

DECEMBER 2023

THE LEADING MAGAZINE FOR ● ENDOCRINOLOGISTS

Endocrine news

Endocrine News looks
at the researchers
behind the research.

With her passion for hormone research, **Emily Hilz, PhD**, is embarking on creating an app that could potentially prevent thousands of women from being exposed to endocrine-disrupting chemicals often found in beauty products.

Endocrine INNOVATIONS

TRANSLATIONAL MEDICINE:

Q&A with 2023 Gerald D. Aurbach Award Winner, Márta Korbonits, MD, PhD

CAREERS IN FOCUS:

Chatting with the Committee on Diversity and Inclusion's video contest winners

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Hormone Science to Health

Endocrine news

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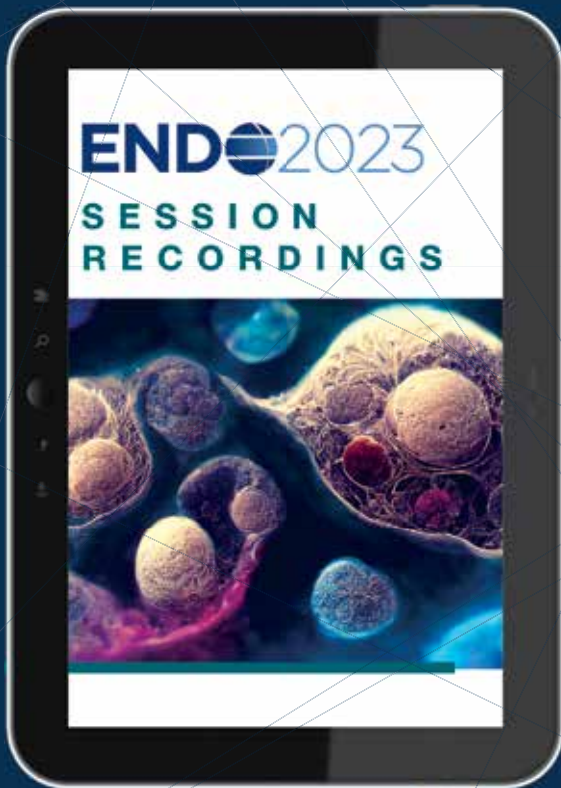
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How Vertex hopes to transform the treatment landscape for type 1 diabetes — SPONSORED CONTENT

Endocrine Society member Tina Gupta, MD, always possessed a passion for helping her patients with type 1 diabetes overcome their daily struggles. She gives *Endocrine News* an exclusive account of why she made the move to the biotech industry by joining Vertex Pharmaceuticals, thus ensuring that her enthusiasm for patient-centered care can now help as many people as possible living with type 1 diabetes.

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Warning consumers about EDCs from the laboratory bench.

With a keen interest in hormonal research, Emily Hilz, PhD, has become passionate about the dangers of endocrine-disrupting chemicals, especially in beauty products. She talks to *Endocrine News* about a new app she's developing to help shield Black women from dangerous products they could be using every day. BY COLLEEN WILLIAMS

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CAREERS IN FOCUS

MEET THREE OF THE 2023 CODI VIDEO CONTEST WINNERS

The Endocrine Society's Committee on Diversity and Inclusion (CoDI) launched The Future of Endocrinology Video Competition this year to further prioritize diversity, equity, and inclusion throughout the academic cycle. *Endocrine News* chatted with three of

this year's contest winners about their own goals and the importance of such programs.

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Q&A WITH MÁRTA KORBONITS, MD, PHD

Márta Korbonits, MD, PhD, the 2023 Endocrine Society Gerald D. Aurbach Laureate Award recipient for Outstanding Translational Research, talks to *Endocrine News* about the award, her research on pituitary adenomas, and her own words of wisdom.

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Government shutdown averted again as Society advocates to fund health, research programs; White House launches women's health research initiative; CMS finalizes physician payment rule; Society advocates expanding access to obesity treatment; and Society successfully advocates for policy priorities at AMA interim meeting.

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ENDOCRINE SOCIETY

Hormone Science to Health



Celebrating 2023's Breakthroughs in Obesity

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More than half the global population is projected to have obesity by 2035, according to the World Obesity Atlas. Endocrine clinicians and researchers are well positioned to address this public health threat, but hurdles remain. While the number of anti-obesity medications being prescribed is rising exponentially, supply and insurance coverage issues remain a major obstacle.
”

As we take stock of 2023, we are living in an era that has the potential to mark a real breakthrough in cardiometabolic health.

Basic researchers spent years toiling to improve our understanding of glucagon-like peptide-1 (GLP-1) receptor agonists. These basic discoveries that endocrine scientists made in the 1980s and 1990s have yielded a new class of incredibly effective anti-obesity medications — treatments with the potential to address the intractable challenge of obesity and related conditions like diabetes, metabolic dysfunction-associated steatotic liver disease (MASLD — yes, I can indeed learn a new name!), and cardiovascular disease. The FDA approved the newest medication in this class just last month.

More than half the global population is projected to have obesity by 2035, according to the World Obesity Atlas. Endocrine clinicians and researchers are well positioned to address this public health threat, but hurdles remain. While the number of anti-obesity medications being prescribed is rising exponentially, supply and insurance coverage issues remain a major obstacle.

The Society is working to educate our members and policymakers to ensure obesity is treated like any other disease. We hosted 34 fellows from 15 states and Puerto Rico during our first Obesity Fellows Conference in October. This group explored why obesity remains underdiagnosed and how to address gaps in treatment. I must say that I have heard nothing but positive comments from attendees, and we intend to bring this back next year. Many thanks to event chair Amy Rothberg, MD, and our talented faculty for organizing this important conversation.

On the advocacy side, the Society hosted a briefing in September to educate members of Congress and congressional staff about anti-obesity medications. We continue to advocate for legislation to improve access to anti-obesity medications and intensive behavioral therapy. Our staff developed an Obesity Playbook to educate congressional staff about obesity and its impact on public health. We also hosted a Science Writers Conference last month to educate journalists about obesity treatments and cardiovascular health. Finally, last month I joined our amazing advocacy team on the Hill to visit with lawmakers to support the Treat and Reduce Obesity Act.


Obesity research and treatment remains a priority for the Society as we look ahead to 2024. Watch for plenty of engaging content on cardiometabolic health at **ENDO 2024**, including our presidential plenary on cardiovascular disease in diabetes.

While 2023 was a landmark one for obesity treatment, we have many more achievements to celebrate. *Journal of the Endocrine Society* earned an Impact Factor for the first time when the 2022 scores were released in June. We are thrilled to receive this recognition of the influence of our prestigious journal portfolio.

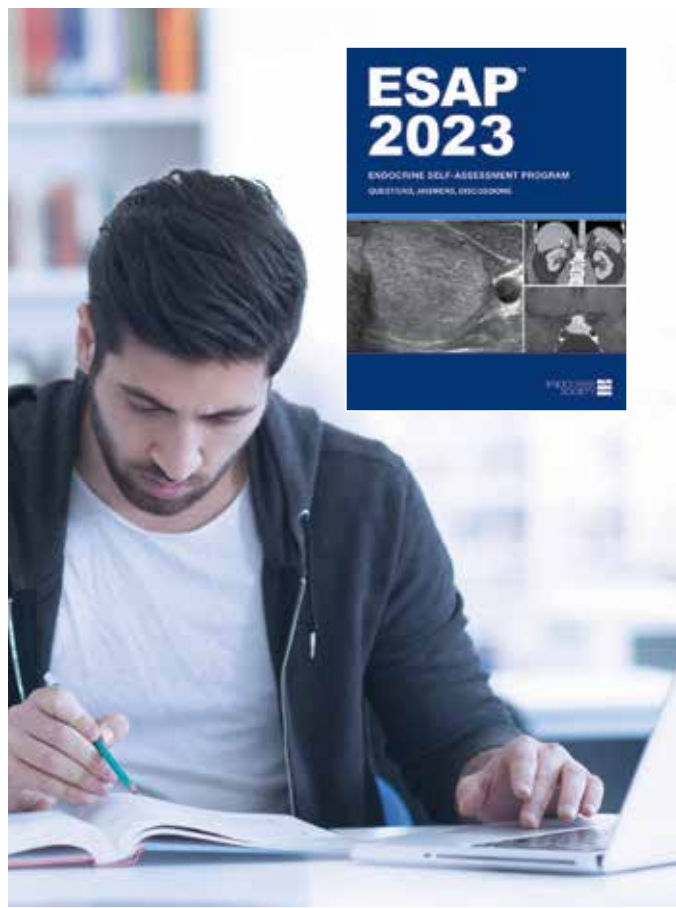
I am proud that our events brought together endocrine researchers and clinicians from around the globe to explore emerging science and clinical advances. **ENDO 2023** in Chicago drew thousands of attendees from 82 countries. Attendees presented more than 2,300 scientific posters and attended hundreds of educational sessions. Our digital education events, Clinical Endocrinology Update and Endocrine Board Review, connected clinicians with top experts to discuss treatment approaches.

We are continually exploring new ways to connect our members digitally with the latest resources. Our Special Interest Groups (SIGs), where you can meet fellow members who share your interests in online communities as well as at in-person networking events, offer one way to make new connections in the field. This year, we formed our eighth SIG focused on bone and mineral metabolism and disorders. We are excited to see how members leverage these groups to share the latest advances in research and clinical care.

In a testament to the global nature of our field, we elected our first president-elect from outside the United States this year. I will be turning over leadership of the Society to John Newell-Price, MD, PhD, FRCP, this summer at **ENDO 2024**. As I have gotten to know John through this past year, I am more and more impressed. He brings his thoughtful perspective as professor of endocrinology at the University of Sheffield and as head of the Endocrinology Service at the Sheffield Teaching Hospitals NHS Foundation Trust in Sheffield, U.K., to the role. Most importantly, he is a smart, caring physician scientist who, like me, loves the Endocrine Society and wants to give back to the organization that has given so much to him. I am eager to see more international members involved in leading the Society into the future.

As we close out the year, I want to express my gratitude to our many volunteers and dedicated members who contribute to the Society's success. You are what makes this role so fulfilling. I look forward to seeing what we can achieve together in 2024. 

Stephen R. Hammes, MD, PhD
President, Endocrine Society



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FROM THE **EDITOR**

2023 Was a Banner Year for Endocrine Science!

It's an endocrine science takeover of the December issue as another year comes to a close, and we take a closer look at the remarkable endocrine discoveries in endocrine science as well as the researchers who made the discoveries! For the ninth consecutive year, we are running "Eureka! The Year's Biggest Discoveries in Endocrine Science." This year's roundup is once again compiled by Kelly Horvath who spoke with editors from the Endocrine Society's scientific journals for their input on new discoveries that could easily affect the future of endocrine science and treatment. This year's edition on page 14 clocks in at well over 4,000 words — further proof of how vital endocrine science and endocrine researchers are to the future of human health.

On page 24, Colleen Williams talks to Emily Hilz, PhD, about her hormone research as well as her efforts in developing an app that could potentially shield Black women from harmful endocrine-disrupting chemicals (EDCs) that are so often found in beauty products. In "The Root of The Problem," Hilz, a member of Andrea Gore's lab at the University of Texas at Austin, goes into great detail about her passion for hormonal research and why she's so adamant about rooting out dangerous EDCs wherever they may be lurking. "When I joined Dr. Gore's lab, I didn't fully understand the repercussions of EDCs," she says. "As I've gotten more involved in the field, it's shocking and upsetting to me how prevalent and underregulated these chemicals are. I'm passionate about raising more awareness around EDCs and want to add my voice to the many voices at the Society that are calling for action because this is such a serious health crisis."

On page 36, we have another installment of Early-Career Corner that focuses on a new initiative from the Endocrine Society's Committee on Diversity and Inclusion (CoDI) to create an opportunity for students from underrepresented communities who have an interest in practicing medicine or conducting research in endocrinology. Glenda Fauntleroy Shaw spoke with three of the eight winners of the inaugural Future of Endocrinology Video Competition in "Careers in Focus," and they share their thoughts about the competition, their first impressions of attending ENDO 2023 in Chicago, as well as their own goals in medical science. "If endocrinology is your passion, this competition offers an ideal stage to

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showcase your dedication and commitment to the field,” says contest winner Arthur Registre, who is currently attending the CUNY Graduate School of Public Health & Health Policy. “It’s important to understand that success isn’t solely defined by the outcome, but by the effort you invest.” The contest relaunches early next year and will focus on students in the Boston area, site of ENDO 2024 in June.

On page 40, Glenda talks to one of the endocrine science’s “superstars” in the field of pituitary adenoma research, Márta Korbonits, MD, PhD, the recipient of the Endocrine Society’s 2023 Gerald D. Aurbach Award for Outstanding Translational Research in the aptly titled “**Translational Medicine.**” This award recognizes outstanding contributions to research that accelerate the transition of scientific discoveries into clinical applications. She says that she feels her work certainly fits the bill as being “translational medicine” since

so much of it is involved with “translating clinical questions to experiments and the other way [around], taking scientific results and applying them for patient diagnostics or treatment,” she explains. She adds that she that she often feels like a “translator” because she understands the clinician’s issues and what is unclear for them in a complex study, but she can explain the findings that underscore the clinical relevance for them and their patients.

