used contractual agreements between mentors and mentees to formalize the objectives and increase the transparency of the process, according to the *Medical Teacher* study.
- ▶ **Establish a meeting schedule upfront:** Mentees should be clear on how often they would like to meet. Have appointments on a schedule, or have permission to contact your mentor at certain intervals, whether it's every two weeks or every month, advises Christopher McCartney, MD. “Some mentees don't want to be a bother, so establishing that expectation upfront allows them to help direct the meeting schedule, and that's really helpful for the mentor.”
- ▶ **Aim for the three C's of mentors:** The essential characteristics of an effective mentor are Competence (professional knowledge, skill, and experience); Confidence (sharing network contacts and resources beneficial to your mentee); and Commitment (investing time, energy, and effort to your protégé), according to an article in *Current Problems in Diagnostic Radiology*.
- ▶ **Get trained on how to improve the relationship:** The National Research Mentoring Network ([www.nrmnet.net](http://www.nrmnet.net)) offers evidence-based best practices to improve mentoring relationships at institutions across the country. Includes training for mentors of research trainees at different career stages designed to help mentors develop skills for engaging in productive, culturally responsive mentoring relationships.



Endocrine Society member, Alvin C. Powers, MD (center) testifies before the House Energy and Commerce Oversight and Investigations Subcommittee on insulin pricing. Also testifying were the ADA's William T. Cefalu, MD (left), and the Yale University School of Medicine's Kasia J. Lipska, MD.

## Endocrine Society Testifies on the Human Effect of Rising Insulin Costs

The skyrocketing price of insulin has caught the attention of policy makers on Capitol Hill, and both House and Senate committees conducted hearings to understand why prices are increasing and what are possible solutions to ensure access to affordable insulin.

On April 2, 2019, the House Energy and Commerce Oversight and Investigations Subcommittee invited the Endocrine Society to testify at its hearing, "Priced Out of a Lifesaving Drug: Getting Answers on the Rising Cost of Insulin." The Endocrine Society was the only one of two medical societies invited in recognition of our advocacy raising the visibility of this issue and our work with the Congressional Diabetes Caucus to make policy recommendations. Endocrine Society member Alvin C. Powers, MD, represented the Society and presented our testimony. Powers joined a panel of other expert witnesses from organizations,

including the American Diabetes Association, the Diabetes Patient Advocacy Coalition, and JDRC.

Our testimony shared examples from Powers' work as the chief of the Vanderbilt Division of Diabetes, Endocrinology, and Metabolism, and how his patients of all walks of life have been affected by rising insulin costs. Powers also highlighted what makes the high cost of insulin unique from other prescribed drugs, pointing out that there is no other life-sustaining drug used by so many who would die in a matter of days without it. The tripling of the price of insulin over the past 15 years is also unique for a drug that was discovered almost 100 years ago and has seen minimal changes in the past decade. He shared the Endocrine Society's position statement on insulin and appealed for more transparency across the supply chain to better understand why this is occurring.

The first in a series of hearings on this topic, this hearing sought to focus on the human impact of rising insulin costs and allowed

lawmakers to hear directly from patients, physicians, and advocates about the extremes some patients must go to in order to afford insulin. Many of the witnesses expressed their frustration at the lack of transparency in the supply chain and described accounts of patients having to dilute their insulin at the risk of their health in order to afford rent and other basic necessities.

At the end of the hearing, Democrat and Republican members of Congress promised the witnesses that they are committed to find a solution to rising insulin costs and will continue to hold hearings with industry leaders, insurers, and other stakeholders in the supply chain. We will continue to work alongside Congress and the administration to identify workable solutions to this growing issue.

To learn more about our continuing work in this space, please visit us at [www.endocrine.org/advocacy/priorities-and-positions/diabetes](http://www.endocrine.org/advocacy/priorities-and-positions/diabetes). 

