Enclochine

THE LEADING MAGAZINE FOR

ENDOCRINOLOGISTS

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Boston Beckons!

APRIL 2024

END[©]2024 PREVIEW

CHEERS TO BOSTON! Once again, *Endocrine News* is giving attendees a personal itinerary of where to eat, drink, shop, and play in this year's historic host city.

PANDORA'S BOX? An **ENDO 2024** plenary session details how artificial intelligence could impact endocrinology.

 IN HARM'S WAY. Cutting-edge research further exposes the never-ending impact of endocrinedisrupting chemicals.

 INCARCERATION NATION. A first-of-its-kind session at ENDO 2024 will discuss healthcare management for the "most underserved of the underserved" patients: the incarcerated.





Journal of the Endocrine Society





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- Health Systems, Services, and Disparities
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Journal of the Endocrine Society

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THE EDITORS WELCOME INQUIRIES AND SUBMISSIONS

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Host City As the Endocrine Society prepares to welcome endocrinologists from around the world to Boston for ENDO 2024, *Endocrine News* is once again highlighting our host city's local flair, as well as some conference highlights. Plus, we've got recommendations from your in-the-know colleagues! BY COURTNEY CARSON





16 | In Harm's Way Cutting-Edge Research Further Elucidates the Never-Ending Impacts of Endocrine-Disrupting Chemicals

Science has shown that virtually all of us are exposed to endocrine-disrupting chemicals (EDCs) essentially as soon as we're born ... and even before! The **ENDO 2024** symposium "Endocrine-Disrupting Chemicals in Reproductive Endocrinology" looks at these impacts in three different sessions that look at EDCs prenatally, postnatally, and environmentally.

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A first-of-its-kind session at **ENDO 2024** will discuss healthcare management for the most underserved of the underserved: the incarcerated. The session, "Endocrine Care for Incarcerated Individuals," will offer a detailed look at not only what it's like to be incarcerated, but also the challenges of delivering appropriate endocrine treatment to this often unfairly stigmatized population.

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Endocrine Society Experts Leverage Media to Improve Access to Care and Raise EDC Awareness

am honored to work with a Society that prioritizes access to care for all people who need it, including those living with diabetes and women with infertility, and one that advocates for legislation such as the Global Plastics Treaty to lower our everyday exposure to endocrine-disrupting chemicals (EDCs).

One of the most amazing things about the Endocrine Society is our members, who are world leaders in endocrine research and clinical care. Our experts, along with Endocrine Society staff, have put in years of hard work advocating on the Hill and building relationships



I look forward to celebrating the successes of the Endocrine Society team of members and staff with you all soon, and to seeing the continued success of our Society in educating the public on all things endocrinology.



with both policymakers and reporters. As such, we have become a trusted source for all hormone health topics, ranging from EDCs to the myths around the popular internet trend of "hormone balancing." Through this process, we have built strong relationships with *The New York Times*, CNN, *The Washington Post*, and many other influential news outlets, allowing us to advocate for our members.

In fact, the Society has had several successful events and media outreach programs over the past few months to highlight our policy priorities and to educate the media.

We just held our March Hill Day where 11 of our members from eight different states met with more than 25 offices. We asked Congress to complete the appropriations process for FY2024 with protected funding for the National Institutes of Health (NIH), reauthorize the Special Diabetes Program (SDP), and fund the NIH at \$51.303 billion in FY2025. Legislation to reauthorize the SDP passed by both the House and Senate a few days later, which included a funding increase for the program.

We also responded to the recent Alabama court ruling, which stated embryos had the same rights as children and created challenges for those seeking to access infertility treatments and made it more difficult for reproductive endocrinologists to care for their patients, by issuing a statement calling for members of Congress to support federal legislation protecting access to in vitro fertilization (IVF). Our statement generated increased interest and support in legislation. Fortunately, Alabama has since passed a state law protecting providers and IVF users from criminalization; however, this action may not be enough, so we will continue to prioritize protecting access to IVF at the federal level.

To educate the public about our Clinical Practice Guideline update process, we secured an exclusive interview with CNN reporter Jen Christensen to announce the update of our gender-affirming care Clinical Practice Guideline. We emphasized how the update will follow our usual evidencebased, thorough method involving a careful, deliberate, multidisciplinary approach that includes opportunities for all members to comment and contribute to the process. The article was received very well and syndicated across several publications.

The Society recently collaborated with the International Pollutants Elimination Network (IPEN) to publish a report, "Endocrine Disrupting Chemicals: Threats to Human Health," which provides a comprehensive evidence-based update on the state of the science around EDCs with a specific focus on plastics and pesticides. The report indicates that EDCs contribute to disorders such as diabetes, neurological disorders, reproductive disorders, inflammation, and compromised immune functioning.

The Society held a successful news conference with IPEN on the findings where lead author and Endocrine Society Board Member Andrea C. Gore, PhD, of the University of Texas at Austin, educated reporters from *The New York Times, Chemical Watch, Plastics Today,* and several other science and health journalists on the dangers that plastics pose to public health. The report garnered coverage in outlets such as *The Hill, Inside Climate News*, and *Sustainable Plastics*.

This webinar was held shortly after we released the findings of a new *Journal of the Endocrine Society* paper by Leonardo Trasande, MD, of NYU Grossman School of Medicine and NYU Wagner Graduate School of Public Service, that found United States health costs related to chemicals in plastics reached \$250 billion in 2018. Being able to put a cost on the harm these EDCs are causing helps show policymakers and the public why they should take this public health threat more seriously and act now to reduce exposure and pass legislation such as the Global Plastics Treaty.

In addition to policy issues, our members can speak on a wide array of endocrine topics and have been known to clear up some health misconceptions on social media. We were able to work with Deena Adimoolam, MD, on a webinar, "The Truth Behind Hormone Balancing," which is a trend that claims to balance your hormones with holistic approaches alone. It drew interest from the Association of Healthcare Journalists and NBC. This work is so important, as we see more and more of our patients trusting social media rather than experts for health advice and supplements.

I am so proud of the progress we have made with our advocacy efforts and the reputation we have created in the media as a trusted source on endocrine policy and science issues.

If you want to learn how to become an endocrine advocate, visit: https://www.endocrine.org/advocacy.

I look forward to celebrating the successes of the Endocrine Society team of members and staff with you all soon, and to seeing the continued success of our Society in educating the public on all things endocrinology.

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



Boston Bound for ENDO 2024

hile the cherry blossoms and dogwood trees are starting to flaunt their spring colors as I write this, the offices of the Endocrine Society are also blooming with activity in anticipation of **ENDO 2024** in Boston June 1 – 4!

To that end, we are hoping that this issue will serve as an impetus to get you excited about converging on Boston in a few months with thousands of your endocrinology colleagues from around the world. So as a "teaser" or an amuse bouche, if you will, on page 30, Courtney Carson has written an overview of what to expect from the **ENDO 2024** host city once the days of sessions are done. In **"Cheers to Boston,"** we have 10 pages of places to see, dine, dance, and even rock out to while you're in town. Your in-theknow Endocrine Society colleagues have even weighed in with some of their favorites they think you should check out while you're in town!

On page 24, Senior Editor Derek Bagley is opening a potential **"Pandora's Box?"** in his article that details an **ENDO 2024** session that examines the impact of artificial intelligence (AI) on the practice and science of endocrinology. "Artificial Intelligence in Health and Biomedical Research: The Future Is Now" promises to be a very intriguing plenary session that will hopefully answer the myriad questions endocrinologists have about this technology that remains a mystery to so many.

We feature another **ENDO 2024** session that takes a deep dive — sometimes literally — into the research uncovering even more data about the impact of endocrine-disrupting chemicals (EDCs) throughout a lifetime, and even before. On page 16, Kelly Horvath talks to several presenters of the session, "Endocrine-Disrupting Chemicals in Reproductive Endocrinology" for her article **"In Harm's Way"** that looks at these chemicals have a jarring effect prenatally, postnatally, and even environmentally. "Just a decade ago, the idea that EDCs might influence lactation was a very controversial idea," according to Megan E. Romano, PhD, MPH, Department of Epidemiology, Dartmouth Geisel School of Medicine, Lebanon, N.H., "but we're increasingly realizing that lactation is a vulnerable function, especially because mammary glands don't actually reach full development until lactation begins. So, it makes sense that this extremely hormonally mediated process would be very sensitive to exogenous chemicals and EDCs."

Endocrine news

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Executive Editor: Mark A. Newman mnewman@endocrine.org

> Senior Editor: Derek Bagley dbagley@endocrine.org

Art Director/Production: Anthony S. Picco

Art Director/Design: Catherine C. Neill, CNJ Creative, saLLC www.cnjcreative.com

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President: Stephen Hammes, MD, PhD president@endocrine.org

President-Elect: John Newell-Price, MD, PhD, FRCP j.newellprice@sheffield.ac.uk

> Past-President: Ursula B. Kaiser, MD ukaiser@bwh.harvard.edu

Secretary-Treasurer: Jeffrey Boord, MD jeffrey.boord@parkview.com

Chief Communications Officer: Aaron Lohr alohr@endocrine.org

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Derek also writes the feature, "Incarceration Nation," on page 40, about a first-of-its-kind ENDO 2024 session entitled "Endocrine Care for Incarcerated Individuals." This multisession symposium will discuss healthcare management for what many deem the most underserved of the underserved populations, the incarcerated. The program is co-chaired by Alicia Diaz-Thomas, MD, MPH, a pediatric endocrinologist and professor at the University of Tennessee Health Science Center in Memphis, Tenn., and Stanley Andrisse, PhD, MBA, an endocrine scientist and assistant professor at the Howard University College of Medicine in Washington, D.C., who himself was once incarcerated. According to Andrisse, the objectives of this session are to briefly review the landscape of incarceration in the U.S. and its implications on health and healthcare; discuss prevalence, processes of care, clinical outcomes, and importance of post-prison public health linkages for incarcerated individuals with diabetes, hormone sensitive cancer, and those requiring transgender care; and provide information regarding health psychology practices that can assist with endocrine care of incarcerated persons. "We hope to give an overall picture of the challenges that mass incarceration presents to our healthcare system and overall community well-being," he says. "Then we hope to provide specific insights to the challenges and lack of endocrine care inside prisons and jails."

As you can see, Boston in June for **ENDO 2024** is a definite must for anyone in the field of endocrinology, so mark your calendars, make your reservations, and register here: **https://www.endocrine.org/meetings-and-events/endo-2024**.

As usual, if you have any other questions, comments, or ideas, let me know at: **mnewman@endocrine.org**. (19)

- Mark A. Newman, Executive Editor, Endocrine News



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BY DEREK BAGLEY Senior Editor



Older, male, or Black patients showed less reduction in 10-year heart disease risk and lower odds of diabetes, hypertension, and dyslipidemia remission than younger, female, or White patients.

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TRENDS & INSIGHTS

Bariatric Surgery Linked to Heart Health Improvements in People with Severe Obesity

B ariatric surgery may result in significant cardiometabolic improvements, particularly among younger, female, or White people and those without comorbidities, according to new research published in the Journal of the Endocrine Society.

Researchers led by Danxia Yu, PhD, of Vanderbilt University Medical Center in Nashville, Tenn., point out that the United States has the highest obesity rates globally. In 2017 – 2018, about 40% of U.S. adults had obesity, and 9% had severe obesity. The prevalence is particularly high among Black adults. Bariatric surgery is one method to help people with severe obesity lose a lot of weight and improve their health.

"Obesity, especially severe obesity, is strongly associated with cardiometabolic disorders, including diabetes, hypertension, dyslipidemia, and cardiovascular disease (CVD)," the authors write. "Metabolic surgery is currently the most effective treatment for severe obesity and related comorbidities."

The researchers analyzed data from more 7,800 people between the ages of 20 and 79 who underwent bariatric surgery during 1999-2022 at the Vanderbilt University Medical Center. Most study participants were women and White, but the study also includes a significant number of male patients and Black patients, who have been underrepresented in bariatric surgery research.