Enjoy this issue overflowing with endocrine science as we head into 2024, and we start all over again when we meet the new class of Endocrine Society Laureates! As always, if you have any suggestions, comments, or story ideas, feel free to contact me at: mnewman@endocrine.org 

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

Letter to the Editor

I wanted to let you know how much I enjoyed reading [“Cultural Connections: How understanding Hispanic traditions can improve treatment outcomes.”] in the [October] issue of *Endocrine News*. I appreciate how the story underlined the importance of taking a personalized approach with Hispanic/Latino patients with [type 2 diabetes] and obesity that acknowledges their unique culture, and highlighted the challenges that exist in providing equitable access to care and medicines. We are fortunate to have Dr. Galindo as a champion for the community!

Sarah Noel
Indianapolis, Ind.



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BY DEREK BAGLEY
Senior Editor



“

A key next step will be implementation of an ongoing larger clinical study fully powered to detect a DFMO treatment effect on maintenance of C-peptide either in the recent-onset or at-risk population. Based on these results, DFMO could potentially also be applied to T1D prevention, likely as a combination therapy.

”

Repurposed Drug Offers New Potential for Managing Type 1 Diabetes

Repurposing the drug α -difluoromethylornithine (DFMO) may help in managing type 1 diabetes and reducing insulin dependency, preserving beta-cell function through islet cell-autonomous effects, according to a study recently published in *Cell Reports Medicine*.

Researchers led by Linda DiMeglio, MD, MPH, Edwin Letzter Professor of Pediatrics at the Indiana University (IU) School of Medicine and a pediatric endocrinologist and division chief at Riley Children's Health, point out that while therapy has improved since insulin was discovered a century ago, type 1 diabetes still leads to morbidity and mortality, as well as a reduced quality of life in affected individuals.

The authors point to DFMO's efficacy in mouse and zebrafish models, delaying the onset of diabetes and enhancing beta-cell regeneration, respectively. In 2010, the study's co-corresponding author, Raghu Mirmira, MD, PhD, was operating a research lab at IU School of Medicine when his team initially discovered that inhibiting the metabolic pathway affected by DFMO could safeguard beta cells from environmental factors, suggesting potential preservation in type 1 diabetes. The team subsequently validated these findings in mice.

“Notably, in the non-obese diabetic (NOD) mouse, a model of autoimmune T1D, administration of α -difluoromethylornithine (DFMO, an irreversible inhibitor of the polyamine biosynthetic enzyme ornithine decarboxylase [ODC]) delayed diabetes onset, whereas administration of the polyamine spermidine increased the incidence of diabetes,” the authors write. “Moreover, in zebrafish, DFMO

enhances β cell regeneration, suggesting that depletion of polyamines might contribute to new β cell growth in some species.”

From 2015 to 2019, DiMeglio directed a clinical trial that affirmed DFMO's safety in people newly diagnosed with type 1 diabetes and suggested that it might also stabilize insulin levels by safeguarding beta cells. The trial was funded by the Juvenile Diabetes Research Foundation (JDRF) with the drug provided by Panbela Therapeutics.

“Taken together, this study suggests that DFMO is a safe oral treatment option that may improve β cell function and/or survival and may be a good choice in combination with immunomodulatory agents to augment β cell function and survival in



T1D,” the authors write. “A key next step will be implementation of an ongoing larger clinical study fully powered to detect a DFMO treatment effect on maintenance of C-peptide either in the recent-onset or at-risk population. Based on these results, DFMO could potentially also be applied to T1D prevention, likely as a combination therapy.”

Women Face Greater Risk of Obesity in Low- and Middle-Income Countries

Women in low- and middle-income countries (LMICs), especially in the Sub-Saharan Africa region, may be 10 times more likely to have obesity or heart health issues than their male counterparts, according to a large meta-analysis published in *The Journal of Clinical Endocrinology and Metabolism*.

The study authors point out that obesity and its complications affect women and men differently, since women with obesity can potentially face polycystic ovary syndrome, gestational diabetes, and hypertensive disorders of pregnancy. “Accurate data on obesity and cardiovascular disease burden is the first critical step toward reducing the global burden of cardiovascular disease in women by 2030,” the authors write. “However, the extent of sex-related differences in the risk of obesity and cardiometabolic diseases in LMICs and the variations in disparities between regions, country’s income status, setting, and over time is not known.”

Obesity kills at least 2.8 million people per year, yet the public still does not recognize it as a disease, and anti-obesity medications are still underprescribed and hard to access.

“Our findings are important as they call for urgent actions targeting obesity awareness, prevention, treatment, and control in women in low- and middle-income countries,” says corresponding author Thais Rocha MD, PhD, of the University of Birmingham in Birmingham, U.K.


The researchers included 3,916,276 people in the meta-analysis and found obesity does not manifest evenly across women and men in low- and middle-income countries, with women being two to three times more likely to be affected than men. They found the greatest disparity in the risk of obesity

between women and men is in the Sub-Saharan region, where women are up to 10 times more likely to have obesity than men.

“This high burden of obesity in women in low- and middle-income countries can be explained by underlying biological, sociocultural, and socioeconomic factors that are uniquely faced by women,” Rocha says.

Rocha shared a few examples of the factors contributing to the higher rate of obesity in these women including:

- ▶ Weight gain during pregnancy and menopause.
- ▶ Beliefs that larger body types indicate high socioeconomic status, and fertility associated obesity in women as a sign of “wealth and health.”
- ▶ Obesity risk seems to be positively and significantly associated with childhood deprivation in women but not men,
- ▶ Women are also more likely to be influenced than men by other factors predisposing them to obesity, such as poor dietary habits, sedentary lifestyles, and price inflation.

“Our findings call for urgent sex-specific and region-stratified actions targeting obesity awareness, prevention, treatment, and control in women in LMICs,” the authors write in their conclusion. “Interventions require a woman-centered approach considering the cultural, social, and behavioral barriers and facilitators uniquely faced by women in following the recommended diet-based and physical activity interventions and appropriate pharmacotherapy.” 



“

Interventions require a woman-centered approach to treating obesity, considering the cultural, social, and behavioral barriers and facilitators uniquely faced by women in following the recommended diet-based and physical activity interventions and appropriate medical treatment.

”

FDA Approves Tirzepatide for Chronic Weight Management



Last month, the U.S. Food and Drug Administration (FDA) approved tirzepatide for adult patients with obesity, or for those who are overweight and have weight-related medical problems such as hypertension, dyslipidemia, type 2 diabetes mellitus, obstructive sleep apnea, or cardiovascular disease. The tirzepatide injection activates both GIP (glucose-dependent insulinotropic polypeptide) and GLP-1 (glucagon-like peptide-1) hormone receptors. Eli Lilly and Company is marketing the drug as Zepbound™.

The approval was based on results from the phase 3 SURMOUNT-1 and SURMOUNT-2 trials. In SURMOUNT-1, a study in 2,539 adults with obesity, or excess weight and weight-related medical problems not including diabetes, people taking Zepbound as an adjunct to diet and exercise experienced substantial weight loss compared with placebo at 72 weeks. At the highest dose (15 mg), people taking Zepbound lost on average 48 pounds, while at the lowest dose (5 mg), people lost on average 34 pounds (compared to 7 pounds on placebo).

Additionally, one in three patients taking Zepbound at the highest dose lost more than 58 pounds (25% of body weight), compared to 1.5% on placebo, according to data not controlled for type 1 error. The average starting weight was 231 pounds.

While not approved to treat these conditions, in a clinical trial, people who dieted, exercised, and took Zepbound for the treatment of obesity or overweight with weight-related medical problems observed changes in cholesterol and reductions in blood pressure and waist size. (Tirzepatide was approved by the FDA for the treatment of type 2 diabetes in May 2022.)

“The approval of Zepbound is welcome news for patients with obesity and the physicians who care for them,” says Robert W. Lash, MD, chief medical officer of the Endocrine Society. “Like Wegovy, Zepbound has been shown to be remarkably effective in helping patients achieve significant weight loss,



“

I am thankful for my patients for this opportunity to treat their chronic, multifactorial disease with an additional tool. **While this is just another tool, we must recognize the heterogeneity of this disease and the need for various treatments for patients across the spectrum.”** ”

— FATIMA CODY STANFORD, MD, MPH, MPA, MBA, ASSOCIATE PROFESSOR OF MEDICINE AND PEDIATRICS, HARVARD MEDICAL SCHOOL; OBESITY MEDICINE PHYSICIAN, MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

and address complications of obesity, including diabetes and hypertension. This class of drugs remains in short supply, so the addition of Zepbound will make it possible for more patients to benefit from treatment.”

“The approval of tirzepatide adds an additional, highly effective agent to our armamentarium of tools to treat patients with obesity and its sequelae,” says Fatima Cody Stanford, MD, MPH, MPA, MBA, associate professor of medicine and pediatrics at Harvard Medical School and an obesity medicine physician at Massachusetts General Hospital in Boston. “I am thankful for my patients for this opportunity to treat their chronic, multifactorial disease with an additional tool. While this is just another tool, we must recognize the heterogeneity of this disease and the need for various treatments for patients across the spectrum.”

Zepbound use may be associated with gastrointestinal adverse reactions, sometimes severe. The most commonly reported adverse events (observed in $\geq 5\%$ of clinical trial participants) were nausea, diarrhea, vomiting, constipation, abdominal pain, dyspepsia, injection-site reactions, fatigue, hypersensitivity reactions, eructation, hair loss, and gastroesophageal reflux disease. In studies, most nausea, diarrhea, and vomiting occurred when people increased their dose – but the effects generally decreased over time.

Rishi Raj, MD, an endocrinologist at the Pikeville Medical Center in Pikeville, Ky., agrees that the approval of the new drug marks a significant change in how clinicians can address the problem of obesity. “Importantly, it doesn’t just target weight; it also shows promise in improving cholesterol levels, blood pressure, and waist circumference for those dealing

with obesity-related health issues,” he tells *Endocrine News*. “In rural Kentucky, where obesity rates are significantly high, healthcare providers can now include Zepbound in personalized treatment plans.”

Zepbound should be used with a reduced-calorie diet and increased physical activity. Zepbound should not be used with other tirzepatide-containing products or any GLP-1 receptor agonist medicines, and it has not been studied in patients with a history of pancreatitis, or with severe gastrointestinal

Zepbound is expected to be available in the U.S. by the end of the year in six doses (2.5 mg, 5 mg, 7.5 mg, 10 mg, 12.5 mg, and 15 mg) at a list price of \$1,059.87, which is approximately 20% lower than semaglutide 2.4 mg injection for weight loss. List price does not reflect the typical out-of-pocket cost to patients given insurance coverage and discounts. Lilly is putting a commercial savings card program in place that will help people who may benefit from Zepbound better access it.

“The commitment to affordability, as seen in the commercial savings card program, is essential to ensure that more people can access this groundbreaking treatment, fostering positive changes in community health,” Raj says. “This is particularly crucial as there are currently limited effective and cost-efficient ways to manage obesity.” ^{EN}

– Derek Bagley

ENDO 2024

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We hope to see you at **ENDO 2024**, taking place June 1 – 4, 2024, in Boston, Mass. With over 7,000 attendees, nearly 2,000 abstracts, and over 200 other sessions, **ENDO** is the top global meeting on endocrinology research and clinical care. **ENDO** provides the opportunity to collaborate with an unparalleled list of endocrinologists, healthcare practitioners, and leading scientists from around the world. Through sharing our experience, advice on patient care, and new advances in research, we move the needle forward in hormone health and science. Our outstanding slate of world-renowned speakers will showcase the most cutting-edge advances in research and medicine, with presentations spanning the spectrum of science, clinical care, and social implications. <https://www.endocrine.org/meetings-and-events/endo-2024>

2024 CDEI

Snowmass, Colorado
January 20 – 23, 2024

The 59th Annual Clinical Diabetes and Endocrinology Institute CME Conference will address updates in hormonal contraception, transgender health guidelines, thyroid nodules, lipids, management of thyroid cancer, obesity, Cushing syndrome, type 2 diabetes, and much more. The faculty will be composed of known experts, will offer insights, latest research, case presentations, and clinical guidelines.

<https://www.eventsquid.com/event.cfm?id=20903>

BPS 2024

Philadelphia, Pennsylvania
February 10 – 14, 2024

At the Biophysical Society's BPS 2024, the symposia and workshops are as exciting as ever, with a slate of invited speakers that represent breakthrough biophysics research and who will give a glimpse into what the next generation of our society looks like.

For the first time, we have reserved at least 20% of symposia talks for speakers selected directly from submitted abstracts. Principal investigators will find the new option to self-suggest their abstract describing their latest research for symposia topics. The topics



will be varied and stimulating, covering the broad membership of our society. From staple themes like membrane proteins to venturing into new areas where biophysics is making an impact, such as plant biology and how biological systems adapt to temperature change.