## Resources to Find Affordable Insulin for Patients

**While the Endocrine Society is working with policy makers to identify long-term solutions on insulin affordability, we want to help physicians find ways to help reduce their patients' out-of-pocket costs. There are a number of programs available for those facing financial hardship:**

Patients who are low income or uninsured should explore patient assistance programs offered by the manufacturers, including:

- LillyCares: [lillycares.com](http://lillycares.com) | 1-800-545-6962
- NovoCare: [novocare.com](http://novocare.com) | 1-866-310-7549
- Sanofi Patient Connection:  
**[sanofipatientconnection.com](http://sanofipatientconnection.com)** | 1-888-847-4877

These programs may also be available to patients with high out-of-pocket costs in Medicare Part D.

There are also lower-cost insulin options for patients who do not qualify for the patient assistance programs:

- Valyou Savings Program: Offers patients insulin at \$99/prescription (Toujeo, Lantus, ADMELOG, or Apidra) starting in June. More information at **[insulinsvalyou.com](http://insulinsvalyou.com)**.
- Insulin Lispro, an authorized generic of Humalog, will soon be available at \$137.35/vial or \$265.20/pack of KwikPens at the pharmacy.
- The Lilly Diabetes Solution Center representatives are available to discuss other potential solutions available to those on Lilly insulin. Call 1-833-808-1234 (M-F, 9 AM – 8 PM, ET).
- NPH and regular human insulin is available at Walmart and CVS at \$25/vial.

Patients with commercial insurance are eligible to receive discounts through a variety of savings programs, which can be accessed at the manufacturer's website. Additional discounts on insulin can be found at **[blinkhealth.com](http://blinkhealth.com)**, **[insiderx.com](http://insiderx.com)**, and **[goodrx.com](http://goodrx.com)**.



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The Department of Medicine at Los Angeles County Harbor-UCLA Medical Center (HUMC) seeks an outstanding diabetologist and clinical leader for the position of Section Head, Diabetes, Division of Endocrinology, Metabolism and Nutrition, with the opportunity to pursue an exciting academic career with a cutting-edge health services or implementation science research program in a collaborative and interdisciplinary environment. The faculty recruit will be supported by a full-time equivalent position with a strong benefit package through the County of Los Angeles. This recruitment is part of an initiative to position Harbor-UCLA at the forefront of Diabetes care by designing and deploying a new high-value diabetes model of care within a large urban academic safety-net medical center.

Candidates must have a strong track record as a leader, manager, innovator, and academic physician. Additional requirements include commitment to our vulnerable patient population as well as a proven ability to successfully collaborate across disciplines, engineer culture change, and work effectively within a large and complex health delivery system. Candidates must be ABIM Certified in Internal Medicine and Endocrinology, eligible for California medical licensure, and eligible for faculty appointment at the David Geffen School of Medicine at UCLA in an appropriate academic series.

Research infrastructure and support is provided through LA BioMed, a non-profit scientific research organization dedicated to improving health and saving lives. LA BioMed has a long track record of achievement in translational science and is also a partner in UCLA's Clinical and Translational Science Institute.

**Confidential review of applications, nominations, and expressions of interest will begin immediately and continue until the ideal candidate is identified.**

**Interested individuals should send a letter of interest and curriculum vitae to:**

**Ronald Swerdloff MD**  
Chief Division of Endocrinology  
[Swerdloff@labiomed.org](mailto:Swerdloff@labiomed.org)

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# BONE HEALTH AND POSTMENOPAUSAL WOMEN

Preventing bone loss is an important concern for women during menopause and post-menopausal stages. Older women are more at risk for osteoporosis and are more prone to fractures (bone breaks). During the postmenopausal stage bones tend to break down more quickly than they are formed, increasing the risk of fragility fractures in the hip, spine, and wrist, causing:



Pain



Decreased  
Mobility



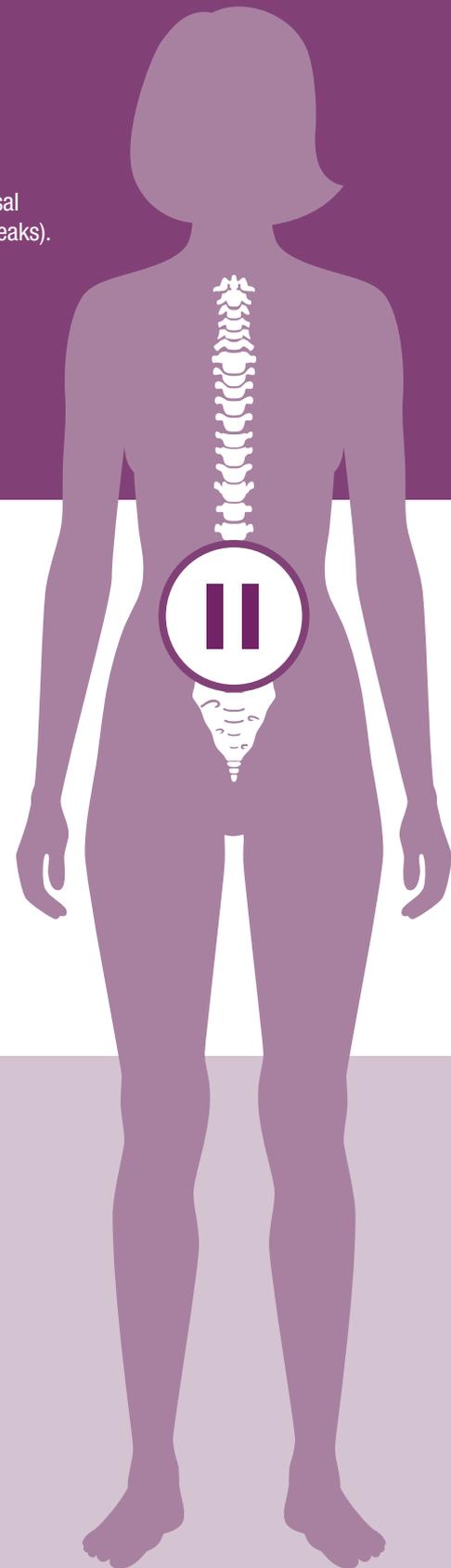
Function in  
Daily Activities

## RESEARCH INDICATES THAT UP TO 20% OF BONE LOSS CAN HAPPEN DURING MENOPAUSE.

Lifestyle choices such as proper diet, exercise, and medications can help to prevent further bone loss and reduce the risk of fractures. Osteoporosis is often called “a silent disease” usually determined with the first fracture (bone break) or by measuring the reduction of bone density.

Common symptoms can include:

- Back pain, if there are small fractures or if vitamin D is extremely low
- Loss of two inches in height
- Kyphosis or a hunchback appearance affecting posture
- Bone fractures (hip, wrist, spine)



**45**  
YEARS

Early menopause (before 45), or the removal of your ovaries and chemotherapy treatment can put you at an early risk for developing osteoporosis.

## DID YOU KNOW?

**1/2**

1 in 2 postmenopausal women will have osteoporosis and most will suffer a fracture during their lifetime.

**15B**

The overall cost to the US for the care of osteoporosis is close to 15 billion dollars. Mostly relating to nearly 400,000 hip fractures in the US.

**20%**

1 in 2 who experience hip fractures will not return to their previous lifestyle and 20% will die as a consequence of their fracture.



Spine fractures are associated with significant back pain, poor quality of life, and greater mortality.

Visit [hormone.org](http://hormone.org) for more information.

Additional Editing by Clifford Rosen, MD, *Maine Medical Center Research Institute*  
Ramon E. Martinez, MD, *Miami Beach Community Health Center*



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Keep your body in balance



All women over the age of 65 should receive a bone density screening as a preventive measure.



Calcium is an important mineral for strong healthy bones and your body needs vitamin D in order to absorb calcium.