"This study aimed to systemically evaluate cardiometabolic improvements after metabolic surgery, including blood pressure; blood lipids; glucose; HbA1c; predicted 10-year atherosclerotic cardiovascular disease (ASCVD) risk; and remissions of diabetes, hypertension, and dyslipidemia based on a large multiracial patient cohort from a single academic medical center and examine associated presurgery demographic and clinical factors," the researchers write. "Identifying presurgery factors related to post-surgery cardiometabolic health may help determine which patients are most likely to experience certain cardiometabolic improvements versus those who would likely benefit from further intervention or a higher level of management and care after surgery."

The researchers evaluated various cardiometabolic improvements, including blood pressure, cholesterol, glucose, and HbA1c. They also measured remission rates of diabetes, hypertension, and dyslipidemia, and the estimated 10-year cardiovascular disease risk.

Older, male, or Black patients showed less reduction in 10-year heart disease risk and lower odds of diabetes, hypertension, and dyslipidemia remission than younger, female, or White patients. Patients with a history of diabetes, hypertension, dyslipidemia, or cardiovascular disease showed less cardiometabolic improvements than those without.

"Our study highlights how bariatric surgery not only leads to significant weight loss but also substantially improves heart health," says study author Lei Wang, MPhil, of Vanderbilt University Medical Center. "These health benefits include lower blood pressure, blood lipids, and blood sugar, and an estimated 35% reduction in 10-year cardiovascular disease risk one year after surgery."

"Additionally, 30% to 50% of people in our study experienced remissions of diabetes, hypertension, and dyslipidemia," Yu says. "Individuals who were younger, female, self-identified as White and had no history of cardiometabolic diseases tended to see greater post-surgery cardiometabolic improvements."

Investigators Describe Changes to Pancreatic Beta-Cell at Onset of Type 1 Diabetes

w research by investigators at Joslin Diabetes Center sheds new light on the specific changes β -cells go through at the onset of type 1 diabetes. Their findings — published in *Nature Cell Biology* — offer new avenues for targeted interventions for the chronic autoimmune condition.

"In the field of type 1 diabetes, research has largely focused on understanding the immune component, but our study argues that the β -cell is a significant player," says Rohit N. Kulkarni, MD,



PhD, Margaret A. Congleton, chair and co-head of the Section on Islet and Regenerative Biology at Joslin Diabetes Center in Boston. "Our findings suggest that the β -cell could be initiating key events that then promote the autoimmune mechanism to go awry. It's a paradigm shifting approach."

In a series of experiments with β -cells taken from a mouse model of type 1 diabetes, as well as from humans with established type 1 diabetes, Kulkarni and colleagues teased out a signaling pathway that controls the innate immune response at the onset of type 1 diabetes. The team identified one pathway that influences the immune characteristics of β -cells, acting like control switches that identify them as friend or foe to the body; these control switches can be imagined as tiny tags. One specific tag the investigators focused on — N6methyladenosine (m6A) — plays a vital role in the response of β -cells during type 1 diabetes onset. By adjusting these control switches, the researchers were able to influence the levels of a crucial protein along this pathway, leading to a notable delay in the progression of the disease in a mouse model of type 1 diabetes.

Dario F. De Jesus, MSc, PhD, lead author of the study and research associate in the Kulkarni Lab, identified the key enzyme METTL3 as crucial for regulating β -cell antiviral defenses. In the late stages of type 1 diabetes, when METTL3 levels were low, it hinted that higher METTL3 levels shield β -cells from dysfunction. By enhancing METTL3 production in the mouse model, the team successfully delayed progression of disease.

"This discovery suggests that interventions to boost METTL3 levels is a potential strategy to protect β -cells and slow down progression of type 1 diabetes," says De Jesus, who is also an instructor in medicine at Harvard Medical School.

Taken together, these several lines of evidence paint a clearer picture of the immune events surrounding the still mysterious onset of type 1 diabetes, including a novel mechanism that could be harnessed for β -cell protection. They also demonstrated that the enzyme METTL3 has the potential to promote β -cell survival and function during disease progression.

"It is notable that this pathway has commercially available compounds that have been used in the context of other diseases," says Kulkarni, who is also a professor of medicine at Harvard Medical School. "While it's a different target, it's an approach which has been shown to work. Among our next steps, we will focus on identifying specific molecules and pathways that can be harnessed to enhance protection of the β -cell."



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Our findings suggest that the β -cell could be initiating key events that then promote the autoimmune mechanism to go awry. It's a paradigm shifting approach.



INTOUCH



Carol Lange, PhD

Carol Lange, PhD, Elected 2025–2026 Endocrine Society President

ndocrine Society members elected **Carol Lange**, **PhD**, of the University of Minnesota in Minneapolis, Minn., as its 2025 – 2026 president. She will serve as presidentelect for a year beginning in June 2024 before becoming president in June 2025.



Lange, a passionate mentor to trainees at all levels, has held many leadership positions within the Endocrine Society. She is currently the editor-in-chief of the Society's journal, *Endocrinology*.



A professor of medicine and molecular pharmacology and therapeutics, Lange also holds the Tickle Family Land Grant Endowed Chair of Breast Cancer Research, and is the associate director for basic science and the director of the Molecular, Genetic, and Cellular Targets of Cancer Training Program at the University of Minnesota Masonic Cancer Center in Minneapolis, Minn. Her research focuses on the role of steroid hormone receptors in breast and ovarian cancers.

Lange, a passionate mentor to trainees at all levels, has held many leadership positions within the Endocrine Society. She is currently the editor-in-chief of the Society's journal, *Endocrinology*. During her term as the Annual Meeting Steering Committee Basic Science chair, she helped found the annual Trainee Day at **ENDO**, an event that fosters the next generation of endocrine researchers. She also received the Society's 2020 Sidney H. Ingbar Laureate Award for Distinguished Service to the Field of Endocrinology for her many contributions.

The Society also selected four other members to join its Board of Directors beginning in June 2024:



Kristy Brown, PhD

Kristy Brown, PhD, University of Kansas Medical Center, Shawnee, Kan.: Brown has been selected for the Society's secretary/treasurer position. She is the associate professor of metabolism and cancer in the Department of Cell Biology and Physiology at the University of Kansas Medical Center. and co-program leader, Cancer Prevention and Control, at the University of Kansas Cancer Center. She is internationally renowned for her work underpinning the molecular relationship between obesity and breast cancer. Brown has had longstanding involvement with the Endocrine Society, including being part of developing the latest strategic plan and serving as a member of the Basic Science Advisory Group and basic science chair for **ENDO 2018**. She is currently the associate editor for *Endocrinology* and a member of the Society's Finance and Audit Committee.



MD, PhD

Bruno Ferraz-de-Souza, MD, PhD, University of Notre Dame Australia, Fremantle, Australia: Ferraz-de-Souza is an associate professor and chair of the Basic and Clinical Sciences Domain at the University of Notre Dame Australia School of Medicine in Fremantle, Western Australia, and also honorary principal investigator and postgraduate supervisor in endocrinology

at the University of Sao Paulo School of Medicine, in Sao Paulo, Brazil. His recent research is on the molecular bases of rare and common endocrinopathies, with a focus on bone



Lauren Fishbein, MD, PhD

metabolism. He is currently the associate editor for the *Journal* of the Endocrine Society and chair of the Publications Core Committee. He also served as chair of the Committee on Diversity and Inclusion.

Lauren Fishbein, MD, PhD, University of Colorado School of Medicine, Aurora, Colo.: Fishbein is an associate professor of medicine at the University of Colorado School of Medicine in the Division of Endocrinology, Metabolism, and Diabetes with a secondary appointment in the Department of Biomedical Informatics, and she is the director of the Neuroendocrine Tumor Clinical and Research Program. Her research interest is to understand what causes neuroendocrine tumors to form. She has held many service positions within the Society and is currently the Annual Meeting chair for **ENDO 2024**, associate editor of *Endocrine Reviews*, and a member of the Society's Research Affairs Core Committee.



Angela Leung, MD, University of California, Los Angeles David Geffen School of Medicine, Los Angeles, Calif.: Leung is associate professor of medicine in the Division of Endocrinology, Diabetes, and Metabolism, Department of Medicine, at the University of California, Los Angeles David Geffen School of Medicine and the Veterans Affairs Greater Los Angeles Healthcare

System. Her research interests are in thyroid disease, iodine status, maternal-fetal thyroid health, and environmental thyroid toxicants. She is currently an Editorial Board Member of *The Journal of Clinical Endocrinology & Metabolism* and a member of the Society's Endocrine Self-Assessment Program Faculty Group.

Board members will begin serving their three-year terms following **ENDO 2024**. The Society's annual meeting will take place June 1 - 4, 2024, in Boston, Mass.

INTOUCH

2024 Early Investigator Award Winners Announced

he Endocrine Society is pleased to announce the five early-career endocrinologists who have received the 2024 Early Investigator Awards.

The Early Investigators Awards were established to help develop early-career investigators and recognize their accomplishments in endocrine-related research. Recipients will receive a \$1,000 monetary award, complimentary registration and the opportunity to present at ENDO 2024, one year of free membership to the Society, and public recognition of research accomplishments in various Society platforms. The Endocrine Society's 2024 Early Investigator Award winners are:



Leen Antonio, MD, PhD, University Hospitals Leuven in Leuven, Belgium — Antonio is an endocrinologist/andrologist at University Hospitals Leuven, Belgium, and an assistant professor in the Department of Chronic Diseases and Metabolism (CHROMETA) of KU Leuven, Belgium. Her research interests

include male hypogonadism, male infertility, and pituitary disorders. She leads clinical research projects in andrology, male reproductive endocrinology, and steroid hormones.



Francesca Galbiati, MD

Francesca Galbiati, MD, Brigham and Women's Hospital and Massachusetts General Hospital, Boston, Mass. — Galbiati is a fourth-year clinical research fellow in the Division of Endocrinology, Diabetes, and Hypertension at Brigham and Women's Hospital. She went to medical school at the Università degli Studi di Milano

Bicocca Facoltà di Medicina e Chirurgia in Monza, Italy, and did her residency at the University of Pittsburgh Medical Center in Pittsburgh, Pennsylvania.



Cintia Citterio, PhD

University School of Pharmacy, Irvine, Calif. — As an assistant professor of biomedical sciences, Citterio teaches molecular biology and genetics to pharmacy and graduate students. She has mentored, advised, or co-advised several interns, undergraduate, and graduate students on

Cintia Citterio, PhD, Chapman

their research projects. Citterio's research focuses on the molecular mechanisms leading to thyroid disorders and the biochemistry behind thyroid hormone formation with the goal of understanding the molecular basis of disease to improve



diagnosis and treatment.

Kleiton Borges, PhD, Boston Children's Hospital, Boston, Mass. — Borges is an instructor in pediatrics at Boston Children's Hospital and Harvard Medical School with over 15 years of experience in cancer biology. His general research focus is the understanding of the cellular

and molecular basis of adrenocortical tissue homeostasis and tumor development. His main research program applies functional genomics to improve the understanding of adrenocortical carcinoma (ACC) immunology using genetically engineered mouse models that closely recapitulate the human ACC tumor.



Maria Camilletti, PhD

Scientific and Technical Research Council, Buenos Aires, Argentina - Camilletti is a research assistant currently working in the Faculty of Exact and Natural Sciences, at the University of Buenos Aires (FCEyN-UBA) and in the Institute of Neurosciences (INEU, FLENI, Escobar). Her research focuses on

Maria Camilletti, PhD, National

the molecular mechanisms of pituitary development and the identification of the genetic cause of hormonal deficiencies.

Endocrine Society Celebrates Special Diabetes Program Extension

he Endocrine Society applauds Congress for approving the first funding increase for the Special Diabetes Program in two decades.