<https://www.biophysics.org/2024meeting#>

Clinical Endocrinology 2024

Live Streaming
April 3 – 7, 2024

Clinical Endocrinology 2024, a live streaming CME program, has been optimized for remote learning. All sessions and workshops will be live streamed and include online, live chat, where participants can pose their specific questions to faculty. All sessions

and workshops will be recorded and made available to participants for online viewing, at their convenience, via a course archive. As a participant, you will be able to access these recordings for 90 days after the conclusion of this course.

<https://endocrinology.hmscme.com>

AAES 2024 Annual Meeting

Dallas, Texas
April 20 – 22, 2024

American Association of Endocrine Surgeons 2024 Annual Meeting attendees can look forward to dynamic speakers, presentations



of innovative research, opportunities to connect with colleagues, and informative panel discussions. This year's pre-meeting Advanced Course in Endocrine Surgery will include outstanding faculty and a wide range of topics. In addition, sponsors will

be on site to showcase cutting-edge technological advancements pertinent to the practice of endocrine surgery. The AAES Annual Meeting is dedicated to the advancement of the science and art of endocrine surgery through exchange of knowledge and fostering collaboration. The upcoming 2024 event promises to deliver innovative programming that will enrich attendees' clinical practices, provide networking opportunities, and facilitate scholarly pursuits. We cordially invite you to join us in Dallas for this exciting event. It will be an excellent opportunity to dive into new topics, share expertise, and connect with peers who share similar interests.

<https://www.endocrinesurgery.org/2024-annual-meeting>

2024 Lab Manager Leadership Summit
Denver, Colorado
April 29 – May 1, 2024

The Lab Manager 2024 Leadership Summit will offer actionable advice on the management,



business, safety, and staffing challenges facing today's lab managers. The program's expert speakers will provide you with the tools you need to reach higher levels of engagement and efficiency among your lab teams. Topics will range from dealing with burnout, to incorporating automation into your lab, to lab operations, to effective communication, and much more — an interactive Q&A will follow each session. Attendees will also be able to participate in hands-on workshops and roundtable discussions where they will receive focused advice and learn from real-life examples of leadership success.

<https://www.labmanager.com/lab-manager-leadership-summit-30946>

INTERNATIONAL ITINERARY

Third Euro Diabetes, and Endocrinology Congress
Paris, France

December 11 – 12, 2023

The Third Euro Diabetes and Endocrinology Congress is a unique forum for diabetologists and endocrinologists with comparable levels of experience and education to present, exchange ideas, and develop collaborative networks in both academia and industry.

<https://diabetic.plenareno.com>

World Endocrine, Diabetes & Cardiovascular Conference (EDCC24)

Bangkok, Thailand

March 9 – 10, 2024

The conference program includes local and international speakers with inspiring insights to share on advancing endocrinology, diabetes, cardiovascular health, and metabolism quality improvement through patient and family experiences.

This will be an opportunity to come together, collaborate, and share the latest advancements in the endocrinology field, offering the opportunity to learn and collaborate across a variety of approaches, disciplines, and specialties, providing engaging on-demand and live sessions.

<https://endocrine.episirus.org/bangkok>

4th International Conference on Diabetes, Endocrinology, and Obesity

Rome, Italy/Virtual

March 11 – 12, 2024

This Diabetes Meet 2024 Conference invites all the academic scientists, endocrinologists, surgeons, primary healthcare specialists, pediatricians, pharmaceutical industrial delegates, talented young scientists, and student communities across the globe where all the aspects of diabetes mechanism, disorders, and treatment will be discussed under a single roof. The upcoming Diabetes Meet 2024 will be focusing upon advances in the evaluation and treatment of diabetes to help improve communication and knowledge among professionals, and to provide a platform for international colleagues to establish corporations and stimulating presentations.

<https://www.diabetesmeet.com>

ECE 2024: 26th European Congress of Endocrinology
Stockholm, Sweden

May 11 – 14, 2024

Attracting over 4,000 delegates, from more than 100 countries, ECE continues to develop as a world-leading congress for endocrine specialists. Given that our community works on diverse research topics and sees patients with a wide range of conditions, ECE enables access to a comprehensive program, covering the breadth of the endocrinology. Whatever your area of interest, there will be sessions that are of direct relevance, as well as extensive networking opportunities. The exciting program for ECE 2024 will feature talks from leading names in our field who are exploring some of the most topical and controversial issues in endocrine research and practice.

<https://www.es-hormones.org/events-deadlines/european-congress-of-endocrinology/ece-2024>

EUUREKA!

For the ninth year running, *Endocrine News* talks to editors from Endocrine Society publications to unearth the endocrine nuggets of 2023.

The Top Endocrine Discoveries of 2023



BY KELLY HORVATH



The endocrine Gold Rush of '22 from last year's issue might have seemed impossible to top, but we not only saw an abundance of fascinating and important research this year, we also added a new editor to the team of prospectors.

Celebrating its first anniversary, the Endocrine Society's newest journal, *JCEM Case Reports*, sees its editor-in-chief joining an illustrious panel of editors from *Endocrine Reviews*, *Endocrinology*, *Journal of the Endocrine Society*, and *The Journal of Clinical Endocrinology & Metabolism* (JCEM) to share what they consider the top endocrinology studies published in the past 12 (or so) months.

Their top studies touch on every facet of endocrinology, from how hormones affect cancers to more precise management of primary aldosteronism, secondary adrenal insufficiency, and type 2 diabetes. Growth disorders and other endocrinopathies are better understood mechanistically. The importance of growth hormone and gonadotropin-releasing hormone for cognition rescue was revealed. The socioeconomic toll of Cushing syndrome was explored.

Translational medicine was also big this past year, and even wearables got a nod. A promising lineup of pharmaceutical breakthroughs emerged: Riluzole enhances therapy in breast cancer, batoclimab treats thyroid eye disease, canagliflozin and ertugliflozin are showing efficacy in various aspects of type 2 diabetes, and fezolinetant may finally be controlling hot flashes in menopause.

Their selections underscore the remarkable advancements researchers made in enhancing human health and well-being, signaling another landmark year in the field of endocrinology.



From the Editor of *Endocrine Reviews*



Endocrine Reviews Editor-in-Chief Ashley Grossman, FMedSci, emeritus professor of endocrinology, University of Oxford; senior research fellow, Green Templeton College; consultant NET endocrinologist, Royal Free London; professor of neuroendocrinology,

“ We should be careful in our use of language, and the historically fascinating but clinically misleading disease referred to as ‘diabetes insipidus’ should be replaced by AVP-deficiency and AVP-resistance: **Less mellifluous perhaps, but we are in the business of saving lives, and in inexperienced hands the wrong term can lead to serious mismanagement.**”

— ASHLEY GROSSMAN, FMedSci, EDITOR-IN-CHIEF,
ENDOCRINE REVIEWS

Barts and the London School of Medicine; and consultant endocrinologist at the London Clinic Centre for Endocrinology, in the UK, chose **“Recurrent Disease in Patients With Sporadic Pheochromocytoma and Paraganglioma”** from the February issue of *JCEM* by Li M., et al., chiefly because it relates to his specific clinical practice, focusing on pheochromocytomas and paragangliomas and because he has worked with some of the authors.

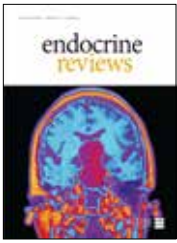
“In essence, they examined a large series of patients with these tumors, 1,127 to be exact, and somewhat surprisingly (to me) found that of the group with purely apparent sporadic tumors, with no germline mutations according to current panels, 14.7% ultimately recurred, some even 15 years after the original diagnosis,” Grossman says. “This really implies that all patients with such tumors require follow-up for life, which I think will impact on our clinical practice, even if we rely on just annual check-ups. These are important new results.”

Grossman also selected two “honorable mentions.” He highlights **“Changing the Name of Diabetes Insipidus: A Position Statement of the Working Group for Renaming Diabetes Insipidus,”** by Arima H., et al., from the November 2022 issue of *JCEM* for “reasons of patient safety. We should be careful in our use of language, and the historically fascinating but clinically misleading disease referred to as ‘diabetes insipidus’ should be replaced by AVP-deficiency and AVP-resistance: Less mellifluous perhaps, but we are in the business of saving lives, and in inexperienced hands the wrong term can lead to serious mismanagement.”

Grossman selected **“^[11C]metomidate PET-CT versus adrenal vein sampling for diagnosing surgically curable primary aldosteronism: a prospective, within-patient trial”** by Wu X., et al., from the January issue of *Nature Medicine* to make clinicians more broadly aware of this noninvasive test in diagnosing primary aldosteronism (PA) caused by unilateral adenoma and thereby potentially curing a much greater proportion of these patients with resultant surgery. “I think we now increasingly accept that PA is a much more significant cause of hypertension than was previously considered, that aldosterone per se is directly harmful, and that surgical removal of any tumor identified is the optimal treatment. Using radionuclides such as ^[11C]-metomidate, and hopefully more widely available isotopes such as ^{18F} linked to metomidate or similar agents, may ultimately obviate the necessity for the complex and expensive venous catheterization studies, and allow more patients to benefit from surgery,” Grossman explains.



More From the Editors of *Endocrine Reviews*



Lauren Fishbein, MD, PhD, MTR, assistant professor in medicine at the University of Colorado School of Medicine in the Division of Endocrinology, Metabolism, and Diabetes also homed in on a primary aldosteronism study, but this time on bilateral disease in **“Biomarkers to Guide Medical Therapy in**

Primary Aldosteronism,” by Hundemer G. L., et al., from the July issue of *Endocrine Reviews*. “This article is important because primary aldosteronism is underdiagnosed and often undertreated,” Fishbein says. “Although some cases are from unilateral adrenal disease and can be treated surgically, the majority are associated with bilateral disease and are treated medically. Many patients are undertreated and continue to have to take multiple medications to control blood pressure and serum potassium. This excellent review article discusses the goals of medical therapy for primary aldosteronism including normalizing blood pressure on the fewest agents, normalizing serum potassium without supplementation, and seeing a rise in plasma renin activity. With proper medical treatment, normal physiology can be restored, and risks for cardiometabolic and renal disease can be mitigated.”

From the Editor of *Endocrinology*



Editor-in-Chief Carol A. Lange, PhD, professor of medicine (Division of Hematology, Oncology, and Transplantation) and pharmacology; Tickle Family Land Grant Endowed Chair of Breast Cancer Research; co-lead, Cellular Mechanisms of Cancer Program; and director, Molecular, Genetic, and

Cellular Targets of Cancer Training Program at the University of Minnesota Masonic Cancer Center in Minneapolis chose **“Estradiol Augments Tumor-Induced Neutrophil Production to Promote Tumor Cell Actions in Lymphangiomiomatosis Models,”** by Minor B. M. N., et al., from the April issue of *Endocrinology*. Says Lange: “This is really a sweeping mechanistic and translational story that I predict will have a high impact on the field and on patients with lymphangiomiomatosis (LAM). Estrogen signaling promotes LAM via activation and expansion of neutrophils within the bone marrow, which in turn drive the disease.”

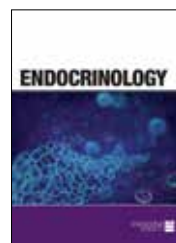
Lange’s other picks include another great mechanistic study that looks at “the other” estrogen receptor ligands as well as two papers from the John Blenis lab at Weill Cornell that explore “the intersection of aging, metabolism, and cancer and suggest we can modify diet to fight cancer in very impactful ways”:

● **“Estrone, the Major Postmenopausal Estrogen, Binds ERα to Induce SNAI2, Epithelial-to-Mesenchymal Transition, and ER+ Breast Cancer Metastasis,”** by Qureshi R., et al., from the November 2022 issue of *Cell Reports*

● **“Altered propionate metabolism contributes to tumor progression and aggressiveness,”** by Gomes A. P., et al., from the March 2022 issue of *Nature Metabolism*; and

● **“Tumor-Produced and Aging-Associated Oncometabolite Methylmalonic Acid Promotes Cancer-Associated Fibroblast Activation to Drive Metastatic Progression,”** by Li Z., et al., from the October 2022 issue of *Nature Metabolism*.

More From the Editors of *Endocrinology*



Several associate editors of *Endocrinology* also contributed. Hershel Raff, PhD, FAAAS, FAPS, professor of medicine, surgery, and physiology, and professor of Pharmacy School, at the Medical College of Wisconsin (MCW), and director of the Endocrine Research Laboratory at Aurora St. Luke's Medical Center, in

Milwaukee chose **“Vasopressin Expressed in Hypothalamic CRF Neurons Causes Impaired Water Diuresis in Secondary Adrenal Insufficiency”** from the August issue of *Endocrinology* by Yamagata S., et al.

“Impaired free water excretion and hyponatremia are common clinical findings in patients with secondary adrenal insufficiency,” Raff says. “Using adrenalectomized AVP-floxed mice, this group demonstrated the novel finding that CRF neurons in the PVH are responsible for the pathogenesis of impaired water excretion in secondary adrenal insufficiency.”