## LIFESTYLE CHANGES TO IMPROVE BONE HEALTH

- Resistance, balance, and weight-bearing exercises. Choose safe movements that don't increase the risk of falling
- Eat a balanced diet that include: calcium rich foods, dairy products fortified with vitamin D, and fish if possible
- Sunshine is important to keep vitamin D levels adequate
- Preventing obesity will help keep bones strong
- Avoid smoking
- Limit alcohol consumption



It is never too late to be treated for osteoporosis! Current treatments are very effective and lower the risk of further harm. Treatments should be a shared decision with you and your healthcare team.

## HORMONE AND DRUG THERAPIES TO IMPROVE BONE HEALTH

- **Bisphosphonates:** IV and oral medication used to slow bone loss while increasing bone mass
- **Denosumab:** SQ (injectable) or IV medication that lowers the risk of fractures (bone breaks) and blocks bone loss
- **Tibolone:** hormone therapy that helps to relieve menopause symptoms and prevent osteoporosis *(not available in the US or Canada)*
- **Calcitonin:** nasal spray used to regulate calcium levels in the body
- **Calcium and Vitamin D Supplement:** enhance bone formation and prevent fractures
- **Estrogen:** hormone therapy prevents osteoporosis by reducing the breakdown of bone (what is called bone resorption)
- **Abaloparatide or Teriparatide:** parathyroid hormone which increases bone mass by stimulating bone formation and bone turn over



## QUESTIONS TO ASK YOUR HEALTHCARE TEAM

- How low is my bone density?
- Am I considered high risk for fractures?
- Do I need treatment, or can I wait?
- What are the side effects of the treatment you are recommending?
- Should I take any supplements, like calcium and vitamin D?
- Should I see an endocrinologist or any other specialist?

## Patients have questions. We have answers.

The Hormone Health Network is your trusted source for endocrine patient education. Our free, online resources are available at [hormone.org](http://hormone.org).

Developed for patients based on *Pharmacological Management of Osteoporosis in Postmenopausal Women: An Endocrine Society Clinical Practice Guideline*



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**PennState Health**  
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## ENDOCRINOLOGY CLINICAL INVESTIGATOR/SCIENTIST

The Division of Endocrinology, Diabetes, and Metabolism at **Penn State Health Milton S. Hershey Medical Center**, Penn State College of Medicine (Hershey, PA) is seeking an NIH-funded **Clinical Investigator/Scientist** with a focus on basic/clinical diabetes related research to join an expanding Diabetes program. A highly competitive departmental and institutional start-up package will supplement the candidate's extramural support to strengthen and expand the candidate's ongoing research with the goal of developing novel scholarly initiatives within the division and the institution in the field of diabetes. Joint appointments in Basic Science Departments are anticipated.

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Appropriate candidates must possess a MD, MD/PhD or foreign equivalent, NIH funding, the ability to obtain a medical license in the Commonwealth of Pennsylvania.

*Qualified applicants should contact:*

**Andrea Manni, M.D.**  
Professor and Division Chief of Endocrinology  
Diabetes, and Metabolism  
c/o **Heather Peffley, PHR, FASPR**  
Physician Recruiter  
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**[hpeffley@pennstatehealth.psu.edu](mailto:hpeffley@pennstatehealth.psu.edu)**

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SOCIETY

# *Treatment of Diabetes in Older Adults*

## A NEW STANDARD FOR CARE

Get the latest recommendations and treatment strategies, which take into consideration the overall health and quality of life of older individuals with diabetes, defined as age 65 or older.

### Recommendation Highlights:

- ▶ Simplify medication regimens and tailor glycemic targets in older adults with diabetes and cognitive impairment (i.e. dementia) to improve compliance and prevent treatment-related complications.
- ▶ Target blood pressure levels of 140/90 mmHg to decrease the risk of cardiovascular disease outcomes, stroke, and progressive chronic kidney disease.
- ▶ Establish clear blood sugar targets for older adults with diabetes in hospitals or nursing homes while avoiding hypoglycemia.

**READ THE GUIDELINE AT [ENDOCRINE.ORG/2019DIABETES](https://www.endocrine.org/2019diabetes)**