On March 8, the Senate voted to extend the program, which supports both diabetes care and research into type 1 diabetes, until the end of 2024. This is part of the six-bill package funding several federal agencies. President Biden is expected to sign the bills.

Congress created the Special Diabetes Program in 1997 to advance research in type 1 diabetes and to address the disproportionate burden of type 2 diabetes on American Indians and Alaskan Natives.

The program has two components:

- Type 1 diabetes research, which is administered by the National Institutes of Health's National Institute of Diabetes and Digestive and Kidney Disease.
- Support for prevention, education, and treatment programs for indigenous communities across the nation, which is administered through the Indian Health Service.

The extension passed by Congress will fund the program through the end of 2024 at \$160 million per program per year, a \$10 million increase for each component. The program has not received an increase in funding since Fiscal Year 2004.

The Centers for Disease Control and Prevention (CDC), estimates that more than 38 million people nationwide have diabetes, and American Indians and Alaskan Natives are almost three times more likely to be diagnosed with diabetes than White adults. The CDC also states that more than 1.7 million adults and 304,000 children and teenagers have type 1 diabetes, according to the CDC.

The program's type 1 diabetes research component has advanced our understanding and treatment of this condition. The research has contributed to the development of the first Food and Drug Administration–approved medication that can delay the onset of type 1 diabetes, the first cellular therapy to treat adults who have type 1 diabetes and recurrent episodes of dangerously low blood glucose levels, and several artificial pancreas systems to help individuals achieve better blood glucose control.

The Endocrine Society is leading efforts in the diabetes community to advocate for a reauthorization of the Special Diabetes Program. We will continue to advocate for a longterm reauthorization of this critically important program.

We applaud the bipartisan co-chairs of the Diabetes Caucus, Sens. Jeanne Shaheen (D-NH) and Susan Collins (R-ME), and Reps. Gus Bilirakis (R-FL) and Diana DeGette (D-CO), for their leadership in securing an increase in funding for the Special Diabetes Program.



ENDOCRINE ITINERARY

END 2024 June 1 – 4, 2024 • Boston, Mass.



We hope to see you at ENDO 2024, taking place June 1 – 4, 2024, in Boston, Mass. With more than 7,000 attendees, nearly 2,000 abstracts, and more than 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

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 reallife examples of leadership success. https://www.labmanager.com/labmanager-leadership-summit-30946

Pediatric Endocrine Society 2024 Annual Meeting Chicago, Illinois May 2 – 5, 2024

The Pediatric Endocrine Society's Annual Meeting brings together our diverse international community of over 1,000 clinicians, researchers, and trainees to share

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the excitement of new ideas, establish new friendships, and learn the latest insights covering the wide scope of our diverse field.

https://pedsendo.org/education-events/pes-2024-annualmeeting/

19th International Adrenal Meeting

Boston, Massachusetts

May 29 – 31, 2024

Adrenal researchers and clinicians from around the world will convene for the 19th International Adrenal Meeting, which will feature the Keith Parker Memorial Award and Lecture and the Alastair Brownie and Bernie Schimmer Early Career Awards & Lectures. This year's conference will see the addition of pheochromocytoma and paraganglioma to the program along with presentations in each session selected from submitted abstracts.

https://www.eventsquid.com/mobileapp.cfm?id=22293

ADA 84th Scientific Sessions

Orlando, Florida

June 21 – 24, 2024

The American Diabetes Association's (ADA) Scientific Sessions offers researchers and healthcare professionals the unique opportunity to share ideas and learn about the significant advances and breakthroughs in diabetes. Participants will receive exclusive access to more than 190 sessions and 2,000 original research presentations, take part in provocative and engaging exchanges with leading diabetes experts, expand their professional networks, and so much more.

https://professional.diabetes.org/scientific-sessions

ADCES24

New Orleans, Louisiana August 9 – 12, 2024

The Association of Diabetes Care & Education Specialists (ADCES) Annual Conference is the premier diabetes care and educational event of the year. More than 3,000 diabetes care and education specialists and other healthcare professionals are expected to participate at ADCES24 in New Orleans, La. Connect, collaborate, and educate yourself and others on the latest in diabetes care and education.

https://www.diabeteseducator.org/home

ASBMR 2024

Toronto, Ontario, Canada September 27 – 30, 2024

The ASBMR Annual Meeting boasts nearly 100 education sessions and 1,100 poster presentations in four information-filled days. The conference includes hands-on workshops focused on the latest technologies and research tools using model data sets, meet-the-professor sessions, the ASBMR Discovery Hall, an exhibition hall that provides attendees with a truly immersive experience, with access to new science, new knowledge, new tools, and new contacts all in one location.

https://www.asbmr.org/annual-meeting

INTERNATIONAL ITINERARY

12th Seoul International Congress of Endocrinology and Metabolism (SICEM 2024)

Seoul, Korea April 11 – 13, 2024

The Korean Endocrine Society (KES) will explore new frontiers in the realms of endocrinology and metabolism at SICEM 2024, the 12th Seoul International Congress of Endocrinology and Metabolism, in conjunction with the 43rd Annual Scientific Meeting of the KES. This prestigious congress will take place at Grand Walkerhill Seoul in Korea and is hosted by KES. This year, there will be joint symposiums in the SICEM program: ESROC-KES will explore the intricate nuances of the thyroid; JES-KES will concentrate on the field of bone; AFES-KES will delve into the clinical aspects of diabetes, obesity, and lipid disorders; and ENDO-ESE-KES will provide valuable insights into the field of pituitary, adrenal, and gonad studies.

https://www.sicem.kr/about/overview.php

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

May 11 – 14, 2024

Attracting more than 4,000 delegates, from more than 100 countries, ECE continues to develop as a worldleading 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 endocrinology. Whatever your area of interest, there will be sessions that are of direct relevance, as well as extensive networking opportunities. https://www.ese-hormones.org/eventsdeadlines/european-congress-of-endocrinology/ ece-2024

31st European Congress on Obesity Venice, Italy

May 12 – 15, 2024

ECO2024, the 31st European Congress on Obesity, will feature an innovative and interactive program, covering the many facets of obesity. The congress will feature a structure to allow delegates to interact as much as possible with presenters, as well as a plethora of plenary and topic sessions, teaching workshops, and moderated research communication sessions. Program topics will be organized into four main areas: Basic Science, Behavioral and Public Health, Childhood and Adolescent Obesity, and Management and Intervention.

https://eco2024.org/

Cutting-Edge Research Further Elucidates the Never-Ending Impacts of Endocrine-Disrupting Chemicals

Scott Belcher, PhD, and his team examined biomarkers of disease in both household pets as well as wildlife to fully see the impacts of chemical pollutants on the environment in a comprehensive, holistic approach. Science has shown that virtually all of us are exposed to endocrine-disrupting chemicals (EDCs) essentially as soon as we're born ... and even before! The **ENDO 2024** symposium "Endocrine-Disrupting Chemicals in Reproductive Endocrinology" examines these impacts in three different sessions that examine EDCs prenatally, postnatally, and environmentally.

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BY KELLY HORVATH

hen you head to Boston, Mass., this June to attend the Endocrine Society's signature annual meeting, be sure to put "Endocrine-Disrupting Chemicals in Reproductive Endocrinology," happening June 3, 2024, from 4:30 p.m. to 6:00 p.m., on your itinerary.

Three presenters will offer their distinctive perspectives on the far-reaching impairments imposed by endocrinedisrupting chemicals (EDCs) in 30-minute presentations. Two focus on EDCs' effects on the female reproductive system, one from a biological/toxicological point of view and the other specifically on the epidemiological maternalchild aspect. A third zooms out to look at community-wide health effects. From rodent models to individual humans to populations and their environments, these presentations will offer a 360° view of how EDCs affect our micro and macro ecologies.



This session will include three distinguished speakers with diverse experience and expertise, including EDC mixtures, forever-chemical PFAS, maternal and fetal health, community engagement, and analytical chemistry. The research updates from their presentations will shed light toward reaching a more comprehensive understanding of the reproductive and endocrine impacts of EDCs."

- SHUO XIAO, PHD, SCHOOL OF PHARMACY AND ENVIRONMENTAL AND OCCUPATIONAL HEALTH SCIENCE INSTITUTE, RUTGERS UNIVERSITY, PISCATAWAY, N.J.



Plastic baby bottles were made from materials containing plasticizer bisphenol A (BPA), which can seep into the bottle's contents leading to health problems down the road. BPA also escapes from water pipes, dental materials, cosmetics, and household products among others and is released into the environment.

The session will be chaired by Shuo Xiao, PhD, from the School of Pharmacy and Environmental and Occupational Health Science Institute (EOHSI) at Rutgers University, in Piscataway, N.J. Xiao told Endocrine News he feels "privileged and enthusiastic" about chairing this session, which aligns with his own work on female reproductive biology, disease, and toxicology. "Our laboratory research leverages multiple classic and cuttingedge models such as rodents, organoids, and organ-on-a-chip," he explains. "Using these models, we aim to understand how reproductive toxicants, including EDCs, adversely affect female ovarian functions and early pregnancy events."

The crux of the matter is that multiple health issues can occur prior to conception and during pregnancy, from infertility to birth defects to other reproductive diseases and cancers, yet our understanding of the underlying mechanisms is woefully insufficient. "However, increasing experimental and epidemiological research evidence reveals exposure to environmental EDCs as a key factor," Xiao says. "So, this session will include three distinguished speakers with diverse experience and expertise, including EDC mixtures, forever-chemical per- and polyfluorinated substances (PFAS), maternal and fetal health, community engagement, and analytical chemistry. The research updates from their presentations will shed light toward reaching a more comprehensive understanding of the reproductive and endocrine impacts of EDCs."



Marissa Sobolewski Terry, PhD

There's a lot to discuss: When do we worry about concentrations? What kind of research do we need to expand beyond four compounds? **How do** we make sure we're building the best models we can to appropriately translate the work that we're doing to human populations?"

- MARISSA SOBOLEWSKI TERRY, PHD, UNIVERSITY OF ROCHESTER, ROCHESTER, N.Y.

Prenatal Exposure to EDC Mixtures: Effects on Maternal and Fetal Health

Speaking first will be Marissa Sobolewski Terry, PhD, of the University of Rochester Medical Center in New York, about her team's work at the Sobolewski lab. Sobolewski says they "put together a curated cocktail of four EDCs that have been well studied and shown in single-chemical models to influence the endocrine system as well as the metabolic health of the pregnant [mouse] dam and the developing fetus."

Sobolewski explains that since the discovery and definition of EDCs — one definition being any chemical that can interfere with any aspect of endogenous hormone activity — more than 1,000 different chemicals or xenobiotics have been shown to have some endocrine activity and therefore fall into the EDC category. "This creates a quandary for toxicological research that typically focuses on single chemicals at a time," she says, "when the reality of human exposure, particularly during pregnancy, is that humans are not exposed to one EDC but to low doses of dozens of EDCs."

The team combines low doses of well-known chemicals from four broad classes that align with real-life exposures: atrazine, a pesticide; perfluorooctanoic acid (PFOA), a



AT A GLANCE

- Human pregnancy is a sensitive window for maternal endocrine disruption and metabolic health from exposure to EDCs.
- PFAS may be associated with shorter duration of breastfeeding across socioeconomically diverse and geographically distinct populations; additionally, elevated PFOA in breast milk was associated with altered metabolomic profiles.
- A One Health approach in examining PFAS effects in wildlife shows that effects in one species are likely occurring in other species and the environment itself, and vice versa.



Scott M. Belcher, PhD

666 We tend to bias the importance of human health effects, but we can also use the impacts on humans to make some predictions about what's going on, for example, with certain endangered species."