Raff’s honorable mentions include:

● **“Hybrid Functional Polymer-Enabled Multiplexed Chemosensor Patch for Wearable Adrenocortex Stress Profiling,”** by Yeasmin



S., et al., from the October issue of *ACS Applied Material Interfaces*

- **“Integrative Neurocircuits That Control Metabolism and Food Intake,”** by Brüning J. C., and Fenselau H., from the September issue of *Science*
- **“High-Resolution Daily Profiles of Tissue Adrenal Steroids By Portable Automated Collection,”** by Upton T. J., et al., from the June issue of *Science Translational Medicine*
- **“Hormone-Mediated Neural Remodeling Orchestrates Parenting Onset During Pregnancy,”** by Ammari R., et al., from the October issue of *Science*

Patricia L. Brubaker, PhD, FRSC, professor, Departments of Physiology and Medicine; Banting & Best Distinguished Scholar at the University of Toronto, in Ontario, credits **“Enhanced Endosomal Signaling and Desensitization of GLP-1R vs GIPR in Pancreatic Beta Cells,”** by Manchanda Y., et al., published in *Endocrinology* in May.

“Current interest in the use of GLP-1R-, GLP-1/GIP-, and GLP-1R/GIP/GCG-agonist therapy for type 2 diabetes and obesity is extremely high,” Brubaker says. “This paper enhances our understanding of the actions of GLP-1 and GIP through elucidation of their differential receptor dynamics in pancreatic beta cells.”

David R. Grattan, PhD, of the University of Otago, in Dunedin, New Zealand, gave **“Warm Responsive Neurons in the Hypothalamic Preoptic Area are Potent Regulators of Glucose Homeostasis in Male Mice,”** by Deem J. D., et al., published in *Endocrinology* in July, top billing. Grattan says, “This paper shows how elevation in ambient temperature can have

dramatic effects on glucose homeostasis, mediated by specific thermoregulatory circuits in the hypothalamus. This provides mechanistic understanding for why glucose tolerance and type 2 diabetes are more common in warmer climates. In a world threatened by global climate change, it is important to understand how rising temperature can influence these critical homeostatic circuits.”

Grattan’s honorable mentions go to two additional *Endocrinology* “studies that cast light onto longstanding questions about how stress and nutrient availability can influence reproduction”:

- **“Hypothalamic PVN CRH Neurons Signal Through PVN GABA Neurons to Suppress GnRH Pulse Generator Frequency in Female Mice,”** by McIntyre, C., et al., from June; and
- **“Fasting Modulates GABAergic Synaptic Transmission to Arcuate Kisspeptin Neurons in Female Mice,”** by Mansano N. D. S., et al., from November.

Najiba Lahlou, MD, PhD, of the Paris Descartes University in France particularly appreciated the work of Costaglio S. and Romitti M., with **“Progress Toward and Challenges Remaining for Thyroid Tissue Regeneration,”** published in *Endocrinology* in August being her number one pick.

For Lahlou, other work from the broader Costaglio team complements this study, including **“Emerging Technologies in Thyroid Biology: Pushing the Frontiers of Thyroid Research,”** published in *Molecular and Cellular Endocrinology* in May, and **“Thyroid-on-a-Chip: An Organoid Platform for In Vitro Assessment of Endocrine Disruption,”** from *Advanced Healthcare Materials* in March.



For honorable mentions, Lahlou chose **“New Horizons: Gonadotropin-Releasing Hormone and Cognition,”** out just last month in *JCEM* by Prévot V, Tena-Sempere M, and Pitteloud N., as well as a trio of studies from the Michel Salzet team:

- **“Pan-Genomic Regulation of Gene Expression in Normal and Pathological Human Placentas,”** by Apicelle C., et al., from the February issue of *Cells*;
- **“Challenges in Glioblastoma Research: Focus on the Tumor Microenvironment,”** by Bikfalvi A., et al. from the January issue of *Trends in Cancer*; and
- **“Neurotrauma Investigation Through Spatial Omics Guided by Mass Spectrometry Imaging: Target Identification and Clinical Applications,”** by Mallah K., et al., from the January issue of *Mass Spectrometry Reviews*.

From the Editor of the *Journal of the Endocrine Society*



For JES Editor-in-Chief Zeynep Madak-Erdogen, PhD, associate professor of nutrition; Sylvia D. Stroup Scholar at the University of Illinois Urbana-Champaign, **“In Situ Spatial Reconstruction of Distinct Normal and Pathological Cell Populations Within the Human Adrenal Gland”** was a stand-out, published in *Journal of*

the Endocrine Society in October by Fu, R. et al. Together with two other JES papers, **“Riluzole Suppresses Growth and Enhances Response to Endocrine Therapy in ER+ Breast Cancer,”** by Olukoya, A. O. et al. from September, and **“Progesterone Receptor–Mediated Regulation of Cellular Glucose and 18F-Fluorodeoxyglucose Uptake in Breast Cancer,”** by Salem, K. et al. from February, Madak-Erdogen says, “It is fascinating to see all the different cell populations in the adrenal gland and associated tumors. I am looking forward to more studies like this to have a full picture of endocrine organs.”

More from *Journal of the Endocrine Society* Editors



Ana Claudia Latronico, MD, PhD, head professor of the Endocrinology and Metabolism Division of São Paulo University in Brazil, nominates **“Novel MKRN3 Missense Mutations Associated With Central Precocious Puberty Reveal Distinct Effects on Ubiquitination,”** by Magnotto J. C., et al., from the June issue of *JCEM*.

“Loss-of-function mutations in the maternally imprinted MKRN3 gene are the most common known genetic etiology of central precocious puberty,” explains Latronico. “Magnotto J. C., et al., described novel MKRN3 mutations in girls with central precocious puberty that are located at different domains of the protein and impacted the patterns of ubiquitination. These findings suggested distinct molecular mechanisms by which the loss of MRKN3 results in early pubertal onset.”

Latronico awards honorable mention to three additional studies:

- **“MKRN3 Inhibits Puberty Onset via Interaction with IGF2BP1 and Regulation of Hypothalamic Plasticity,”** by Naudé L., et al., from the April issue of *JCI Insight*;
- **“Rare Variants in the MECP2 Gene in Girls with Central Precocious Puberty: a Translational Cohort Study,”** by Canton A. P. M., et al., from the June issue of *The Lancet Diabetes and Endocrinology*; and
- **“GnRH Replacement Rescues Cognition in Down Syndrome,”** by Manfredi-Lozano M., et al., from the September 2022 issue of *Science*.

Robert D. Blank, MD, PhD, of the Garvan Institute of Medical Research in Darlinghurst, Australia, and the Medical College of Wisconsin in Milwaukee, found **“Sex Differences in Pancreatic β -Cell Physiology and Glucose Homeostasis in C57BL/6J Mice,”** particularly interesting. Published in *Journal of the Endocrine Society* in July, by Jo A., et al., Blank says this study “expanded the scope of sexual dimorphism in an unexpected direction, and the ubiquity of the phenomenon has vast importance.”

Rebecca B. Riggins, PhD, of the Lombardi Comprehensive Cancer Center at the Georgetown University Medical Center in Washington, D.C., selected Ma L., et al.'s, **"The Liver X Receptor Is Selectively Modulated to Differentially Alter Female Mammary Metastasis-Associated Myeloid Cells,"** from the May 2022 issue of *Endocrinology*, saying, "this is a really elegant study that provides a strong rationale for developing a new class of selective nuclear receptor modulating drugs."

From the Editor of *The Journal of Clinical Endocrinology and Metabolism*



Editor-in-Chief of JCEM, Paul M. Stewart, MD, FRCP, FMedSci, executive dean and professor at the University of Leeds School of Medicine in the United Kingdom says, **"Efficacy and Safety of Fezolinetant in Moderate to Severe Vasomotor Symptoms Associated With Menopause,"** by

“ This is really a sweeping mechanistic and translational story that I predict will have a high impact on the field and on patients with lymphangi leiomyomatosis (LAM). **Estrogen signaling promotes LAM via activation and expansion of neutrophils within the bone marrow, which in turn drive the disease.**”

— CAROL A. LANGE, PHD, EDITOR-IN-CHIEF, *ENDOCRINOLOGY*

Johnson K. A., et al., from the July issue of JCEM deserves special attention "...because its journey defines what JCEM is all about."

Stewart further elucidates this journey: "Experimental medicine-based research published in JCEM going back several years defined the critical role for neurokinin B (NKB) acting via the neurokinin 3 receptor (NK3R) in controlling gonadotrophin-releasing hormone secretion in humans. Much of this work stemmed from innovative clinical investigation of patients with non-syndromic hypogonadotropic hypogonadism. Subsequent work showed that the NKB/NK3R signaling pathway in the hypothalamus plays a key role in thermoregulation. Fezolinetant has been developed as a selective NK3R antagonist, and this seminal clinical trial paper published in JCEM helped the evidence base for FDA approval of fezolinetant as an oral medication to treat moderate to severe vasomotor symptoms (or "hot flashes") caused by the menopause. The paper involves investigators from across North America and Europe and a strong industry partnership to tackle what is an important women's health issue. It is highly likely to be the most downloaded and highest cited JCEM original clinical article for 2023."

More from JCEM Editors



For Deputy Editor Elizabeth N. Pearce, MD, MSc, Boston University School of Medicine, Section of Endocrinology, Diabetes, and Nutrition, in Mass., **"Proof-of-Concept and Randomized, Placebo-Controlled Trials of an FcRn Inhibitor, Batoclimab, for Thyroid Eye Disease,"** by

Kahaly G. J., et al., and published in June in JCEM, rose to the top.

"This is a report of two small trials of a novel agent, batoclimab, a monoclonal antibody that blocks neonatal fragment crystallizable receptor (FcRn)-mediated IgG recycling. This study demonstrated a marked decrease in TRAb and IgG titers and clinical improvements in patients with active thyroid eye disease (TED) who were treated with batoclimab, results that will inform forthcoming phase 3 trials. The possibility of an entirely new approach to the treatment of TED is exciting," she says.

Pearce also selected two honorable mentions.

"Molecular Profiling of 50 734 Bethesda III-VI Thyroid Nodules by ThyroSeq v3: Implications for Personalized Management," by Chiose S., et al., from the November issue of JCEM stood out



for “[improving] our understanding of the genetic landscape of biopsied nodules.”

“This paper reports detailed genetic information obtained from over 50,000 thyroid nodules, demonstrating that about two-thirds of Bethesda III and IV nodules lacked genetic alterations (and thus were likely benign), and most of the others were neoplasms driven by RAS-like genetic alterations,” Pearce says. “In contrast, most Bethesda V and VI nodules had BRAF-like alterations and were likely to harbor intermediate- and high-risk mutations.”

From Salas-Lucia F, et al., **“Effect of the Fetal THRB Genotype on the Placenta,”** from the September issue of JCEM: “This is a report describing placentas from two different pregnancies in a woman with a THRB mutation,” explains Pearce. “In one of the pregnancies, the fetus also had the THRB mutation, while in the other pregnancy, the fetus was unaffected. Interestingly, in the placenta of the unaffected fetus, there were alterations in deiodinases, thyroid hormone transporters, and thyroid hormone nuclear receptors, which presumably served to protect the fetus from the toxic effects of thyroid hormone excess. This provides mechanistic insight into the placenta’s complex role in mediating the effects of maternal thyroid hormone on the fetus.”

Deputy editor Raghu G. Mirmira, MD, PhD, professor of medicine; vice chair for research, director, Translational Research Center at the University of Chicago, in Ill., gave three JCEM papers top billing, each about type 2 diabetes. About **“Predictors of Metformin Failure: Repurposing Electronic Health**

Record Data to Identify High-Risk Patients,” by Bielinski S. J., et al., from July, Mirmira says, “This study analyzed data from 22,047 patients with diabetes who started metformin at three sites. The study found that 43% of them failed metformin within 18 months. The main predictor of metformin failure was the initial HbA1c level. Other predictors were age, sex, and race/ethnicity. The study proposed a model to stratify patients by their risk of metformin failure and might provide a clinical tool to assess the best approaches to the initial management of type 2 diabetes.”

Mirmira’s honorable mentions include **“Ertugliflozin Delays Insulin Initiation and Reduces Insulin Dose Requirements in Patients with Type 2 Diabetes: Analyses from Vertis CV,”** by Dagogo-Jack S., et al., from August. “The VERTIS CV trial tested the cardiovascular safety of ertugliflozin, an SGLT2 inhibitor, in patients with heart disease. The main findings were that ertugliflozin reduced the need for insulin therapy, delayed the start of insulin therapy by more than a year, and lowered the dose of insulin therapy in patients who were already using it, compared to placebo. Ertugliflozin did not increase the risk of low blood sugar episodes. These results suggest that ertugliflozin may help patients with type 2 diabetes and heart disease manage their blood sugar levels more effectively and safely,” he says.