- SCOTT M. BELCHER, PHD, CENTER FOR ENVIRONMENTAL AND HEALTH EFFECTS OF PFAS, NORTH CAROLINA STATE UNIVERSITY, RALEIGH, N.C. perfluorinated alkylated substance (PFAS) and therefore a "forever" chemical; bisphenol A (BPA), a plasticizer once used in infant bottles; and 2,3,7,8-tetrachlorodibenzo-pdioxin (TCDD), an industrial byproduct. The cocktail was then given to pregnant dams to study its effects on the mouse fetuses. Sobolewski says this in itself represents scientific advancement — toxicological research has historically been done on males — but it also dawned on the team that they should additionally look at pregnancy itself as a "sensitive window" for these kinds of exposures, to answer, in other words, how is the pregnant mouse different than a female mouse when it comes to exposure to EDCs? "Those targets may be particularly sensitive to endocrine disruption since there's so much fluctuation going on, and the modulation of these different hormonal and metabolic pathways are so critical to a healthy pregnancy," Sobolewski says.

After studying dam pregnancies to confirm similarities in the hormonal and physiological shifts seen in human pregnancy, the team (led by graduate student Alyssa Merrill for this arm) compared a broad battery of phenotypes of pregnant and non-pregnant dams after exposure to the four-chemical cocktail. The results were both not all that surprising and surprising, and we won't give away too much here. Suffice to say, the not-so-surprising outcome is that EDC exposure significantly impacted endocrine physiology across pregnancy. Also expected was that pregnant and nonpregnant dams reacted differently to exposures, highlighting the sensitivity of pregnancy. However, this is not to say that non-pregnant dams were spared all effects.



A decade ago, the idea that EDCs might influence lactation was very controversial, but according to Megan E. Romano, PhD, MPH, research shows that lactation is a vulnerable function, especially since mammary glands don't reach full development until lactation begins.

The more surprising findings include that not just the endocrine axis was disrupted, but multiple metabolic ramifications also occurred. Sobolewski's presentation will deliver more than one revelation here. Another potential surprise is the behavioral changes the team noted. Unlike several of the irreversible effects already hinted at, these behavioral manifestations appeared temporary.

Sobolewski hopes to leave time for discussion about future research avenues. "There's a lot to discuss: When do we worry about concentrations? What kind of research do we need to expand beyond four compounds? How do we make sure we're building the best models we can to appropriately translate the work that we're doing to human populations?" Another question implicit in all of this work is, for otherwise transient blips in the homeostasis of a particular system, does EDC exposure exacerbate, lengthen, or make those interruptions permanent?

Sobolewski says she is looking forward to how her presentation dovetails with the others and to a really exciting discussion.

Effects of Per- and Polyfluoroalkyl Substances on Lactation and Human Milk

The presentation by Megan E. Romano, PhD, MPH, of the Department of Epidemiology at the Dartmouth Geisel School of Medicine, in Lebanon, N.H., synergizes well with Sobolewski's, answering the next logical questions. If human pregnancy is potentially negatively affected by EDCs, are endocrine-driven processes like lactation likewise impacted?

Romano has been interested in the effects of PFAS on mammary health since her postdoc years. This presentation will focus on breastfeeding duration and human milk composition and is the culmination of three studies she has been involved in, including findings from the New Hampshire Birth Cohort Study (NHBCS). That study was originally undertaken by Margaret R. Karagas, PhD, also at the Dartmouth Geisel School of Medicine, who was investigating the effects of arsenic contamination in drinking water, as inhabitants of rural New Hampshire largely get their water supply from private, unregulated wells.

Tapping into this existing population and data set to examine several PFAS commonly used commercially was important to Romano. "Ten years ago, the idea that EDCs might influence lactation was a very controversial idea, but we're increasingly realizing that lactation is a vulnerable function, especially because mammary glands don't actually reach full development until lactation begins," she says. "So, it makes sense that this extremely hormonally mediated process would be very sensitive to exogenous chemicals and EDCs."

The issue now at hand, explains Romano, is not if EDCs are potentially harmful, but which EDCs influence lactation and how. "[Sobolewski's] work in rodent models parallels the work that we do in human populations and helps us to really unpack the biological mechanisms," she adds.

From their work with the NHBCS, Romano and team have identified some unfortunate trends. "We observed that participants with greater overall plasma PFAS concentrations had greater risk of stopping exclusive breastfeeding before six months, and associations were driven largely by PFOA," she says. Importantly, these findings are not restricted to that cohort but fall in line with other reports encompassing socioeconomically diverse and geographically distinct populations. Although PFOA is apparently somehow causing the shorter breastfeeding duration, questions remain, says Romano — is there something about PFAS that makes initiating and sustaining lactation more difficult for either the infant or the lactating parent? Is insufficient milk produced? Is the quality of the milk less nutritious or otherwise less satisfying and less desirable? For a bit of a teaser, Romano reports that the team saw "potentially important differences in the metabolomic profiles of the milk with PFAS exposure," but more follow-up is needed before definitive conclusions can be drawn about milk composition and quality.

Ultimately, however, shorter lactation has clear health implications. "Lactation was, in many ways, overlooked for many years as an important endocrine endpoint. We're now learning more about the health protective effects of longer durations of breastfeeding for the lactating person, in terms of reduced risk for adverse cardiovascular outcomes; metabolic benefits; and, possibly, reduced risk of breast cancer. It's part of the story that we haven't really understood in the past that is a real linchpin for long-term health well after pregnancy," Romano says.



Megan E. Romano, PhD, MPH

Ten years ago, the idea that EDCs might influence lactation was a very controversial idea, but we're increasingly realizing that lactation is a vulnerable function, especially because mammary glands don't actually reach full development until lactation begins. So, it makes sense that this extremely hormonally mediated process would be very sensitive to exogenous chemicals and EDCs."

> — MEGAN E. ROMANO, PHD, MPH, DEPARTMENT OF EPIDEMIOLOGY, DARTMOUTH GEISEL SCHOOL OF MEDICINE, LEBANON, N.H.

Even so, she says, "I try hard not to give any prescriptive advice because breastfeeding is an incredibly personal decision. It's a 'team sport' — everything has to fall into place. But the reason why I do this work is because I don't think the things in our environment should get in the way of people's decision making. That should not be a barrier."

Integrating Communities and Environments to Address PFAS Toxicity

Speaking of the environment, in the second presentation of the day, Scott M. Belcher, PhD, of the Center for Environmental and Health Effects of PFAS at North Carolina State University in Raleigh takes a more population-health bent. Even though the problems EDCs present to human health have been accepted science for decades, Belcher says that EDCs do not currently have a specified niche in chemical regulatory policy. "That's where there are still challenges in creating a framework that protects public health. Getting that balance between corporations' abilities to maintain a robust economy versus public human and environmental health is truly where the challenge is."

Belcher and team take this challenge head on with the "One Health" initiative, "a collaborative, multisectoral, and transdisciplinary approach" originally established in recognition that animals and humans share disease processes — the idea behind sending canaries into coal mines to ascertain the presence of toxic gases. The recent COVID-19 pandemic, Belcher explains, showed us another example of the way all elements in environments are linked; we more intimately understand the interaction between the animal world and human disease.

"We're trying to integrate human biology, plus the environment and even communities. Bringing more social science into the work is really the foundation of that societal balance between what we believe in for economies' well-being, plus the impacts of chemicals on health," Belcher says. "That requires transdisciplinary science, where people doing environmental sciences are talking to biologists, and health scientists are talking to people in the geological and hydrological engineering world. It brings all of these things together."

Belcher and his team look for biomarkers of disease by studying both household pets and livestock as well as wildlife in a community to home in on what the holistic impacts of chemical pollutants and environmental factors are in disease processes in the health and well-being of both the environment and the people living within them. This is where PFAS come in. "I'll be talking about all the PFAS that are associated with both background contamination, which is global, as well as elevated from sources that are known within our study area. I'll be linking studies that we've done over the last six years as a kind of holistic grouping and an example of how the One Health approach in working very closely with impacted communities can be very powerful," Belcher says.

The "canaries" — the sentinel species — for Belcher and team are the alligators native to North Carolina. Alligators and humans not only have similar immune and endocrine systems; thus alligators provide a reasonable basis for comparison, but also, explains Belcher, alligators do not move around much so additionally provide a clear snapshot over time of the health of a specific environment. In one study, they compared a population of alligators with known exposure to high PFAS levels to a reference population and found that the PFAS-exposed animals had disrupted immune activity, with clear implications for human health — the water these alligators inhabit is the water going into the community drinking water stores. In another, they looked at the bioaccumulation of PFAS in fish, which the alligators eat. Again, we can extrapolate the effects this has on humans, but, savs Belcher, One Health is bidirectional. "We tend to bias the importance of human health effects, but we can also use the impacts on humans to make some predictions about what's going on, for example, with certain endangered species." Back to the alligators, in fact, this is the first known occurrence of autoimmune-like effects in reptiles.

As mentioned, Belcher and team also look at pets (dogs) and livestock (horses) to compare effects of what's being consumed within and immediately outside households in known contaminated areas (due to local fluorochemical production). More on that to come in Belcher's presentation. One essential takeaway, however, will be that One Health is not just about communicating effects (and potential dangers) to a community, it's equally about listening. "For the last six or seven years, we've been working with community partners such as law enforcement to learn what's most important to the communities they work in, so they're developing the scientific question alongside us," he says. "That naturally creates a dialogue that translates into information they can use to improve the health of the community."

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Endocrine-Disrupting Chemicals in Reproductive Endocrinology

June 2, 2024 4:30 p.m. – 6:00 p.m.

The population is exposed to several commonly used consumer products that contain hormonally active agents which can disrupt the reproductive endocrine axis. This session will highlight different chemicals/chemical mixtures that potentially affect reproductive health and general metabolism.

Shuo Xiao, PhD, chair, Rutgers University, Piscataway, N.J.

Prenatal Exposure to Endocrine-Disrupting Chemical Mixtures: Effects on Maternal and Fetal Health – Marissa Sobolewski Terry, PhD, University of Rochester, Rochester, N.Y.

Integrating Communities and Environments to Address PFAS Toxicity – Scott M. Belcher, PhD, North Carolina State University, Raleigh, N.C.

Effects of Per- and Polyfluoroalkyl Substances on Lactation and Human Milk – Megan E. Romano, PhD, MPH, Dartmouth College, Lebanon, N.H.

- HORVATH IS A BALTIMORE, MD.-BASED FREELANCE WRITER. IN THE MARCH ISSUE, SHE WROTE ABOUT THE CONUNDRUM OF PEDIATRIC DYSLIPIDEMIA IN CHILDHOOD OBESITY.

How Artificial Intelligence Could Impact Endocrinology

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END 2024

BY DEREK BAGLEY

Like it or not, artificial intelligence (AI) is here to stay, and its impact on both the science and practice of endocrinology will soon be quite evident. The **ENDO 2024** Plenary session, "Artificial Intelligence in Health and Biomedical Research: The Future Is Now," will no doubt answer many questions on the minds of endocrinologists in the audience. However, it will likely raise even more questions regarding its implementation, influence, and, most importantly, its outcomes.



n May 2023, a column appeared in *The New York Times* titled, "We Are Opening the Lids on Two Giant Pandora's Boxes." The columnist, Thomas L. Friedman, argued that artificial intelligence and climate change are the two Pandora's boxes, each giving humanity "godlike" abilities to exceed brainpower and to drive ourselves from "one climate epoch to another," respectively.

Pandora's box, of course, is the container in Greek mythology that, when opened, released all manner of strife and blight upon humanity. Climate change has been a concern among experts for years, but artificial intelligence (AI) is now starting to make headlines daily, with the rise of easily accessible products like ChatGPT and Bard. And those headlines about AI can range from questionable and unethical (a BestColleges survey of 1,000 college students found that 56% used AI on assignments or exams) to terrifying (the U.S. Air Force denied a report that an AI drone "killed" its operator because it didn't agree with the orders it was given).

But Pandora's box also contained hope. Artificial intelligence has been shown to predict gestational diabetes, extend time in range and reduce hypoglycemia events in patients with type 1 diabetes, improve detection of fractures in patients with osteoporosis, reduce unnecessary thyroid surgeries by better detecting benign nodules, and predict how patients with acromegaly respond to first-generation somatostatin receptor ligands.

A plenary session at **ENDO 2024** titled "Artificial Intelligence in Health and Biomedical Research: The Future Is Now" will present attendees with the benefits and risks of AI and its uses in clinical care, education, and research.

"I think we're in an interesting time," says Casey S. Greene, PhD, a professor of biomedical informatics at the University of Colorado School of Medicine and one of the presenters of this **ENDO** plenary. "Somehow over the last 14 months, people have gotten incredibly engaged in discussions about AI. People were enthusiastic about AI before, but with the release of ChatGPT, the level of enthusiasm went from very enthusiastic to beyond what I could have possibly imagined. These types of technologies — artificial intelligence, machine learning — have an enormous amount of potential to imprive care if we use them thoughtfully."

Enthusiasm, Pessimism, and Realism

Artificial intelligence is here to stay — pros, cons, and everything in between. And it will only get more pervasive as technologies improve, meaning clinicians, researchers, and educators will become at least somewhat comfortable with using AI in some capacity at some point. Greene tells *Endocrine News* that he usually sees people put themselves into one of two camps when it comes to AI: One camp is enthusiastic and wants to deploy AI in the clinic or lab as soon as possible, and the other camp is pessimistic, claiming AI is harmful and shouldn't be allowed anywhere near patients.

"What I hope we do in this session is end up with, 'Okay. What do I need to know if I want to think about this technology? How worried should I be? What are the things that keep Casey up at night?" Greene says. "Then, I hope we can use those as a launching point to discuss current issues. 'Okay. Here's what's



I think these types of technologies artificial intelligence, machine learning have an enormous amount of potential if we use them thoughtfully."

- CASEY S. GREENE, PHD, PROFESSOR OF BIOMEDICAL INFORMATICS, UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, AURORA

possible now. Here's what the risks are doing that. Here's how to do that thoughtfully.' In short, how do we take this incredible level of enthusiasm or pessimism and end up in a place of realism?"

Representation in Technology

And again, to reach that place of realism, a lot of thought and consideration is important when implementing artificial intelligence. Greene says these systems are extremely good at extracting patterns, even those that are too subtle for humans to detect. These systems are powerful, and capable of going beyond human limitations, but that's where the risks come into play. For instance, when building an AI system that works from pictures: "How do we know that it becomes more important that the training data that go into building these systems are representative so that the benefit can accrue equitably?" Greene says.

Greene points to the book *Invisible Women* and its examples in urban planning to show how inequitable representation in data can drive inequitable outcomes. A commuter trip to the office was deemed essential; a trip to the grocery store was not. Essential trips versus non-essential trips parallel cleanly with past stereotypes of maledominated activities versus female-dominated activities. Designing transportation around the essential and non-essential concepts meant that systems designed, on their face, to be gender-neutral were heavily biased.

The same problem has plagued biomedical research for over a century — the "average human" in research is a male, according to Greene. "When this underlies the data that we use to develop and test interventions, if they work for a man and a woman, great," he says. "If they only work for a man that still may get deployed; if they only work for a woman, we're probably never going to learn about it. This isn't specific to AI — this has



AT A GLANCE

- Artificial intelligence is here to stay, with all its benefits and risks, and healthcare providers and researchers will most likely use it in some capacity.
- A plenary talk at ENDO 2024 will present attendees with all the pros and cons of this technology and its uses in clinical care and research.
- Clinicians and researchers should be thoughtful and careful when building Al systems to improve studies and clinical outcomes.

END 2024

Plenary — "Artificial Intelligence in Health and Biomedical Research: The Future Is Now"

June 2, 2024 8:30 a.m. – 9:00 a.m.

This plenary symposium will present potential mechanisms to develop holistic approaches to designing and developing the dynamics of sociotechnical systems by describing recent work on a sociocognitive architecture, the transactive systems model of collective intelligence, and extends the collective intelligence to human-AI systems.

Al and Its Rapidly Expanding Role in Research and Care – Casey S. Greene, PhD, University of Colorado, Aurora

Session Title TBD – Su-In Lee, PhD, University of Washington, Seattle

This plenary session also includes Endocrine Society President Stephen R. Hammes, PhD, MD, annual President's Announcements and the following 2024 Laureate Award Presentations: Outstanding Scholarly Physician Award: Dolores M. Shoback, MD, UCSF/VA Medical Center, San Francisco, Calif.; and the Outstanding Innovation Award: David A. Katz, PhD, Sparrow Pharmaceuticals, Portland, Ore. occurred with human intelligence. But bringing AI in creates the possibility of bias laundering — we can end up with systems that we say are unbiased but where the bias is baked in. We must be much more thoughtful and careful about representation than we have been in the past to build technologies that provide equitable benefits."

The Serendipity Business

Earlier AI image systems had difficulty differentiating between a picture of a blueberry muffin and a picture of a chihuahua's face, so much so that it became a joke in the field of artificial intelligence. So, while people were excited about the transformative potential of this technology, that excitement can be tempered by a humorous but potentially dangerous AI mistake. "You have to be extremely thoughtful about how you use them because you don't want to end up in a blueberry muffin/chihuahua situation, in medicine," Greene says.

Greene goes on to say that people are shifting their excitement from images to language, so he will focus more on large language models in his talk. But he says he will center on the fact that no matter your opinion of AI, you will encounter it not just in the clinic or classroom or lab, but your everyday life as well. "I might not be popular for saying this, but I do think the ship has sailed," he says. "I'm not going to say for the better. I'm not going to say it's for the worse. It just is."

Greene likes to say he and his colleagues and peers are in the serendipity business, but serendipity in its original meaning, beyond just luck: being prepared, being thoughtful, being observant, and then having a moment of insight. "We want to build systems that produce serendipitous moments that surface exactly the right information at the right time to make the right decision," he says.

Greene hopes those who attend his talk leave with different expectations than when they first came in. For those excited and enthusiastic about AI, slamming the gas pedal down to move these things forward as quickly as possible, Greene wants them to leave with questions. On the other hand, Greene wants those slamming the brakes to leave with questions and an open mind. "Hopefully," he says, "we move towards the more nuanced middle ground that we will need to develop and deploy systems that advance health equitably."

- BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE MARCH ISSUE, HE WROTE ABOUT UNLOCKING ONE OF THE CONFOUNDING PROBLEMS PLAGUING MONOGENIC OBESITY IN PEDIATRIC PATIENTS.



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As the Endocrine Society prepares to welcome endocrinologists from around the world to Boston for **ENDO 2024**, *Endocrine News* is once again highlighting our host city's local flair, as well as some conference highlights. Plus, we've also got recommendations from some of your in-the-know colleagues! <image>

oston may be one of America's most historic cities, but it's far from outdated. While its history does indeed run deep, it's a city that never gets old. Year after year, Boston remains one of the top U.S. destinations, inviting travelers to savor its award-winning flavors, experience attractions that have literally stood the test of time, and soak up its one-of-a-kind culture.

And the one-of-a-kind **ENDO 2024** will head to Boston June 1 - 4, as leading experts, researchers, and the most respected endocrinologists from around the world converge to share the latest findings, current trends, and new opportunities in hormone science and clinical care.

Boston is guaranteed to provide the perfect backdrop for **ENDO 2024** — and we're here to show you why. Come early, stay late, or pick and choose what to see and do during your time in Boston.

Anything But Common

With its central location, **Boston Common** serves as the ideal starting point for travelers to the city, whether it's their first or 101st trip. Not only is Boston Common America's oldest public park, it's also the beginning point of Boston's iconic **Freedom Trail** — the two and a half-mile red-brick path passing 16 landmarks of the colonists' fight for independence from the British crown. Spend the day touring each stop along the trail or pick a few highlights to visit. Look for the **Granary Burying Ground**, the final resting place of many revolutionary heroes; the **Old South Meeting House**, where the Boston Tea Party was instigated; and the **Old State House**, site of the Boston Massacre, the first violent skirmish of the revolution. **Faneuil Hall** is the 18th-century meeting and marketplace that is now the center of Boston tourism action.

As you find yourself at this point along the trail, you'll be in Boston's North End. The trail is definitely worth finishing, with the most notable remaining site being the *USS Constitution*; however, a visit to Boston isn't complete without a stop in the **North End**. Unofficially known as Boston's "Little Italy," the city's Italian heritage will tantalize your senses as you wander through

END: 2024 Day by Day

No doubt your days will be packed while you're at Boston's Convention and Expo Center, weaving through the crowds as you make your way to various sessions and presentations at ENDO 2024. Here are just a few highlights - among hundreds - that might appeal to you.

Saturday June 1

Plenary: Cardiovascular Disease in Diabetes: From Molecular Pathways to Populations, 8:00 a.m.

Cardiovascular disease (CVD) represents the leading cause of death globally. The prevalence of CVD is sustained in part by the explosion of obesity and diabetes contributing to a broad syndrome known as cardiometabolic disease. This session will discuss cardio metabolic disease from bench to bedside, focusing on both molecular mechanisms and biopsychosocial challenges facing our underserved populations.

Osteoporosis in Underserved Populations, 3:30 p.m.

Clinical research, therapeutic trials, and clinical guidelines for the management of osteoporosis have largely focused on our understanding and management of postmenopausal osteoporosis; osteoporosis in adults with complex medical comorbidities remains poorly understood. Patients with transfusiondependent hemoglobinopathies, women with premature menopause, and patients with chronic neurological conditions are particularly underserved by conventional therapeutic guidelines, advice, and evidence.

Sunday June 2

Plenary: Artificial Intelligence in Health and Biomedical Research: The Future Is Now, 8:00 a.m.

This translational proposal will present potential mechanisms to develop holistic approaches to designing and developing the dynamics of sociotechnical systems by describing recent work on a sociocognitive architecture, the transactive systems model of collective intelligence, and extends the collective intelligence to human-AI systems.

Artificial Intelligence in Endocrine Diseases, 9:15 a.m.

Advancements in artificial intelligence (AI) and machine learning have revolutionized various fields, and adrenal, pituitary, and thyroid research are no exception. This session aims to explore the cutting-edge applications of Al in understanding adrenal, pituitary, and thyroid function, diagnosis, and treatment. Through a series of informative presentations and discussions, we will delve into the innovative ways AI is transforming adrenal research, providing new insights, and enabling personalized approaches. Discover the potential of AI in revolutionizing adrenal care and its implications for future clinical practice.

Monday June 3

New Horizons in Sexual Development, 9:15 a.m.

Sex development is an ongoing topic of interest in the field of rare endocrine disorders and specifically for pediatric endocrinology as the severe phenotype manifests prenatal or at birth. Still, almost half of newborns with atypical external genitalia remain without specific molecular diagnosis with current diagnostic approaches. DNA repair and other genes unsuspected thus far are now picked up by whole exome sequencing (WES) or whole genome sequencing (WGS) and reveal novel mechanisms of disorders of sex development.

Endocrine-Disrupting Chemicals in Reproductive Endocrinology, 4:30 p.m.

The population is exposed to several commonly used consumer products that contain hormonally active agents that can disrupt the reproductive endocrine axis. This session will highlight different chemicals/chemical mixtures that potentially affect reproductive health and

Tuesday June 4

Retirement is

an exciting stage

general metabolism.

Retiring as an Endocrinologist, 9:00 a.m.



Richard J. Santen, MD

where you are free to live your life according to your own terms. This session will discuss opportunities to give back to the field, mentor, read grants for others, stay with clinical care, or find other ways to stay involved when considering retirement.

This is quite a unique session, and not just because it's being conducted by Endocrine Society Past-President Richard J. Santen, MD, emeritus professor of medicine in the Division of Endocrinology and Metabolism at the University of Virginia in Charlottesville, but because this is "the first time the Endocrine Society has had a session in the area of career development for retirees," Santen says. "The intent is to guide retired endocrinologists into possible projects to use their expertise to 'give back' to society."