From Borisov A. N., et al., out just last month, is **“Canagliflozin and Metabolic Associated Fatty Liver Disease in Patients with Diabetes Mellitus: New Insights from Canvas.”** Mirmira says, “In a study on patients with advanced type 2 diabetes and high cardiovascular risk, the SGLT-2 inhibitor canagliflozin



Experimental research published in JCEM going back several years defined the critical role for neurokinin B (NKB) acting via the neurokinin 3 receptor (NK3R) in controlling gonadotrophin-releasing hormone secretion in humans. **Much of this work stemmed from innovative clinical investigation of patients with non-syndromic hypogonadotropic hypogonadism.**”

— PAUL M. STEWART, MD, FRCP, FMEDSCI, EDITOR-IN-CHIEF, *THE JOURNAL OF CLINICAL ENDOCRINOLOGY AND METABOLISM*

showed promising results. It improved liver-related outcomes, with 35.2% of patients on canagliflozin experiencing a significant improvement in liver enzyme levels compared to 26.4% in the placebo group. Canagliflozin also demonstrated positive effects on liver fibrosis and led to a notable weight reduction. These findings suggest that canagliflozin could be a valuable treatment option for patients with type 2 diabetes and metabolic dysfunction-associated fatty liver disease (MAFLD).”

Verónica Mericq, MD, of the Institute of Maternal and Child Research, School of Medicine, University of Chile in Santiago, highlights two papers to which she contributed from JCEM for their important updates in growth. One is **“Management of Growth Disorders in Puberty: GH, GnRH α , and Aromatase Inhibitors: A Clinical Review,”** by Mauras N., Ross J., and Mericq V., from January, the other is **“International Consensus Guideline on Small**

for Gestational Age: Etiology and Management from Infancy to Early Adulthood,” by Hokken-Kelega A. C. S., et al., published in May.

Mericq also gives another honorable mention to **“New Horizons: Gonadotropin-Releasing Hormone and Cognition,”** from the November issue of JCEM by Prévot V., Tena-Sempere M., and Pitteloud N., saying that “this particular manuscript describes novel actions of GnRh in neural circuits controlling brain maturation, odor discrimination, and adult cognition. These novel functions highlight potential areas that may be affected in children and adults using GnRh-A.”

“Efficacy and Safety of Fezolinetant in Moderate to Severe Vasomotor Symptoms Associated With Menopause,” by Johnson K. A., et al., from the July issue of JCEM got another nod, this time from Whitney S. Goldner, MD, professor, Division of Diabetes, Endocrinology and Metabolism, at the University of Nebraska Medical Center in Omaha. Goldner says: “The reason I chose this article is because it represents a new therapy for women who are in menopause who are having bothersome vasomotor symptoms. This is exciting since many of our current options for therapy are suboptimal and do not completely alleviate their symptoms. It was well tolerated and has the potential to become a great option for women with menopausal vasomotor symptoms, especially if hormonal therapy is contraindicated.”

David J. Handelsman, PhD, professor of medicine, Concord Clinical School, ANZAC Research Institute, at the University of Sydney; Department of Andrology, Concord Hospital, in Australia liked this JCEM paper from July by Equey T., et al.: **“Longitudinal Profiling of Endogenous Steroids in Blood Using the Athlete Biological Passport Approach,”** applauding its large prospective study design and for “using a Bayesian approach with specific targeting for an important antidoping objective.”

Handelsman’s honorable mentions are also from JCEM:

● **“Efficacy and Safety of Fezolinetant in Moderate to Severe Vasomotor Symptoms Associated With Menopause,”** by Johnson K. A., et al., from July;*

● **“Ketone Body Infusion Abrogates Growth Hormone-Induced Lipolysis and Insulin Resistance,”** by Høgild M. L., et al., from February; and

**Editor’s Note:* “Efficacy and Safety of Fezolinetant in Moderate to Severe Vasomotor Symptoms Associated With Menopause,” by Johnson, K. A., et al., from the July issue of JCEM was cited three different times by Endocrine Society journal editors!



● **“Serum Insulin-like Factor 3, Testosterone, and LH in Experimental and Therapeutic Testicular Suppression,”** by Albrethsen J. et al., from October.

Jens Otto Lunde Jørgensen, PhD of the Aarhus University and Aarhus University Hospital, in Denmark, highlights **“The Socioeconomic Consequences of Cushing Syndrome: A Nationwide Cohort Study,”** by Ebbehøj A., et al., including Jørgensen himself, from the July 2022 issue of *JCEM*. “It is quite interesting since it documents in a new and intriguing way that Cushing syndrome exerts distinct adverse effects on socioeconomic outcomes, which are documented in an unbiased manner. Moreover, these effects are detectable several years before diagnosis. This illustrates the severity of the condition and demonstrates in an interesting manner that the patients have symptoms many years before the diagnosis is made,” he said.

From the Editor of *JCEM Case Reports*



William F. Young, Jr., MD, MSc, professor of medicine in the Mayo Clinic College of Medicine and Science in Rochester, Minn., says, “Choosing only one article for this Eureka! theme is nearly impossible. We have had so many great education cases published in the inaugural year of *JCEM Case Reports*! However, in the spirit of this

assignment, I chose: **‘A False Pituitary Tumor’** from the May 2023 issue of *JCEM Case Reports* by Hurtado, et al.”



Young says, “The authors share a case of pituitary enlargement, the cause of which all endocrinologists should be aware! Due to a cerebrospinal fluid (CSF) leak, the MRI scan may show the pituitary gland to be enlarged and diffusely enhancing following gadolinium administration. The authors discuss that this finding is an anatomical adaptation due to CSF volume depletion. Orthostatic headaches are a strong clue for the clinician to suspect that a CSF leak may be responsible for an apparent sellar mass. In addition, the non-pituitary findings on MRI are key. Prominent abnormal features include diffuse meningeal enhancement, sagging of the brain with tonsillar herniation and descent of the brainstem, engorgement of cerebral venous sinuses, and decrease in the size of cisterns and ventricles.” [Editor’s Note: This case was also highlighted in the October *Endocrine News* feature, “Stranger Things: A Look at Some Unusual Cases from *JCEM Case Reports*.]

Young’s honorable mention articles, each from the November issue of *JCEM Case Reports*, include:


● **“A Case of Severe Lactation Ketoacidosis in a Nondiabetic Mother on a Ketogenic Diet,”** by Borhan M., et al. Young comments:

“The authors report the case of a 31-year-old mother without diabetes mellitus who presented with life-threatening lactation ketoacidosis, after following a ketogenic diet while exclusively breastfeeding her newborn baby. The authors reminded us that lactating women are at risk of lactation ketoacidosis due to the increased calorie demand during breastfeeding, particularly if there is concomitant starvation, such as that observed in ketogenic diet regimens.”

● **“Molar Pregnancy Induced Hyperthyroidism — The Importance of Early Recognition and Timely Preoperative Management,”**

by Walfish L., et al. Young says: “This case highlights the importance of recognizing the link between gestational trophoblastic disease (GTD) and thyrotoxicosis — a recognition that is key to allow for timely initiation of appropriate preoperative treatment to prevent thyroid storm and also provide curative treatment for the GTD.”

● **“Bilateral Cortical-sparing Adrenalectomy for the Treatment of Bilateral Aldosterone-producing Adenomas,”** by Nanba K., et al.

Young explains, “The authors report a case of bilateral aldosterone-producing adenomas that were successfully resected by bilateral partial adrenalectomy. Long-term postsurgical follow-up in this patient documented clinical and biochemical resolution of primary aldosteronism without need for glucocorticoid replacement therapy.” 

– HORVATH IS A BALTIMORE, MD. – BASED FREELANCE WRITER, A FREQUENT AND PROLIFIC CONTRIBUTOR TO *ENDOCRINE NEWS*, AND HAS COMPILED AND WRITTEN THE “EUREKA!” ARTICLES ANNUALLY FOR NINE YEARS.



With a keen interest in hormonal research, Emily Hiltz, PhD, has become passionate about the dangers of endocrine-disrupting chemicals, especially in beauty products. She talks to *Endocrine News* about a new app she's developing to help shield Black women from dangerous products they could be using every day.

The Root OF THE PROBLEM

BY COLLEEN WILLIAMS

Warning consumers about EDCs from the laboratory bench

A new mobile app developed by Emily Hilz, PhD, a postdoctoral researcher at the University of Texas at Austin, aims to empower Black women as consumers to reduce endocrine-disrupting chemicals (EDC) exposure risk by linking chemicals in their personal care products with their suspected adverse health outcomes.

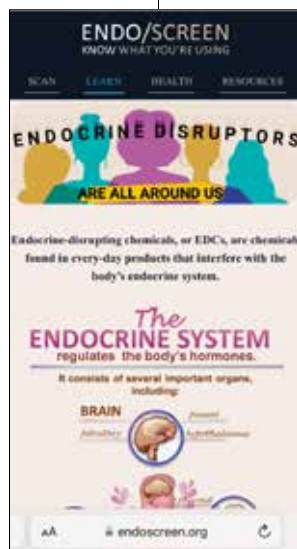
Hilz recently won Phase 1 of the Department of Health and Human Services (HHS) Endocrine-Disrupting Chemicals Innovator Award Competition to continue developing the app. The competition was created to identify gaps in knowledge and innovative solutions to improving women's health by reducing EDC exposure risk. The Phase 1 winners received up to \$40,000 to expand their projects.

Hilz is a researcher in Andrea Gore's lab where she studies the effects of EDCs on the brain and behavior, and she recently presented an animal study at **ENDO 2023** on how EDCs may raise the risk of cognitive disorders in future generations. According to Gore, upon joining her lab Hilz "established new sophisticated behavioral

analyses to determine multigenerational effects of exposures to polychlorinated biphenyls (PCBs), a class of endocrine-disrupting chemical (EDC), in our rat model," she says. "She is currently seeking to understand which molecular pathways in the brain were most affected by PCB exposures to cause behavioral changes through deep sequencing and bioinformatics."

"Emily is particularly concerned about exposure of vulnerable populations to EDCs — those early in development, and members of underrepresented groups," Gore continues, adding "Emily has been a great leader, mentor, and role model, with a team of undergraduate students working under her guidance. The graduate students turn to her often for advice on a range of topics, and the lab has become a better place since she joined us two years ago."

According to Hilz, the app is a passion project that she developed with her friends that has gotten a lot more attention than she originally anticipated. The researchers are still working on some features, but the app is currently available at: endoscreen.org.



“ A lot of products are assumed innocent until proven guilty, and it needs to be the other way around. We should assume these chemicals are causing disruptive health outcomes and prove they’re not before bringing them to market.”

— EMILY HILZ, PHD, POSTDOCTORAL RESEARCHER, GORE LAB, DEPARTMENT OF PHARMACOLOGY, UNIVERSITY OF TEXAS, AUSTIN, TEXAS

Hilz (right) poses with her supervisor in the Gore Lab at the University of Texas at Austin, Andrea Gore, PhD, as they celebrate her Outstanding Abstract Award at ENDO 2023.



Endocrine News recently interviewed Hilz about the app and her work to reduce EDC exposure in Black women:

***Endocrine News:* What was your inspiration for developing the app, and how does it work?**

EMILY HILZ: I had the idea for the app prior to hearing about the competition and had spoken to some friends of mine who are now the lead developers about doing this as a passion project where we could all come together to create a tool to help people. I got a lot of inspiration for the app from the talks I heard at an Environmental Endocrine Disruptors conference.

I wanted to create an app that both scans the ingredients in beauty products for EDCs and shares the results with the user so they can take on a more active role in their health. We wanted to focus on the Black community since they are more at risk and

products marketed to Black women are a significant source of EDC exposure.

The way the app works is you take a picture of your product's ingredient label, and the app will read those words and give an output based on the database that we built. The output tells you which chemicals in your products are known EDCs and their associated health outcomes based on current research. It also tells you the number of articles that link that chemical to a health outcome, so you can get an idea of the relative certainty. Users can now read about research related to chemicals they detect in their products and access our educational pages to learn more about EDCs.

EN: Why are you so passionate about this issue, and why do you think Black women are disproportionately affected by EDCs?

HILZ: I've always been interested in hormonal research. When I joined Dr. Gore's lab, I didn't fully understand the repercussions of EDCs. I've been in the lab two years now, and as I've gotten more involved in the field, it's shocking and upsetting to me how prevalent and underregulated these chemicals are.

I'm passionate about raising more awareness around EDCs and want to add my voice to the many voices at the Society that are calling for action because this is such a serious health crisis.

Some reasons Black women may be inordinately exposed to EDCs include socioenvironmental factors like natural hair discrimination. Chemical straighteners and hair relaxers are rife with EDCs. There is also colorism and the use of skin lightening creams that are similarly disruptive. Some research suggests that Black women are also more likely to use douches, which have EDCs, and reinforce the stigma around feminine hygiene. Other factors include things like living in areas that may be close to EDC producers and consumption of foods that are packaged with EDCs.

EN: Can you share some highlights of working with Dr. Andrea Gore and how she has been a mentor to you?

HILZ: My role in the Gore lab is as a postdoctoral fellow. I received a national research service award (F32) from the National Institute of Environmental Health Sciences to train with Dr. Gore and to conduct my own research exploring the neurobehavioral effects of intergenerational EDC exposure. Andrea has been a great mentor to me, introducing me to the

important field of EDC research and helping me secure funding and supporting my training as a physiologist and molecular biologist. Andrea is a passionate mentor who emphasizes diverse perspectives and inspires great work from the people around her.

EN: Can you expand on the research you are currently working on related to EDC exposure?