These sessions are just a tiny fraction of the dozens of options available to attendees that cover a vast range of topics in patient treatment outcomes, basic science, and clinical research. Check out more sessions - updated regularly - at: https://www. endocrine.org/meetings-and-events/ endo-2024/program.





Boston's colorful Italian history is on display in the North End (left), and be sure to check out Mike's Pastry (right) for their famous cannolis.

Neptune Oyster is a North End favorite with a never-ending variety of seafood dishes. The line down the block of hungry diners waiting to get in is a good sign!

the streets crammed with restaurants, bakeries, and cafes. You're sure to have worked up an appetite, and this is the perfect place to stop for a bite.

Bricco is a standout among the North End's many Italian restaurants with a cooking style it refers to as "sophisticated 'boutique' Italian cuisine," but you'll also



Lined with gas streetlamps along red-brick sidewalks and cobblestone streets, Beacon Hill is one of Boston's most charming neighborhoods.

find traditional dishes, like meatballs or shrimp scampi, as well as seafood, chops, and artisanal pastas. Caffé Vittoria, the oldest Italian café in Boston, is reminiscent of days gone by on the North End. Opened in 1929, this landmark has four levels, three liquor bars, and a cigar room lined with old-fashioned Italian espresso and coffee machines and memorabilia, giving it an authentic Italian feel. The North End is also home to one of the best raw bars in the nation. Neptune Oyster is a North End staple offering a wide selection of seafood dishes - fried clams from Ipswich, mussels from Chatham, sea scallops from Georges Bank, and peekytoe crabs from Maine. You'll know you've arrived when you see the line down the block. Neptune does not take reservations, so it's best to

arrive early. But no matter where you decide to eat, make sure to save room for dessert — you'll have to get a bite of the North End's iconic sweet treat. Founded in 1946, **Mike's Pastry** has been serving their famous cannolis that keep loyal Bostonians and tourists coming from around the world to enjoy.

At Its Core

Looking for the perfect spot to begin a day in Boston? Centrally located in downtown's Beacon Hill neighborhood, **The Paramount** is a long-standing Boston favorite since its opening in 1937. This 44-seat diner, frequently awarded "Best of Boston," is a perennial favorite among locals and tourists, particularly for breakfast

and brunch, available daily until 4:00 p.m. After breakfast, a tour of the charming **Beacon Hill** is in order with its red-brick sidewalks, cobblestoned streets, elegant Victorian and Federal-style townhouses, and gas streetlamps. One of the most exclusive neighborhoods in the city, Beacon Hill has been home to author Louisa May Alcott, poets Robert Frost and Sylvia Plath, former U.S. Senator and Secretary of State John Kerry, and countless actors and sports figures over the years.

Charles Street, the heart of Beacon Hill, is lined with trendy boutiques and some of the city's finest antique shops and art galleries. But the crown jewel of Beacon Hill is the **Massachusetts State House**. Designed by famed architect Charles Bullfinch, the Massachusetts State House features cornerstones laid by American Revolution heroes Samuel Adams and Paul Revere in 1795, before it was completed in 1798. The building's dome is its most striking attribute — Paul Revere originally covered the dome in copper, which was replaced by gold leaf in 1861.

Other hot spots in Beacon Hill include **Cheers**, the iconic bar/restaurant made famous by the television series it inspired, **Acorn Street**, which has been named one of the country's most beautiful (and photographed) streets, and lively eateries and bars — check out **Clink and Alibi** located in the old **Charles Street Jail**, which has been transformed into the luxurious **Liberty Hotel**.

Boston's Back Bay neighborhood, located a few streets from Beacon Hill, is home away from home for most travelers here. The majority of the city's hotels are in this area, including many of our **ENDO 2024** official partner hotels. But there's a lot more to do here than rest your head. From Beacon Hill, head to **Newbury Street** where you can spend the afternoon exploring one of the premier shopping destinations in the U.S. Featuring more than 120 stores and nearly 60 restaurants, Newbury Street's mile-long stretch of elegant Back Bay architecture is a shopper's paradise. You'll find something for everyone with stores featuring the hottest luxury brands, trendy bookstores, free art galleries, and unique shops offering up one-of-a-kind trinkets. **Glossier**, the "no-makeup makeup" brand that has amassed a cult following in recent years, opened a brick-and-mortar location on Newbury Street. **Posman Books**, a family-

owned store known for its curated collection of books, as well as assorted gifts and toys, offers a peaceful escape from Newbury Street's busy sidewalks. And **The Fairy Shop**, often referred to as the Harry Potter Shop, remains a favorite as it invites shoppers to discover magical secrets hidden in the middle of bustling Boston.

After working up an appetite, you'll have plenty to choose from when it comes to dining on Newbury. An ode to the seaside clam shacks and raw bars of the New England coast, **Little Whale** is a new favorite restaurant nestled in a charming Newbury Street brownstone. Get a taste of some of Boston's best pizza at **Dirty Water Dough Co.**, serving up the freshest ingredients on its now-famous "dirty dough" made with beer instead of water. And **Jonquils Bakery and Cafe**, another favorite among locals and tourists alike, is a cosmopolitan hotspot

What's in a Nickname?

Since our host city has been around for a while (it was founded in 1630, but still looks amazing!), Boston has had its fair share of nicknames through the years. Here are just a few:

The City on a Hill: Given by Governor John Winthrop's goal, of the original Massachusetts Bay Colony, to create the biblical "City on a Hill." It also refers to the original three hills of Boston.

> The Athens of America: Given by William Tudor, co-founder of the North American Review, based on Boston's great cultural and intellectual influence.

The Puritan City: Since it was founded by the religious sect.

The Cradle of Liberty: Apt name considering the city's role in instigating the American Revolution.

Beantown: Refers to the regional dish of Boston baked beans. In colonial days, a favorite Boston food was beans slow baked in molasses.

Titletown/City of Champions: Refers to Boston's history of sports dominance, with the Boston Red Sox, Boston Celtics, Boston Bruins, and New England Patriots each having won multiple national championships.

But no matter how you refer to it, Boston will be called "home" for the thousands of endocrinologists in town for **ENDO 2024** June 1 – 4!

Source: Wikipedia



One of the city's premier shopping and dining destinations is Newbury Street in Boston's Back Bay.



Kristen Vella's Boston Favorites

Born and raised in Massachusetts, Kristen Vella, PhD, associate director of Liver Disease Biology at Intellia Therapeutics in Cambridge, has lived and worked in the Boston area since her undergraduate years at MIT and her postdoc fellowship with Tony Hollenberg at BIDMC/Harvard Medical School. So, yeah, she's a bit of an expert, and here are her recommendations:

Best North End Bakery: In Boston's North End (Little Italy), everyone is going to tell you to go to Mike's Pastry or Modern ... skip the lines, and go to Bova Bakery! It's got everything from cannolis to pizza to sandwiches, and it's open 24 hours. Always open, always delicious. https://bovabakeryboston.net/

Best Sports Bar: Parlor Sports on the Cambridge/Somerville Line. It's a tiny bar, but it's worth the hike over to Inman Square. Drinks and food are fantastic. Baseball, soccer, basketball, hockey, wrestling ... you name it. http://trinastarlitelounge.com/ parlor/

Hidden Gem: The Boston Antheneaum. It's an independent library, a museum, and a cultural center full of unique treasures! Every corner is full of surprises! (open to 8 p.m. Monday through Thursday). https://bostonathenaeum.org/

Staying an extra day? Take the fast ferry to Provincetown. It's 1.5 hours out to the tip of Cape Cod, and you'll spend the day immersed in the art, culture, food, and scenery of P-town. https://baystatecruisecompany. com/schedule-fares/



The Boston Public Library is not technically a museum, but it is overflowing with paintings, tapestries, sculptures, and a gallery filled with John Singer Sargent murals.

that could be just as at-home in London's Mayfair or on the Champs Elysee in Paris. Serving a hand-picked selection of fine coffees and teas, fresh juices, exquisite baked goods, and healthy lunch options, Jonquils is an oasis on bustling Newbury Street.

Wrap up the day in Back Bay with a visit to **Copley Square** — home to **Trinity Church**, the **Boston Public Library**, and more. Although it is not a museum, the Boston Public Library is crammed with spectacular paintings, tapestries, architectural details, and sculptures, plus a fabulous third-floor gallery filled with John Singer Sargent murals. **Trinity Church**, a major artistic and cultural achievement in post-Civil War Boston, remains one of the most photographed sites in the city. And the **Fairmont Copley Plaza** is a favorite among tourists, not just for a place to stay, but for their famous resident. Cori Copley is the official ambassador of the Fairmont, giving out kisses and tricks in exchange for treats. Don't worry — she's a dog! The official canine ambassador of the hotel, Cori can be found hanging out front or in the hotel's lobby. Step inside not only for a friendly greeting, but to grab a drink in the hotel's **OAK Long Bar + Kitchen**. This sophisticated spot in the Fairmont is known for its farm-to-table American eats, craft drinks, and hobnobbing.

Right outside of the hotel is **Boylston Avenue**, famous as the home of the Boston Marathon finish-line. Boylston is filled to the brim with restaurants for an unforgettable dinner. Always a favorite in the area, **Abe & Louie's** is a high-end steakhouse, known for classic steaks, seafood, sides, brunch, and an extensive wine list. And their bar is very popular for happy hour and late-night drinks. **Atlantic Fish**, a city staple since the '70s, is a no-nonsense establishment that has thrived on letting the seafood do the talking. And **Uni**, located in the **Eliot Hotel**, serves up sushi, street food-inspired small plates, hot dishes, and an extensive craft cocktail and sake list.



Take in some history at the Benjamin Franklin statue at the Boston Latin School (above) and be sure to snap a selfie in front of the beautiful Trinity Church in Copley Square (above, right).

Ending On a High Note

Located just minutes from downtown and the Back Bay, the **South End** is one of Boston's most flourishing neighborhoods with its eclectic art studios, experimental theatres, and independent boutiques and galleries. Begin the day with brunch at **The Beehive**, an underground Bohemian eatery and bar featuring creative New American fare, cocktails, daily live music, and patio dining. From there, venture over to the **SoWa Art + Design District**, a vibrant community of artist studios, contemporary art galleries, one-of-a-kind boutiques, design showrooms, and restaurants unified by a passion for creating and curating exceptional experiences. Once known as a region of neglected



In South End, The Beehive is an underground Bohemian eatery and bar featuring creative cuisine, cocktails, live music, and patio dining, perfect for early June!



Ole-Petter Hamnvik's Boston Picks

Ole-Petter Hamnvik, MB BCh, BAO, is director of education for the Center for Transgender Health and the Endocrine Fellowship program director at Brigham and Women's Hospital, as well as an associate professor of medicine at Harvard Medical School, has been a Boston native since he came to the U.S. to start his internal medicine residency training at Brigham and Women's Hospital in 2007. He, too, has his favorite haunts he wanted to share with his Endocrine Society colleagues: Looking for some exercise? Put on your running shoes, or get a bike and hit the Boston Harborwalk, either north toward the city, or south toward the beach: https://www. bostonharbornow.org/what-we-do/explore/ harborwalk/

For a good meal, try the tinned fish and wine at haley.henry wine bar: https://www.haleyhenry.com/ Want to go shopping? Take the Orange Line to Assembly, and go explore Assembly Row, which also has some nice cafés and restaurants: https://assemblyrow.com/

And if you really want to get out of the city, take the Orange Line a few more stops to Oak Grove, and you'll be a short walk away from the Middlesex Fells where you can go for a forest walk with views of the Boston skyline: https://www.mass.gov/ locations/middlesex.fells-reservation



Boston Rocks!

You never know when you might be in the same town as some of your favorite musicians while they're touring the country. Catch these acts after your busy days at ENDO 2024 wrap up!

June 1: You can rock out at the Paradise Rock Club to see Birmingham, Ala.-based progressive metalcore band Erra. https://crossroadspresents. com/pages/paradise-rock-club

June 2: Alt rockers X Ambassadors (pictured) take the stage at the Paradise Rock Club during the Bean Town stop of their national tour. https://crossroadspresents.com/ pages/paradise-rock-club

June 2: If country is more your groove, Grammy nominee Jo Dee Messina will be kicking up her heels at the House of Blues. https://www.houseofblues.com/boston

June 4: What better way to celebrate a successful **ENDO** than to "step out" to the Wilbur Theater and see celebrated English singer/songwriter Joe Jackson live? https://thewilbur.com/

warehouses in Boston's South End, the SoWa Art + Design District has blossomed into a world-renowned arts, retail, and lifestyle destination and is known for its now-famous events such as the SoWa Open Market, SoWa First Fridays, and the SoWa Art Walk.

There's still more to learn about Boston, and there's no better place to do that than the heart of education. Only a three-minute train ride on the MBTA Commuter Rail transports you to Cambridge, home of Harvard University and the Massachusetts Institute of Technology (MIT) – both schools offer tours to the public. Enjoy the sights of Harvard Yard on a student-led tour that showcases Harvard's campus and provides a history of the university, general information, and insight into the student's individual experience.

In addition to touring the colleges, guests can explore the Harvard Museum of Natural History, the Fogg Art Museum, and more, before settling in for a bite in Cambridge. Since 1975, Harvest has been a refined Harvard Square restaurant offering a seasonal farm-to-table menu of locally sourced seafood and meats, plus homemade pastas, all meticulously and imaginatively prepared. If you can score a spot on the garden terrace here, you'll have one of the most coveted seats in the Square. Oleana, housed between two beautiful dining rooms and an enormously popular garden patio, showcases chef-owner Ana Sortun's passion for cuisines from around the world including those of Turkey, Greece, Armenia, Morocco, Egypt, and Sicily. And James Beard nominee Pagu dishes up innovative Japanese and Spanish small plates in a homey dining room. See if you can spot the hidden pug statues throughout the restaurant ("Pagu" means pug in Japanese) before heading back to your home away from home for the conference.

Make Your Reservations Now

There's a reason Boston is named a top destination, not only in the U.S., but across the globe year after year. But don't take our word for it. Come see for yourself! Register now to meet us in Boston for ENDO 2024.



The Harvard Museum of Natural History combines historic exhibits from the university's collections with various new multimedia exhibitions.

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END 2024

Administering Endocrine Healthcare in Our Nation's Prisons Incarceration

BY DEREK BAGLEY

A first-of-its-kind session at ENDO 2024 will discuss healthcare management for the most underserved of the underserved: the incarcerated. The session, "Endocrine Care for Incarcerated Individuals," will offer a detailed look at not only what it's like to be incarcerated, but also the challenges of delivering appropriate endocrine treatment to this often unfairly stigmatized population.

he United States incarcerates more people than any other country. According to Alicia Diaz-Thomas, MD, MPH, a pediatric endocrinologist and professor at the University of Tennessee Health Science Center in Memphis, the lifetime likelihood of being incarcerated is around one in 20 for all U.S. adults based on 2001 incarceration rates. This risk can vary by demographics, gender, and structural racism; non-Hispanic Black and Hispanic men are overrepresented, she says.

On Sunday, June 2, during ENDO 2024 in Boston, Diaz-Thomas and Stanley Andrisse, PhD, MBA, an endocrine scientist and assistant professor at the Howard University College of Medicine in Washington, D.C., will chair the session "Endocrine Care for Incarcerated Individuals." The session will feature talks from four other presenters, many of whom are formerly incarcerated experts in the field. Incarcerated individuals are often misunderstood, stigmatized, and even neglected when it comes to healthcare. A session like this has never been part of the **ENDO** program. "Endocrine care in prisons and jails is a topic that has not been discussed at the Endocrine Society meeting," Andrisse says. "Incarcerated and formerly incarcerated people are the underserved of the underserved population. They regularly get left out of conversations. We hope to center the voices of incarcerated and formerly incarcerated people."

Andrisse goes on to say that the objectives of this session are to briefly review the landscape of incarceration in the U.S. and its implications on health and healthcare; discuss prevalence, processes of care, clinical outcomes, and importance of postprison public health linkages for incarcerated individuals with diabetes, hormone sensitive cancer, and those requiring transgender care; and provide information regarding health



66 The Endocrine Society has a powerful voice in terms of healthcare and specifically endocrine care priorities. I hope to bring voice to the voiceless. **I hope to bring awareness of the disparities faced by incarcerated populations.**"

- STANLEY ANDRISSE, PHD, MBA, ASSISTANT PROFESSOR OF MEDICINE, HOWARD UNIVERSITY COLLEGE OF MEDICINE, WASHINGTON, D.C.

psychology practices that can assist with endocrine care of incarcerated persons.

"We hope to give an overall picture of the challenges that mass incarceration presents to our healthcare system and overall community well-being," Andrisse says. "Then we hope to provide specific insights to the challenges and lack of endocrine care inside prisons and jails."

"By the numbers, it is likely that you, your friend, neighbor, partner, or family member may have been or is connected to someone who is currently or formerly incarcerated," Diaz-Thomas says. "We also have formerly incarcerated persons that are brilliant endocrine scientists and physicians!"

A Voice for the Voiceless

Andrisse himself is a formerly incarcerated person, with three felony convictions, who was sentenced to 10 years in prison (as detailed in the September 2021 cover story of *Endocrine News*, as well as Andrisse's own memoir *From Prison Cells to PhD: It's Never Too Late to Do Good*). He now serves as an Endocrine Society Board member, where he liaises between the Board and one of two committees: the Advocacy and Public Outreach Core Committee (APOCC) and the Committee on Diversity and Inclusion (CoDI). "In these two committees, I brought up the issue of endocrine care in prisons and jails and that sparked multiple conversations," Andrisse says. "The chair of the Diversity committee, Alicia Diaz-Thomas, and I then submitted a session proposal that was accepted by the planning committee." And while this topic is novel for an **ENDO** session, Andrisse feels like this is a perfect venue to share stories of those who might not be able to tell them otherwise. "The Endocrine Society has a powerful voice in terms of healthcare and specifically endocrine care priorities," he says. "I hope to bring voice to the voiceless. I hope to bring awareness of the disparities faced by incarcerated populations."

One example of those disparities is, again, the overrepresentation of non-Hispanic Black and Hispanic men in correctional facilities, Diaz-Thomas says. "The disproportionate representation of non-Hispanic Black and Hispanic men in prisons and jails, persons who already tend to have disproportionately worse outcomes in relation to endocrine care due to systemic racism, only further compounds this problem," she says.

Another example: In April 2023, *The Appeal* ran a story about transgender women reporting self-harm at a men's prison in New Jersey when they were refused transfer to a women's facility. "Incarcerated people have been reported to perform 'self-surgeries' or self-mutilations after being denied transgender care," Andrisse says. "These types of stories need to be brought to the attention of endocrine specialists."

Limited Resources

Such stories also speak to the myriad challenges incarcerated people face when trying to access healthcare. Andrisse says that the overarching problem is the stigma and negative narrative associated with incarcerated people and how that stigma leads to either not caring about or not even caring to know about the dismal care these individuals are receiving. But the list of challenges goes beyond that.

For one, there are limited resources. Andrisse tells *Endocrine News* that correctional facilities often operate with limited budgets and resources, which can affect the availability of specialized medical equipment, medications, and qualified healthcare professionals.

Overcrowded prisons can make it difficult for healthcare providers to adequately assess and address the healthcare needs of each incarcerated individual, including those with endocrine conditions. And in some cases, according to Andrisse, prisons and jails can limit access to specialists, putting up a barrier to care for complex endocrine conditions.

These limited resources and limited access to specialists can often lead to a limited understanding of endocrine conditions,

even one as widespread and well-known as diabetes. "Care of endocrine conditions such as diabetes in prisons and jails can be improved, from screening to prevention to treatment to outcomes," Diaz-Thomas says. "Persons entering a prison or jail may be screened for such things as HIV or hepatitis B but not diabetes."

Incarcerated individuals also face inadequate mental health support. "Endocrine health can be closely linked to mental well-being," Andrisse says. "Inadequate mental health support within correctional facilities may negatively impact the management of endocrine conditions."

Diaz-Thomas also points to the fact that the incarcerated population is aging, thus increasing the burden of conditions that manifest later in life, many of which include endocrine conditions.

Then there are legal and policy issues. The Appeal report about the transgender women in New Jersey pointed out that the state has granted prison officials more power to deny transgender people's request to be incarcerated in facilities that align with their gender identity. "In October, New Jersey amended DOC policy to expand prison officials' authority to override the housing preferences of trans, nonbinary, or intersex prisoners," the report reads.

"Legal and policy issues, such as restrictions on certain medications or treatments, may limit the options available for managing endocrine disorders within the correctional system," Andrisse says.

Love and Facts

Policies like this grow out of the stigma these individuals face, even after they've been released. For Diaz-Thomas, the first step to facing down this stigma is to address the stereotypes





Our job as physicians, or other healthcare providers, is not to judge but to provide care and ease suffering where we can. Acknowledging our own bias and taking steps to mitigate bias can help us focus on our role in caring for people."

-ALICIA DIAZ-THOMAS, MD, MPH, PROFESSOR, UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER, MEMPHIS, TENNESSEE

that we have been presented with and have internalized about incarcerated persons. "Secondly, our job as physicians, or other healthcare providers, is not to judge but to provide care and ease suffering where we can," she says. "Acknowledging our own bias and taking steps to mitigate bias can help us focus on our role in caring for people. Finally, from a public health and systems perspective, we cannot ignore the current gaps in healthcare for incarcerated or formerly incarcerated persons that lead to otherwise preventable poor health outcomes and high need for ever more complex medical care."

Andrisse says he's focusing his talk on love and facts. "I try to center my life around love and facts," he says. "My research is based on a love and passion for what I do. A love for the people I seek to help. And presenting facts and data."

And when asked about what he would say to healthcare providers who may harbor some stigma or hesitation that bars them from optimally caring for incarcerated and formerly incarcerated individuals, Andrisse speaks love and facts: "We are all humans."

"This is an important topic that we have not discussed before," Diaz-Thomas says. "There is great potential here for endocrine physicians, health systems scientists, clinical researchers, and advocates to make a difference in this often neglected but large and growing population."

END 2024

Endocrine Care for Incarcerated Individuals Sunday, June 2, 2024 9:15 a.m. – 10:45 a.m.

Chairs:

Stanley Andrisse, MBA, PhD, Howard University College of Medicine, Washington, D.C.; Alicia Marie Diaz-Thomas, MD, MPH, University of Tennessee, Memphis, Tenn.

Healthcare in America's Prisons and Jails – Christopher Beasley, PhD, Tacoma, Washington; Noel Vest, PhD, Boston, Mass.; Deirdre James, MD, University of Tenn., Memphis, Tenn.

Endocrine Care in America's Prisons and Jails: Focus on Diabetes – Leonard E. Egede, MD, MS, Milwaukee, Wisc.

- BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE MARCH ISSUE, HE WROTE ABOUT THE CONFOUNDING ENIGMA BEHIND MONOGENIC OBESITY IN PEDIATRIC PATIENTS.

Society Endorses Legislation Protecting Access to Safe and Effective IVF Treatment

T n February, Alabama's State Supreme Court ruled that frozen embryos created during the in vitro fertilization process are "children" under state law. In vitro fertilization (IVF), the main type of assisted reproductive technology, involves extracting a woman's eggs, fertilizing the eggs in the laboratory, and transferring the resulting embryos into the woman's uterus. About 2.3% of all infants born in the United States each year are conceived using assisted reproductive



technology, according to the U.S. Centers for Disease Control and Prevention. The Society represents endocrinologists who treat and scientists who research infertility, and one of Endocrine Society's policy priorities is to protect access to reproductive healthcare and prevent criminalization of physicians who provide and patients who seek IVF treatment.