HILZ: My F32-funded research has revealed that behavioral effects of EDCs seem to emerge later along the genetic line (e.g., grandchildren of exposed individuals show cognitive disruptions). Currently, we're exploring the molecular underpinnings of those effects — using 3 targeted sequencing (TAGseq) to quantify differentially expressed genes in the brains of grandchildren of EDC-exposed rats. This is data we're delving deeper into every day — but it seems EDCs alter brain myelination and synaptic signaling to cause those cognitive changes. It seems the behavioral effects are more robust in females, but the biological changes are more apparent in males.

I work on many projects with the Gore lab. We'll be publishing two papers of six generation behavior experiments with me as lead author later this year that shows a) repeated EDC exposure results in increasingly robust behavioral changes; b) those changes are sex specific; and c) parental lineage and the mixture of EDCs we're exposed to determines our health outcomes. We just began using a new model (neuromix) where we expose rats to complex EDC mixtures that are much more environmentally relevant (as humans are exposed to many different EDCs all at once). My work in that project involves both behavior and molecular work, as well as using mass spectrometry to determine if and how much of the EDC mixture components are making it into the brain and the gonad (and maybe directly altering the genetic makeup of those tissues in a way that ultimately gets carried along to offspring). Of course, a lot of hands touch these projects besides mine.

EN: What's next for the app?

HILZ: We are working on the capability to scan product barcodes to make the app easier to use. We've also added some optional demographic survey information that users can fill out, which we hope to be able to use to learn more about patterns of exposure to endocrine disruptors as well as efficacy of the web app as an educational tool.

We plan to get more Black women using the app by reaching out to the local community, Black interest groups, and Black beauty



At ENDO 2023, Hilz presented her animal study that detailed how EDCs could pose significant risks to future generations.

“ I know it can feel hopeless and overwhelming, and we don’t want people to be discouraged and think *‘if everything is toxic, nothing is toxic.’* Even small exposure changes are associated with better health, so while you can’t get rid of every EDC in your environment, you can still reduce your exposure and improve your long-term health.”

— EMILY HILZ, PHD, POSTDOCTORAL RESEARCHER, GORE LAB, DEPARTMENT OF PHARMACOLOGY, UNIVERSITY OF TEXAS, AUSTIN, TEXAS

influencers. We’re also working on a viral online campaign on whether or not your skincare routine passes the endocrine challenge to grab people’s attention.


EN: What are a few simple steps people can take to reduce EDC exposure?

HILZ: A good start would be buying fragrance-/dye-free products and being careful with products that say phthalates and BPA free. In many cases, these harmful chemicals are being substituted with other chemicals that are just as if not more dangerous. Outside of personal care products, move from plastic to glass Tupperware and wash your hands as much as possible!

I know it can feel hopeless and overwhelming, and we don’t want people to be discouraged and think *‘if everything is toxic, nothing is toxic.’* Even small exposure changes are associated with better health, so while you can’t get rid of every EDC in your environment, you can still reduce your exposure and improve your long-term health.

EN: Anything else you want to add?

HILZ: A lot of products are assumed innocent until proven guilty, and it needs to be the other way around. We should assume these chemicals are causing disruptive health outcomes and prove they’re not before bringing them to market.

If you’re interested in working with the Society to raise awareness around EDCs and advocate for better regulation, visit: endocrine.org/topics/edc/what-you-can-do. 

— WILLIAMS IS THE SENIOR COMMUNICATIONS MANAGER AT THE ENDOCRINE SOCIETY. SHE WROTE ABOUT THE ENDOCARES EVENT DURING ENDO 2022 IN THE SEPTEMBER 2022 ISSUE OF ENDOCRINE NEWS.



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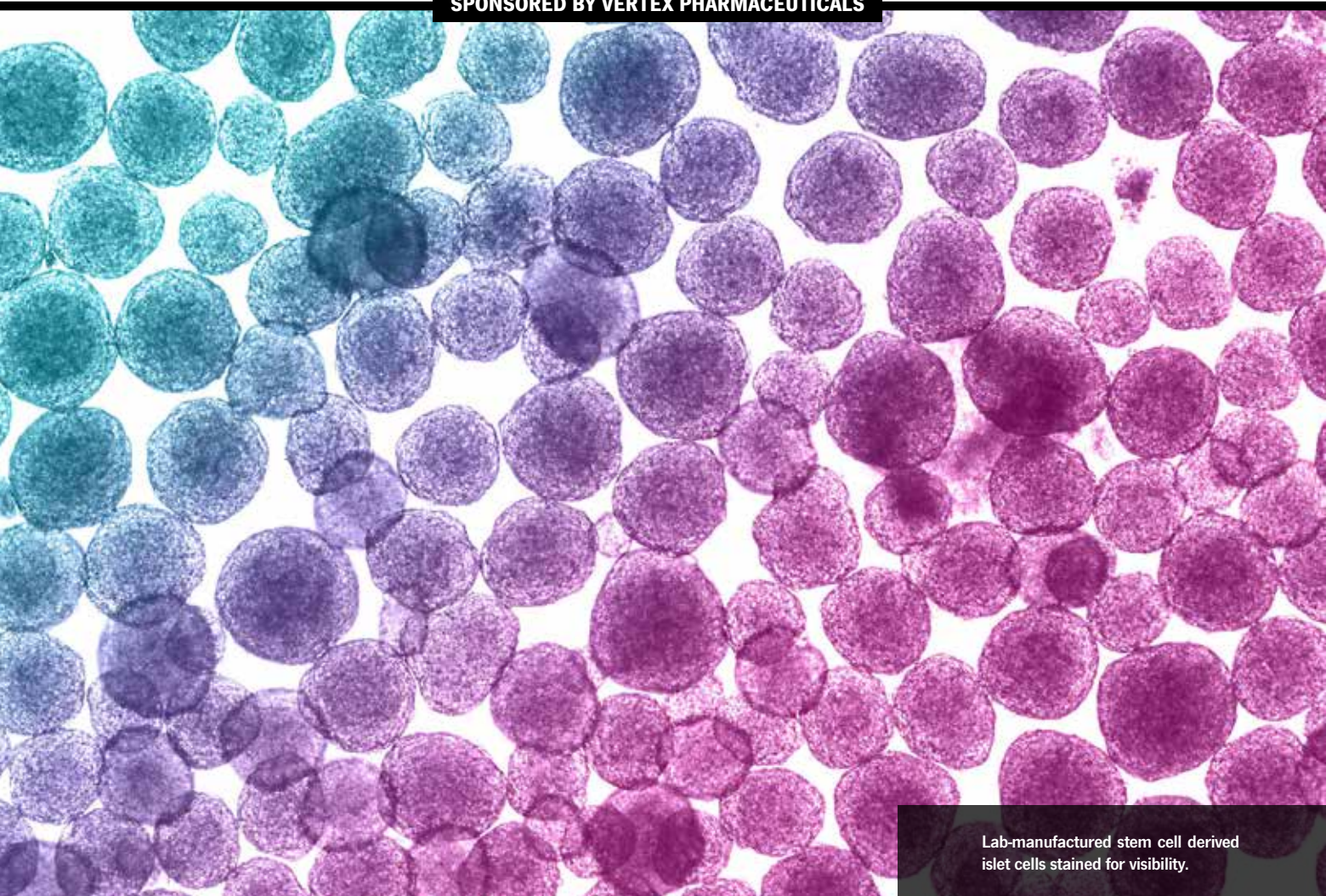
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ENDOCRINE NEWS | DECEMBER 2023 | 27

From the Clinic BY TINA GUPTA, MD TO BIOTECH

How Vertex hopes to transform the treatment landscape for type 1 diabetes

SPONSORED BY VERTEX PHARMACEUTICALS



Lab-manufactured stem cell derived islet cells stained for visibility.

Endocrine Society member Tina Gupta, MD, always possessed a passion for helping her patients with type 1 diabetes overcome their daily struggles. She gives *Endocrine News* an exclusive account of why she made the move to the biotech industry by joining Vertex Pharmaceuticals, thus ensuring that her enthusiasm for patient-centered care can now help as many people as possible living with type 1 diabetes.

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“I went into medicine to help as many patients as possible, and my passion for diabetes care led me to specialize in endocrinology.”

he time I was in clinic helping my patients with type 1 diabetes motivated me every day. I saw the struggles that they experienced and the burden that type 1 diabetes posed on their daily lives. However, in many ways, my patients were benefitting from several advancements in the field of diabetes medicine. They were living in a world with rapid-acting insulins, continuous glucose monitors, insulin pumps, and hybrid closed loop systems. Despite access to these therapies and technologies, the majority of patients were not able to achieve the clinical outcomes I wanted to see as their endocrinologist. Only about one in four people with type 1 diabetes achieve a target HbA1c of <7.0%, which speaks to how complicated and challenging this disease is to manage.

As an endocrinologist, beyond the patients I managed with cystic fibrosis-related diabetes (CFRD), I wasn't very familiar with cystic fibrosis and the latest advancements in treatments by a Boston-based company, Vertex Pharmaceuticals. Since then, I have learned that Vertex has approved medications to treat the underlying cause of CF for up to 90% of the CF patient populations and have clinical trials for the remaining 10%.

When I learned that Vertex was planning to use that same relentless commitment to potentially treat the underlying cause of type 1 diabetes, I knew I needed to be part of it. The decision to leave my practice, my patients, and my colleagues was a difficult one. In a way, I felt like I was going into the unknown, but I strongly believed Vertex had the potential to fundamentally change the treatment landscape for people living with type 1 diabetes.

Vertex entered the type 1 diabetes space in 2019 with the acquisition of Semma Therapeutics, but the real story goes back decades earlier. The founder of Semma Therapeutics was Doug Melton, PhD. At the time he founded the company, he was at Harvard University where he had spent many years focused on researching type 1



Tina Gupta, MD

“

No longer getting to care for my patients directly has been difficult. However, as we continue to research treatments for those living under the relentless demands of their type 1 diabetes diagnosis, I remember their stories and hold hope for the future.

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diabetes treatments. Motivating this commitment was the fact that, more than 30 years prior, Melton's infant son was diagnosed with type 1 diabetes (his daughter would also be diagnosed years later).

Melton's wife, Gail, was carrying the daily burden of the disease for their family, working nonstop to monitor and manage the relentless demands of type 1 diabetes. She had to prick her son's fingers and toes to check his blood sugar multiple times a day and to inject him with insulin to control his blood glucose levels. While she managed the daily burden for their family, Melton worked tirelessly in the lab. He turned away from his research on frog biology and refocused his energy on researching how to turn stem cells into islet cells in the lab with the hope of replacing the insulin-producing cells that have been destroyed in people with type 1 diabetes.

After decades of research, Melton and his small team found a way to manufacture a stem cell into an islet cell in the lab that was glucose sensing and insulin producing. The team unlocked the “recipe” of which genes and functions to turn off and on and generated billions of fully differentiated, insulin-producing beta cells grown from stem cells in the laboratory.

Conducting research with the lab-manufactured islet cells and bringing them into human clinical trials is the next big challenge. Melton knew his small Semma team would need some assistance. When he ran into one of his former students, David Altshuler, MD, PhD, in Boston in 2019, he shared the news that his team had produced islet cells that were secreting insulin in the lab. Altshuler is the chief scientific officer at Vertex and reported the milestone to leaders within the company who quickly acquired Semma Therapeutics. Vertex has long focused on developing potentially transformative new therapies for diseases where they have a deep understanding of the underlying causal biology. Semma's investigational research, which aimed to manufacture islet cells to replace the ones missing in a person living with type 1 diabetes, aligned with Vertex's scientific strategy. Melton was confident that Vertex, with its science, technology, manufacturing resources, and capabilities, would be in a position to advance cell therapy approaches in type 1 diabetes.

Fast forward to today: Vertex has continued to advance and invest in its investigational type 1 diabetes program. Melton left his lab at Harvard in 2022 to join the Vertex team, and, that same year, Vertex acquired ViaCyte, a biotechnology company focused on researching stem cell-derived cell replacement therapies as a potential treatment option for type 1 diabetes.

The type 1 diabetes team at Vertex has since grown significantly and advanced two investigational programs for type 1 diabetes to clinical trials. One is targeted for people with type 1 diabetes with impaired hypoglycemic awareness and a history of severe hypoglycemia. This approach requires ongoing immunosuppression with the aim to protect the transplanted cells from the body's immune cells. The other clinical trial is for the broader type 1 diabetes population. Vertex is investigating the same transplanted cells, but encapsulated in a proprietary device that is surgically implanted



in the body. The device is designed to shield the cells from the body's immune system. This therapy is being investigated without the use of immunosuppressive therapy. Both clinical trials are actively enrolling adults living with type 1 diabetes in the U.S. and outside the U.S.

What Is Cell Therapy and Cell Encapsulation?

Cell therapies may be able to replace or repair damaged, mutated, or missing cells in a person's body with the goal of treating the underlying cause or condition. They are being developed using a variety of different cells depending on the objective, including blood cells, pancreatic cells, or nerve cells. These cells may be made from pluripotent stem cells — a cell that is able to replicate and differentiate, or convert, into any specific cell type in the body.

In addition to cell therapy, cell encapsulation is being investigated to provide protection from the immune system by placing enough living cells to be potentially therapeutic within a specially designed encapsulation device. The encapsulation devices are designed with the goal of behaving like natural tissue by using a special barrier that is intended to prevent immune cells from passing through but allows for vascularization.