In the wake of the Alabama ruling, the state has since passed legislation that would prevent criminalization of physicians and patients but still upholds the notion that embryos are children. Meanwhile, the Endocrine Society has endorsed federal legislation that would protect access to assisted reproductive technology including IVF. The Access to Family Building Act (S.3612/H.R.7056), introduced by Sens. Tammy Duckworth (D-IL), Patty Murray (D-WA), and Rep. Susan Wild (D-PA), would ensure people can access safe, effective IVF and other assisted reproductive technologies to start or grow their families. However, this legislation has been blocked from consideration for now in the Senate by Sen. Cindy Hyde-Smith (R-MS).

There are other pieces of legislation that have been introduced in Congress aiming to protect IVF, but the prospects of passing these bills remain unclear. Even with public support for IVF, Sen. James Lankford (R-OK) also blocked consideration of additional legislation introduced by Murray that would widen access to IVF for all veterans. We have urged Congress to address access to IVF nationwide.

The Society will continue to advocate at the federal level for our members who treat and research infertility. We encourage members of Congress from both sides of the aisle to consider and support legislation to protect access to IVF and other assisted reproductive technologies. Our statement supporting access to safe and effective IVF treatment is available on the Endocrine Society website at: https://endocrinenews.endocrine.org/ endocrine-society-supports-federal-legislation-protectingivf-access/.

Congress Passes Legislation to Mitigate Medicare Physician Payment Cuts

n March 7, Congress passed legislation to provide some relief from Medicare physician payment cuts that took effect earlier this year. On January 1, the Centers for Medicare and Medicaid Services (CMS) instituted a 3.37% cut to all Medicare physician payments. The legislation passed by Congress will reduce this cut by about half (1.68%), which will provide some relief.

Our previous work last year resulted in the creation of a new add-on complex code that endocrinologists could use, and it

is estimated that endocrinologists consequently will see a 3% increase this year based on usage.

The Endocrine Society continues to urge Congress to pass comprehensive physician payment reform legislation to provide physicians with adequate reimbursement. We have urged Congress to pass legislation providing an inflation-based payment update based on the full Medicare Economic Index. Endocrine Society Advocacy Victory: Special Diabetes Program is Extended with Funding Increase n Friday March 8, Congress passed legislation reauthorizing the Special Diabetes Program (SDP). The legislation, which was signed into law by President Biden, extended funding for SDP through the end of the year.

SDP is made up of two components. SDP funds type 1 diabetes research through the National Institute of Diabetes and Digestive



U.S. Sens. Susan Collins (R-ME), left, and Jeanne Shaheen (D-NH), right, were "endocrine champions" in getting the SDP funded with an increase.

and Kidney Disease (NIDDK), and the Special Diabetes Program for Indians (SDPI), which is administered through the Indian Health Service, supports prevention, education, and treatment programs for type 2 diabetes for indigenous communities across the nation. Thanks to the advocacy efforts of Endocrine Society members, we secured the first funding increase for SDP in 20 years, from \$150 million per program per year to \$160 million per program per year.

The Endocrine Society made reauthorization of SDP a top legislative priority and led many advocacy efforts from online campaigns to Hill Days to congressional briefings. Just days before Congress considered this legislation, we brought our members to Washington, D.C., to meet with congressional offices to discuss the importance of reauthorizing the program. We also worked closely with the cochairs of the Diabetes Caucus to advocate for increased funding of SDP and are very grateful for the leadership of Senators Susan Collins (R-ME) and Jeanne Shaheen (D-NH) and Representatives Diana DeGette (D-CO) and Gus Bilirakis (R-FL) in championing for a funding increase.

The funding approved for SDP will expire at the end of 2024, and we will continue to urge Congress to pass a long-term extension of this critical program.

European Parliament Votes to Ban EDCs in Toys



On March 13, the European Parliament voted in favor of a resolution to amend the European Union's Toy Safety Regulation, including a ban on endocrine-disrupting chemicals (EDCs) using the hazard classes and categories that our members advocated.

The European Parliament amended the final proposal to strengthen regulations, consistent with the Endocrine Society's recommendations. First, the Parliament introduced a ban on PFAS and bisphenols specifically, building on efforts in other sectors such as food packaging. Second, the criteria for exemptions were narrowed, decreasing the likelihood that hazardous chemicals will be permitted in the future.

The Endocrine Society welcomes the resolution and commends the European Union's Commission and Parliament for advancing this important health-protective measure. We look forward to working with policymakers in the EU on swift implementation of the new regulation and efforts to reduce exposure to EDCs in other sectors of the economy.

Endocrine Society Policy Priorities Included in President Biden's Budget Request

n Monday, March 11, President Biden released his Fiscal Year (FY) 2025 budget request, a starting point for the appropriations process and reveals what his top priorities are for the next fiscal year.

The president's proposed budget includes several Endocrine Society policy priorities such as insulin affordability, increased funding for the National Institutes of Health (NIH), and coverage of intensive behavioral therapy as treatment for obesity. Here are some of the highlights:

Making Insulin More Affordable and Lowering Other Prescription Drug Prices: President Biden's proposed budget would expand the \$35 insulin co-pay cap currently available to Medicare beneficiaries to the commercial insurance market, making insulin more affordable for people on private insurance. It would also increase the number of drugs eligible for price negotiation and expand the \$2,000 out-of-pocket prescription drug cost cap beyond Medicare and into the commercial market. The Society strongly supports these proposals that align with the recommendations included in our position statement on insulin access and affordability.

Closes Research Gaps in Women's Health: The budget requests \$50.1 billion for the NIH, a 6% increase from FY23. Part of this budget will be put toward the White House Initiative on Women's Health Research, proposed by the Biden administration earlier this year. The Women's Health Research Initiative works across government agencies to better integrate women's health within the federal research portfolio. The budget would also double existing funding for the Office of Research on Women's Health at the NIH. This proposal aligns with both our continuous support for NIH funding and our advocacy for strengthened research on women's health.

Expands Coverage and Invests in Nutrition and Obesity Counseling Services: The budget requests \$4 million to expand and enhance access to Medicare coverage of nutrition and obesity counseling. The Society supports expanding access to Intensive Behavioral Therapy (IBT) for obesity, which though currently covered by Medicare has many provider restrictions. This proposal aligns with our support of expanding access to IBT, an effective lifestyle intervention for treating obesity.

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Supports Family Planning Services, Maternal Health, and Health Equity: The budget requests \$390 million for the Title X Family Planning program to increase the number of patients served from 1.7 million to 3.6 million. The Society joined the Family Planning Coalition in a letter urging Congress to support funding in Fiscal Year 2025 for the Title X Program.

The Endocrine Society applauds the administration for including our priorities in the budget request, but our work is not done. The president's budget is not law, but a request. Congress must still develop appropriations bills for FY 2025 and pass them before the new fiscal year begins on October 1.

We urge U.S. Endocrine Society members to amplify our message to support these priorities by joining our online campaign available at: www.endocrine.org/advocacy/take-action.

ENDO**GEAR**

From The Sound of It: The Latest in Ultrasound Tech

The use of ultrasound technology has a clear importance in the clinical practice of endocrinology, determining diagnostic and therapeutic decisions daily. It's hard to believe that in 2004, an article was published in *Thyroid* reporting the limited use of ultrasound by U.S. endocrinologists and stressed the need to adopt this technology. In those 20 years since publication, ultrasound examination has become essential to the practice of endocrinology with ultrasound systems having become essential in-office instruments for many clinical specialists. Here, we look at some of the latest developments in technology and explore some of the options available for your clinic's ultrasound needs.

COMPILED AND WRITTEN BY COURTNEY CARSON

Samsung V6 Ultrasound

Combining image clarity and advanced automated features, the Samsung V6 Ultrasound offers efficient, comprehensive imaging capabilities for daily ultrasound scanning needs. Introduced by Boston Imaging, the U.S. headquarters of Samsung's digital radiography and ultrasound, the V6 is the company's latest ultrasound system capable of delivering comprehensive imaging capabilities in 2D, 3D, and color image quality. The V6 ultrasound system is driven by Samsung's core imaging platform, Crystal Architecture[™], offering both enhanced image clarity and advanced automated tools. Designed to be budget friendly while meeting workflow and productivity needs, the V6 is adaptable in various medical settings through its remote access, simplified workflows, wide screen, and compact, powerful design with a battery option, increasing accessibility, and versatility for healthcare providers. **www.samsunghealthcare.com**

Konica Minolta SONIMAGE MX1 Platinum Ultrasound System

Konica Minolta's next-generation, compact point-of-care ultrasound system is the SONIMAGE® MX1 Platinum Ultrasound System. This system leverages an advanced imaging algorithm that achieves improved resolution of ultrasound images while maintaining optimum frame rates. Featuring an extended battery life that enables a continuous two-hour scan time, the MX1 allows clinicians to hand-

carry the system in an exam room, to a patient's bedside, or into a surgery suite. The MX1 can produce image quality of color and gray-scale modes, delivering speckle reduction and applying a smoothing effect to reduce graininess in the image, helping clinicians make better informed diagnoses and facilitate accurate interventions. www.healthcare.konicaminolta.us



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SonoSim

SonoSim's newest ultrasound machines use a proprietary multi-beam technology that increases small structure resolution and enhances border delineation for improved visualization of anatomy. The result is increased clarity in the near and far field, sharper definition of small structures, and improved differentiation of tissues. This technology enables endocrinologists to improve needle visualization on ultrasound, even when the needle angle is greater or less than 90 degrees from the skin's surface. SonoSim users also receive access to their no-cost ultrasound app featuring a library of 80+ on-demand interactive and multimedia courses combining regional anatomy, sonographic insight, practical imaging techniques, real patient cases, and helpful videos, all eligible for CME.

Mindray M8 Elite Ultrasound

The M8 Elite diagnostic ultrasound system offers users advanced system processing and newly designed adaptive algorithms aimed to increase overall performance. Designed with an ergonomic, slim profile, this compact mobile ultrasound system can be used by the bedside, in the office, or in the interventional suite. Combined with single crystal transducers and 3T[™] technology, the M8 Elite is based on Mindray's new generation ultrasound platform. This new platform, mQuadro, is an innovative imaging architecture that incorporates powerful, highspeed digital signal processing and intelligent software algorithms resulting in rapid image acquisition with fewer keystrokes, better image uniformity from near to far field, and increased exam efficiency. www.mindray.com





LOGIQ E10

The LOGIQ E10 by GE provides access to advanced tools in an easy-to-use design aimed at helping clinicians deliver confident care in even more places. The E10 provides enhanced precision imaging including 2D Shear Wave Elastography that enables quantitative assessment of tissue elasticity and Contrast Enhanced Ultrasound (CEUS) to help clearly visualize tissue structure and lesion vascularity for increased confidence in lesion detection and characterization. The E10 aims to create enhanced workflow by improving exam efficiency through advanced ergonomics with easy-to-reach controls (including an adjustable floating keyboard and an articulating monitor), increased mobility with an onboard battery that keeps the device ready to image at any time, and Smart Apps including Remote Control that allows system operation from an Android® tablet or phone and Photo Assistant that allows the user to acquire and include photos of relevant anatomy in reports.

www.gehealthcare.com

Over the past two decades, ultrasonography has become a vital part of our practice, and we look forward to seeing the continued benefits that will arise as endocrinologic ultrasound increases diagnostic confidence, improves efficiency, and decreases overall medical costs.

- CARSON IS A FREELANCE WRITER BASED IN BIRMINGHAM, ALA., AND HAS BEEN PROVIDING *ENDOCRINE NEWS* WITH VARIOUS TRAVELOGUES, ENDOGEAR COLUMNS, AND MORE FOR SEVERAL YEARS.