Vertex Pharmaceuticals, Boston, Mass.

For more information
about our type 1
diabetes research,
please visit:
www.vrtx.com

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As a clinician, I was at ease talking about HbA1c, continuous glucose monitor (CGM) metrics such as time in range, insulin pumps, and more. So, when I first began learning about what cell therapy and cell encapsulation are, it felt like I was reading science fiction. The concept that one could potentially restore endogenous insulin production to someone living with type 1 diabetes was interesting.

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Cell encapsulation is an innovative tool that has the potential to help treat the underlying cause of diseases such as certain types of cancers, hemophilia, Parkinson's disease and type 1 diabetes, among others, with the aim of preventing the immune system from detecting and potentially destroying the cells intended to treat these diseases.

Uncompromising Commitment to Type 1 Diabetes

As a clinician, I was at ease talking about HbA1c, continuous glucose monitor (CGM) metrics such as time in range, insulin pumps, and more. So, when I first began learning about what cell therapy and cell encapsulation are, it felt like I was reading science fiction. The concept that one could potentially restore endogenous insulin production to someone living with type 1 diabetes was interesting.

Realizing that this science is currently being researched and that I have a chance to be part of the effort to potentially bring this to my patients if approved has been incredible.

I recall a time in clinic when I met a young man recently diagnosed with type 1 diabetes. He had been planning to become a pilot, but his diagnosis derailed that plan as being on insulin treatment prohibited him from entering the training program. I have never forgotten how his whole vision for his future changed due to the results from a single lab test.

Over the course of my career, I've spent many hours counseling patients who have been overwhelmed and in despair about the unrelenting burden of their disease. While we endocrinologists provide care and guidance to these individuals periodically throughout the year, people living with type 1 diabetes must manage their disease 24 hours a day, seven days a week, for their entire lives. They must give themselves insulin multiple times a day to keep their blood sugar from being too high. However, there's a delicate balance between blood sugar that's too high (not enough insulin) and too low (too much insulin), and these levels are impacted by just about every aspect of daily life — diet, exercise, sleep, stress, and more.

Abnormally high or low blood sugar levels can be immediately life-threatening, and chronic high blood sugar levels lead to increased risk of serious long-term complications including damage to the eyes, kidneys, nervous system, and heart.

Insulin treatment and technologies like insulin pumps and CGMs have improved the lives of people with type 1 diabetes, their families, and caregivers, but there is more work to do to hopefully develop a treatment that would target the underlying cause of the disease. At Vertex, our researchers and scientists are investigating potential cell therapies to treat type 1 diabetes. However, our work in the lab is not enough. Our entire team is working ceaselessly to better understand the physical and psychological burdens of living with type 1 diabetes. Whether it is the constant decision making involved in insulin injections and blood sugar monitoring or dealing with and troubleshooting the multiple demands of CGM and pump technologies, it is vital



Doug Melton, PhD (third from left), joined the Vertex team in May 2022.

our team understand that daily experience as best we can to help us reach our goal of bringing transformative therapies to people with type 1 diabetes.

Patients Come First

One of the things that is unique about the Vertex's drug development process is that it is always about the patients. People living with type 1 diabetes are at the heart of everything we do. So, what are the highest impact ways to better understand what it is like to live with type 1 diabetes? It starts by establishing relationships and building trust, by talking to as many people living with type 1 diabetes as possible, by involving their caregivers and healthcare teams, and by learning from patient advocacy groups. To this end, we have a type 1 diabetes patient and caregiver panel that meets throughout the year to provide insights and feedback to our team on a variety of topics so we can better understand the patient's experience, as well as learn more about their needs. Finally, we continue to work with the type 1 diabetes patient advocacy community, learning about their efforts to support, educate, and advocate for people with type 1 diabetes and understanding more about how we can help support the type 1 diabetes community.

Vertex's commitment to patients is strong and has been the guiding light that has gotten us to where we are. I share that commitment and know it is my responsibility to take what I learned from my patients, mentors, and colleagues and amplify their voices and needs. Vertex truly understands the importance of going beyond research and development to engage in advocacy, awareness, and community support, and those living with type 1 diabetes, like my former patients, are at the heart of everything we do. As we advance our work in type 1 diabetes, we will continue to look to the patient and healthcare professional community for education, inspiration, and motivation.

No longer getting to care for my patients directly has been difficult. However, as we continue to research treatments for those living under the relentless demands of their type 1 diabetes diagnosis, I remember their stories and hold hope for the future.

My wish would be to one day sit with my former patients and recall how we used to review their pumps and CGMs, recalculate their doses. In short, I hope to someday talk about how patients are treated today in historical terms. ^{BN}

GUPTA IS AN ASSOCIATE MEDICAL DIRECTOR ON THE TYPE 1 DIABETES MEDICAL AFFAIRS TEAM AT VERTEX PHARMACEUTICALS. She received her BA and MD from the University of Tennessee. Her medical education continued at Boston Medical Center where she completed her internal medicine residency, followed by a fellowship for endocrinology, diabetes, and metabolism at Brigham and Women's Hospital. Prior to joining Vertex, she worked as a clinical endocrinologist at Massachusetts General Hospital, specializing in diabetes, bone metabolism, and adrenal disorders.

BY GLENDA FAUNTLEROY SHAW

Meet Three of the 2023 CoDI Video Contest Winners

careers *in focus*

The Endocrine Society's Committee on Diversity and Inclusion (CoDI) launched The Future of Endocrinology Video Competition this year to further prioritize diversity, equity, and inclusion throughout the academic cycle. *Endocrine News* chatted with three of this year's contest winners about their own goals and the importance of such programs.





ARTHUR REGISTRE

2023 CODI VIDEO
CONTEST WINNER

CUNY GRADUATE
SCHOOL OF
PUBLIC HEALTH &
HEALTH POLICY,
NEW YORK, N.Y.

“If endocrinology is your passion, this competition offers an ideal stage to showcase your dedication and commitment to the field. It’s important to understand that success isn’t solely defined by the outcome but by the effort you invest.”

For Arthur Registre, the Endocrine Society’s Committee on Diversity and Inclusion’s (CoDI) inaugural video contest was the perfect way to showcase his unique perspective from his Caribbean background.

“I originate from a Haitian and Grenadian background, and within the Caribbean community, endocrine disorders are prevalent, such as diabetes,” says Registre. “Unfortunately, the resources necessary for accurate diagnosis and treatment remain primarily inaccessible, leading many people to suffer from untreated diabetes and its effects. I was interested in applying and attending **ENDO 2023** to learn more about the field of endocrinology.”

The goal of the new video contest was to create an opportunity for students who are interested in practicing medicine or conducting research in endocrinology to attend **ENDO 2023**, offering them valuable opportunities for learning and networking, says Nazila Jamshidi, the Society’s manager for Diversity Programs. “The Endocrine Society Committee on Diversity and Inclusion recognizes the vital importance of supporting future endocrinologists while prioritizing diversity, equity, and inclusion throughout the academic journey,” she adds.

Lights, Camera, Action!

Registre was one of the eight contest winners who received free registration to **ENDO 2023** that was held in Chicago in June. Applicants were asked to record a brief video of why they are interested in endocrinology and why they would

like to attend the **ENDO 2023** conference. Those who identified as underrepresented in medicine were encouraged to apply, and all applicants were required to be in their third or fourth year of undergraduate studies, graduate school, medical school, or a new resident or postdoc.

Anna Mazurenko, who recently completed her Bachelor of Science degree from the University of British Columbia, was another contest winner. “As I was an undergraduate student back when I was applying to go to **ENDO 2023**, I struggled to find funding and support for my travel and conference expenses,” she says. “Unfortunately, undergraduate students just don’t get the same monetary support as graduate students and beyond. When I saw this competition and its availability to undergraduate students, I knew it was the perfect opportunity to get support in attending the conference and to discuss my experience in endocrinology as a woman and a second-generation immigrant.”



ANNA MAZURENKO

2023 CODI VIDEO
CONTEST WINNER

UNIVERSITY OF
BRITISH COLUMBIA,
BURNABY, BRITISH
COLUMBIA, CANADA

“When I saw this competition and its availability to undergraduate students, I knew it was the perfect opportunity to get support in attending the conference and to discuss my experience in endocrinology as a woman and a second-generation immigrant.”

Registre was a student at Penn State University at the time he submitted his video but is now attending the CUNY Graduate School of Public Health and Health Policy. He is working toward a master’s in public health with a focus on community health.

“My graduate studies serve as the foundation upon which I intend to build my career aspirations, aiming to provide compassionate care to communities that have endured systemic negligence,” he says. “In my studies, I am learning about social determinants of health and health policy dynamics, and I am eager to utilize them in my career.”

Registre says he plans to attend medical school and become a physician dedicated to addressing the healthcare disparities

disproportionately affecting marginalized communities. “I believe healthcare should be anchored in a holistic understanding of each patient’s unique circumstances, prioritizing personalized care as the cornerstone of medical practice,” he explains.

In her video, Mazurenko shares her desire to follow in her immigrant mother’s footsteps with a career in medicine. She says her goal is to help better understand the “crucial contribution of endocrinology for our health and function, one hormone at a time.”

Sharing Dreams

Contest organizers selected the eight most compelling stories from the submissions, and the winners also had the opportunity to participate in the full-day Early-Career Forum and attend several CoDI sessions and professional development workshops.

“I went to all of the lectures on trans/gender-diverse care and the professionals presenting were amazing,” says contest

2023 Winners of CoDI Video Contest

Congratulations to all the winners of the inaugural CoDI Video Contest*:

- Victoria Cammarano, Valparaiso University
- Faith Carter, Cornell University
- Ewelina Greene, St. George’s University
- Anna Mazurenko, University of British Columbia
- Chioma Nnyamah, University of Illinois, Chicago
- Nupur Pandya, University of Illinois, Chicago
- Arthur Registre, Pennsylvania State University
- Josie Setiawan, University of British Columbia

Watch all the winning videos here: <https://www.endocrine.org/our-community/diversity-equity-and-inclusion/codi-video-contest>.

**Universities attended at time of contest submission.*

winner Victoria Cammarano of Valparaiso University. “I also spent a lot of time networking with clinicians because transgender specialists are relatively sparse, especially in the Midwest. I made a lot of valuable contacts, on top of meeting so many wonderful people.”

Cammarano shared her dream of working with transgender and gender-diverse patients “in a way that makes them feel safe and supported” in her video submission. Working in a multidisciplinary center for transgender care is an ultimate goal.

“The Early Career Forum was also an even better experience than I could’ve dreamed of,” Cammarano adds. “I learned so much about career building, networking, marketing, CV writing, and more. I feel more than prepared to go forward with my career, and a lot of that confidence is due to what I learned at the career forum.”

Jamshidi says plans for next year’s CoDI video contest will focus on students from Boston-area universities, the host city of **ENDO 2024**. In addition to free **ENDO** registration, winners also receive a one-year membership to the Society. “We aspire to welcome a greater number of students and share more compelling stories from underrepresented communities during **ENDO 2024**,” Jamshidi says. “Our goal is to introduce students from underrecognized minority communities to various specialties in endocrinology and provide them with the opportunity to hear from leading figures in those areas. We look forward to expanding our outreach and impact in the year ahead.”

Focus on Experiences, Not Qualifications

For students considering entering next year’s contest, this year’s winners shared some sage advice.

“I would advise that any applicants talk honestly and from the heart,” Mazurenko says. “I took the approach of focusing on my experiences and desires, instead of creating and regurgitating a list of qualifications and how I fit them. Everyone has a unique life experience that interacts with their career choice, and I would recommend really tapping into how your life story led to where you are within the field of endocrinology today.”



**VICTORIA
CAMMARANO**

2023 CODI VIDEO
CONTEST WINNER

VALPARAISO
UNIVERSITY,
VALPARAISO, IND.

“The Early Career Forum was also an even better experience than I could’ve dreamed of. I learned so much about career building, networking, marketing, CV writing, and more. I feel more than prepared to go forward with my career, and a lot of that confidence is due to what I learned at the career forum.”

Registre agrees. “I encourage [anyone interested] to seize this unique opportunity with determination,” he says. “If endocrinology is your passion, this competition offers an ideal stage to showcase your dedication and commitment to the field. It’s important to understand that success isn’t solely defined by the outcome but by the effort you invest.” ^{EN}

– FAUNTLEROY SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND., AND A FREQUENT CONTRIBUTOR TO *ENDOCRINE NEWS*.



Translational Medicine

Q&A with Márta Korbonits, MD, PhD

Márta Korbonits, MD, PhD, the 2023 Endocrine Society Gerald D. Aurbach Laureate Award recipient for Outstanding Translational Research, talks to *Endocrine News* about the award, her research on pituitary adenomas, and shares her own words of wisdom.

BY GLENDA FAUNTLEROY SHAW

Márta Korbonits, MD, PhD, is no stranger to the endocrine research community. As president of the Society for Endocrinology and long-standing member of the Endocrine Society, both Korbonits' dedication to the specialty and her work are well-renowned.

It should come as no surprise then that she has been recognized as the 2023 Laureate recipient of the Gerald D. Aurbach Award for Outstanding Translational Research — an award recognizing outstanding contributions to research that accelerate the transition of scientific discoveries into clinical applications.

As professor of endocrinology and metabolism at Queen Mary University of London, Korbonits is considered one of the top clinician scientists on the clinical, translational, and experimental aspects of pituitary tumorigenesis and familial isolated pituitary adenomas. She has also broken new ground on the metabolic effects of various hormones.

Outside of her time in the laboratory, Korbonits takes care of patients with endocrine diseases at London's St. Bartholomew's Hospital and teaches students at both the undergraduate and postgraduate level. Her list of national and international awards is extensive and includes the Endocrine Society's 2015 Delbert A. Fisher Research Scholar Award for her work regarding the history of endocrinology. Korbonits is also an elected member of the Hungarian Academy of Sciences.

Endocrine News recently spoke with her to learn how understanding and treating pituitary adenomas became her purpose.

The Laureate award is named in honor of Dr. Gerald Aurbach, the Society's 68th president and a renowned researcher and clinician. What did news of the recognition mean to you?

I was thrilled to receive this as I feel my work is exactly "translational medicine," translating clinical questions to experiments and the other way, taking scientific results and applying them for patient diagnostics or treatment. I sometimes feel that I am a "translator." What I mean by that is that I understand the practicing clinicians' issues, what interests them, and what is unclear for them in a complex science study and can explain the new findings in a light that brings out the key points and the potential clinical relevance or consequence. And vice versa, if there is a clinical problem, I really enjoy contemplating how this could be studied in the laboratory using cells or animal models and find the right collaborator to give it a go.

You have been honored for your contributions that have helped unlock the understanding of pituitary adenomas. What is your lab's current research goals?

I am especially interested in familial pituitary adenomas, the underlying mechanism leading to tumorigenesis and especially why we see incomplete penetrance for some of these conditions.

You are also heavily involved in teaching and mentoring young researchers at Queen Mary University of London. What words of advice do you share about how you have made your journey from where they are now to your current success?



Márta Korbonits, MD, PhD, professor of endocrinology and metabolism, Queen Mary University of London, U.K.

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A firm believer in the importance of mentoring, she supervises a number of MSc and PhD students at the Queen Mary University of London. Here, Korbonits (third from right) celebrates at her lab's 2023 summer barbecue with colleagues and their families.



Korbonits accepts the 2023 Endocrine Society Gerald D. Aurbach Laureate Award for Outstanding Translational Research at ENDO 2023 in Chicago in June as then-President Ursula B. Kaiser, MD, looks on.

The first is to believe in your ideas. I only learned this later. The key to success is to collaborate, and the most important is to be resilient and persevering. If, as a young researcher with the most brilliant study plan, you do not get your research grant funded, then you should have the mindset — with support from colleagues — to shake it off and try again.

On top of all your research work, you're a key member of the Annual ENDO Conference Steering Committee. How was ENDO in Chicago? Any sneak peaks at what attendees can expect next year?

The Chicago meeting was absolutely exciting! Lots of fantastic talks, workshops, exciting oral presentations, and great discussions at the posters. I really enjoyed meeting with all the colleagues I have not seen for the last few years. We are already preparing for Boston, so see you there! 

– FAUNTLEROY SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO ENDOCRINE NEWS AND WRITES THE LABORATORY NOTES COLUMN.

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Government Shutdown Averted for Second Time as Society Advocates to Fund Health, Research Programs

With the clock running out on a federal government shutdown that was to begin midnight November 17, Congress passed a short-term bill to keep the government open.

The bill will fund most health programs, including the National Institutes of Health (NIH), through February 2. Earlier this year, Congress passed a similar measure averting a government shutdown that was to begin October 1. The plan will give lawmakers more time to attempt to negotiate and pass full-year spending bills, though major partisan divisions are expected to make those efforts complicated. The House of Representatives, for instance, introduced a

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The Endocrine Society has been a vocal advocate for keeping the federal government open and passing a long-term funding bill with increases for the NIH and other federal health and prevention programs.

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funding bill for health programs that contained sweeping cuts (almost \$4 billion for the NIH) and additional policy measures that would restrict research and access to care.

The Endocrine Society has been a vocal advocate for keeping the federal government open and passing a long-term funding bill with increases for the NIH and other federal health and prevention programs. We will continue our advocacy to protect the NIH from budget cuts and fund health as Congress works on passing legislation before the February 2 deadline.

We encourage members to visit our advocacy page at: endocrine.org/takeaction to learn more and participate in our online advocacy campaigns.





White House Announces Initiative to Improve Women's Health Research

First Lady Dr. Jill Biden and the White House Gender Policy Council recently announced the first ever White House Initiative focused on Women's Health Research.

The Initiative seeks to eliminate the existing gap in scientific knowledge on women's health, which has been drastically underresearched and underfunded. President Biden has requested that federal agencies and the White House provide concrete recommendations to advance women's health research within 45 days of the announcement.

The Endocrine Society has long advocated for expanded women's health research, increased funding, and for policy changes to improve

research, and we applaud the White House for its actions. We plan to work with Carolyn Mazure, MD, the chair of the Initiative, and her team to achieve scientific breakthroughs and close research gaps.

CMS Releases Finalized Physician Payment Rule



In early November, the Centers for Medicare and Medicaid Services (CMS) released the final Medicare Physician Fee Schedule (MPFS) rule for CY 2024.

This annual rule updates payment policies and payment rates for Part B services furnished under the MPFS. Endocrinology is estimated to see a 3% increase in overall Medicare payments under the rule. The new rule also finalizes a complex add-on code associated with office/outpatient evaluation and management (E/M) services. The Endocrine Society plans to offer some educational resources to our clinician members on the appropriate use of this code in the coming months.

The finalized rule also extends certain telehealth flexibilities including audio-

only services. Expanded access to telehealth continues to be a top priority for the Society. The rule also included provisions to improve the utilization of the Medicare Diabetes Prevention Program (MDPP). CMS will create a fee-for-service model for MDPP to improve beneficiary retention in the program.

Every year, CMS requests public comment on its proposed changes and we respond by submitting a comment letter to the agency. You can read our comment letter on the Endocrine Society website (<https://www.endocrine.org/advocacy/society-letters/2023/mpfs-2024>). For a full analysis of the final rule, please read our summary by visiting: <https://www.endocrine.org/improving-practice/macra>.

Society Continues Advocacy to Expand Access to Obesity Treatment and Care

The Endocrine Society continues to advocate for expanding access to obesity treatment and care amidst significant news regarding the effectiveness and availability of anti-obesity medications.

In early November, the Food and Drug Administration (FDA) announced the approval of tirzepatide for treating obesity. This important news was shared with the Endocrine Society government affairs staff by FDA Commissioner Robert Califf during a chronic disease discussion hosted by the FDA.

There was also important news in November regarding the effectiveness of anti-obesity medications (AOMs). The results of an important clinical trial study showed that AOMs reduce cardiovascular risks by 20% in people with obesity. This study was particularly significant as it looked specifically at people living with obesity. Just a few days before the study was released, Endocrine Society President Stephen Hammes, MD, PhD, met with congressional leadership offices to discuss the Society's policy priorities. One of the issues we discussed with these offices was coverage of AOMs and their effectiveness. During the meetings, we urged leadership to pass the Treat and Reduce Obesity Act (TROA), which would allow Medicare to cover AOMs. Under current law, Medicare is prohibited from covering AOMs.

The Society recently led a sign-on letter signed by over 100 organizations and sent to members of Congress urging them to pass TROA to improve the lives of many older Americans living with obesity.

Endocrine Society President Stephen Hammes, MD, PhD, went to Capitol Hill to meet with congressional leadership offices to discuss the Society's various policy priorities, including urging lawmakers to pass the Treat and Reduce Obesity Act, which would allow Medicare to cover anti-obesity medications.





Endocrine Society members Palak Choksi, MD, and Dan Spratt, MD, attended the American Medical Association (AMA) House of Delegates Interim meeting to advocate for issues important to endocrinology, including the Special Diabetes Program (SDP), obesity, and gender-affirming care.

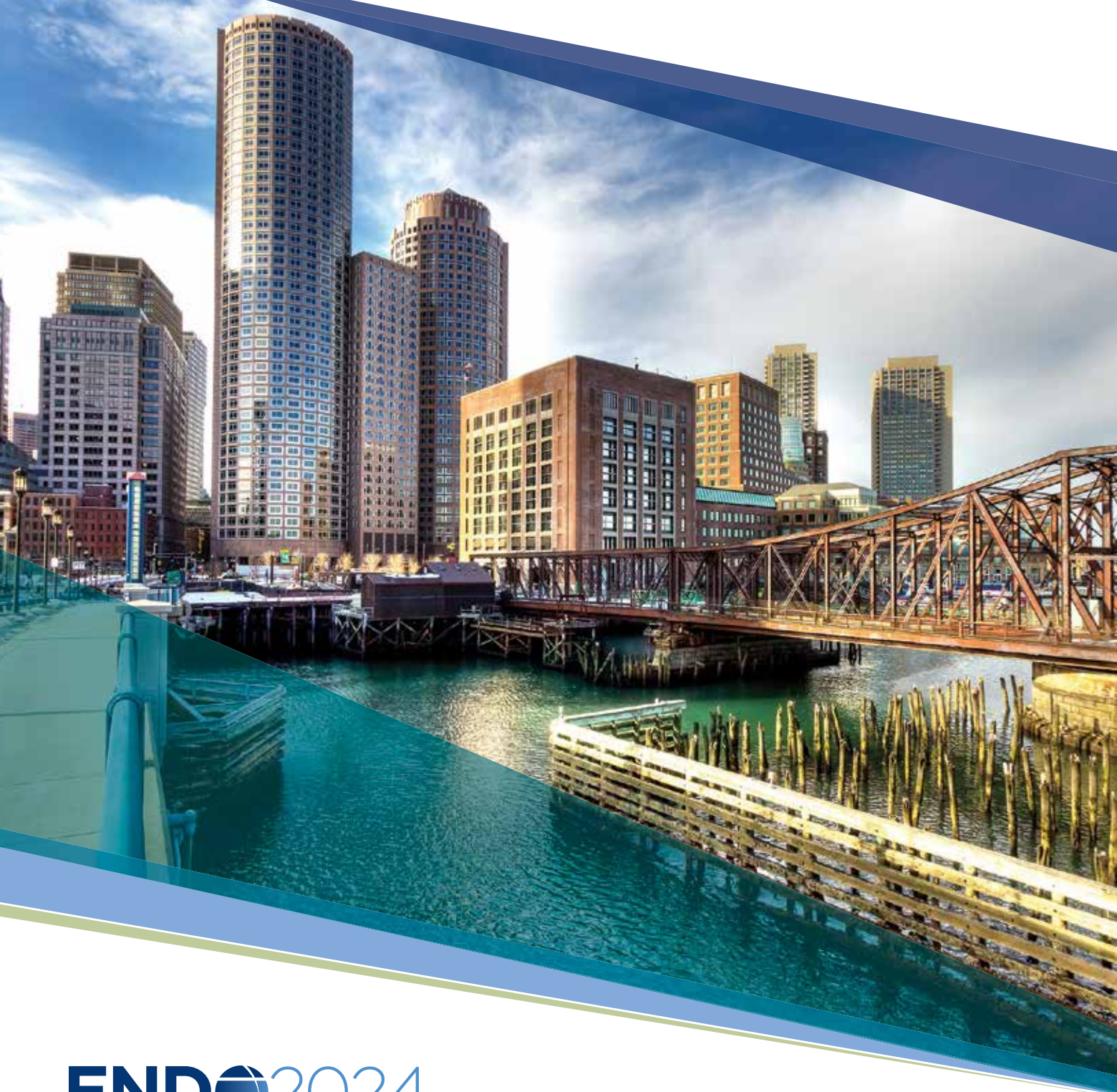
Society Successfully Advocates for Policy Priorities at AMA Interim Meeting

In November, the Endocrine Society attended the American Medical Association (AMA) House of Delegates Interim meeting to advocate for issues important to endocrinology.

The November meeting primarily focused on passing advocacy-related resolutions. Endocrine Society delegates Palak Choksi, MD, and Dan Spratt, MD, successfully advocated for several of our policy priorities, including the Special Diabetes Program (SDP), obesity, and gender-affirming care. The Society successfully urged the addition of language to a resolution to ensure that the AMA advocates for both components of the SDP.

The SDP, which is one of the Society's most important diabetes advocacy priorities, is made up of two important components. The Special Diabetes Program for Type 1 Diabetes Research (SDP Type 1) funds important research being done on type 1 diabetes at the National Institute of Diabetes and Digestive and Kidney Diseases at the NIH. The other component is the Special Diabetes Program for Indians (SDPI), which funds type 2 diabetes prevention and education programs for Native Americans and Alaska Natives.

During the meeting, a resolution was offered urging the AMA to advocate for the SDPI, but it did not include SDP Type 1. Choksi successfully offered an amendment adding the SDP Type 1 to the resolution, which was adopted by House of Delegates. This is an important victory, and the Society will continue to advocate that both components of SDP be fully reauthorized. **EN**



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