ENDO 2025 SAN FRANCISCO, CALIFORNIA, JULY 12 – 15, 2025

APRIL 2025

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

disrupting the Disruptors

Endocrine News talks to the scientists studying the ever-present endocrine-disrupting chemicals

Andrea C. Gore, PhD

MIND BENDING:
How endocrine-disrupting chemicals could affect brain development

Andrea C. Gore, PhD, discusses her recent *Journal of the Endocrine Society* paper, which found that early-life exposure to certain EDCs could lead to behavioral problems later in life.

SILENT DISRUPTORS:
The impact of environmental chemicals on the thyroid

The **ENDO 2025** session, "Thyroid Disruptors," examines how EDCs affect thyroid function in pregnancy and childhood and their link to thyroid cancer.

ENDOCRINE SOCIETY
Hormone Science to Health

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ENDOCRINE SOCIETY
Hormone Science to Health

Science, Advocacy, and Publishing

March 2025 has seen "Stand up for Science" events take place in cities in both the U.S. and France. Reliable, reputable research is essential for fostering advances in human health. The Endocrine Society is extremely active in advocating for science funding and health policy, with particular emphasis on the endocrine space. The Society also has a long tradition of communicating science in our highly regarded journals, with *Endocrinology* being first published in 1917.

"Publish or perish," goes the old saying. Whether that's true, Endocrine Society members are often highly motivated to publish their research in scientific journals to advance the field. Publishing also offers pathways to peer recognition and professional development.

Many outstanding journals around the world exist for the benefit of clinicians and researchers. Unfortunately, some are not what they may first appear to be.

Unscrupulous entities troll many scientific and medical fields, including endocrinology, with pitches to publish in journals that lack even minimal scientific rigor.

Having trust in the scientific process is crucial to maintaining an accurate understanding of the medical conditions that we study and treat. In addition to being potentially fraudulent, bad actors pose the threat of diminishing the very integrity of the work that we do.

Avoiding Scams

It goes without saying that we must be on guard to avoid falling prey to scams, both for personal reasons and for the reputation of our field. Unfortunately, bad actors are not rare.

The Endocrine Society recently warned members that an entity called Directive Publications is soliciting manuscript submissions and offering editorial board membership for a publication named *Journal of Clinical Endocrinology and Metabolism*.

Our diligent journal staff stated this entity is not affiliated with or sanctioned by the Endocrine Society and our official journal, ***The Journal of Clinical Endocrinology & Metabolism***®.

"We cannot verify the authenticity or accuracy of any information provided by it," the Society notes.

In the warning, our journal staff also pointed out the subtle differences that aim to deceive. For instance, the Society's journal uses "The" and an ampersand (*The Journal of Clinical Endocrinology & Metabolism*®) in official communications.

This kind of deception can easily fool the best of us. It's prudent to review all solicitations carefully, including for journal names resembling the Society's other journals:

- *Endocrinology*®
- *Endocrine Reviews*®
- *Journal of the Endocrine Society*®
- *JCEM Case Reports*®

Predatory Publishing

We offer resources to explain what's behind predatory publishing. The term broadly refers to the publication of purportedly scholarly content in which the journal or publisher approaches potential authors in a deceptive or fraudulent manner.

The deceptive pitch usually comes in the form of an email solicitation with an offer to get published, often using the author publication charge business model to collect payment.

The offer comes without any regard for quality assurance in editing, peer review, author services, or the fate of the author's article in the indexed scholarly literature. Predatory journals or publishers may also deceive academics into serving as editorial board members or peer reviewers.

> The Society's journals adhere to the highest editorial and scientific standards. Our editors and editorial board members are vetted for their expertise and adherence to strict publishing standards and peer review.

Our journal staff has taken steps to protect research integrity with stronger digital identity verification for authors.

As global publishing continues to move to a digitally driven economy, with numerous vulnerable points of entry for bad actors, publishers and institutions have to adapt to the need for enhanced author verification.

Read the editorial by Professor Paul Stewart, editor-in-chief of *The Journal of Clinical Endocrinology & Metabolism*, on new journal requirements for manuscript submissions.

Fake Conferences

In a similar vein, the internet is awash with sites for scientific conferences that are bogus or offer little to no value. Warning signs include solicitations coming from unknown organizers with no verifiable academic background; a rapid acceptance rate of papers with little to no scrutiny; bogus endorsements from prominent academics and scientists.

Researchers pay money to speak at these events, but there is no adherence to quality of presentations or the abstract submissions, resulting in no benefit for the advancement of science.

George Washington University provides an informative webpage on predatory conferences and journals, offering excellent advice on what to be aware of.

Ensuring Integrity and Reliability

One clear way to avoid being scammed is to engage with the Society's journals and our **ENDO** conference through our official website and emails directly from us.

This year, **ENDO 2025** takes place July 12 – 15 in San Francisco, Calif. **ENDO** is far and away the premier annual meeting of endocrinology research and clinical care, attracting renowned investigators, expert clinicians, and educators from all over the world.

The Society's journals adhere to the highest editorial and scientific standards. Our editors and editorial board members are vetted for their expertise and adherence to strict publishing standards and peer review. Members also enjoy the ability to publish free of charge in our journal *Endocrinology*.

It can be a buyer-beware world! But with a little bit of caution, we advance the field of endocrinology whilst also achieving personal progress.

John Newell-Price, MD, PhD, FRCP
President, Endocrine Society

EDCs: Disrupting the Disruptors

They are insidious, and it seems like there's no escape from them no matter what your age, race, or where you live. I'm talking about endocrine-disrupting chemicals (EDCs) found in an unending number of household and environmental items and cause often irreparable damage to the endocrine system. Therefore, this issue of *Endocrine News* is devoted to not just the science of EDCs, but to the scientists studying these substances, their impacts, and even potential solutions.

In **"Silent Disruptors"** on page 20, Kelly Horvath takes a deep dive into the **ENDO 2025** session entitled "Thyroid Disruptors," which focuses on how these chemicals affect the thyroid. The seminars give a pretty in-depth look at various mechanisms for thyroid disruption; the effects of EDCs on growth and development in the fetus and in early childhood; and an examination of the role EDCs play in thyroid cancer, including significant data related to health disparities. "It is well established that many EDCs can alter maternal thyroid hormone levels and even disrupt the thyroid hormone axis," according to session chair Joris A. J. Osinga, MD, PhD candidate, Erasmus University Medical Center, Rotterdam, The Netherlands. "Since these chemicals are produced on such a large scale and persist in the environment, their impact goes beyond just individual cases. This makes high-quality, independent research essential to truly understand these associations." *The "Thyroid Disruptors" symposium takes place on Saturday, July 12 from 10:45 a.m. to 12:15 p.m. during* ***ENDO 2025*** *in San Francisco.*

From the thyroid, we move up a bit to the brain to explore a new study published recently in our own *Journal of the Endocrine Society* that examined the impacts of early-life exposures to a class of EDCs called polychlorinated biphenyls. In **"Mind Bending"** on page 26, Senior Editor Derek Bagley talks with the study's primary author, Andrea C. Gore, PhD, one of the Society's many leaders in studying these compounds and their impact. Even though these compounds have been banned for decades, they are still persistent in the environment. Gore also says that her team's study results show that biomedical research should really include both male and female subjects whether in animals or humans. "The history of science has largely been based on work in males because females are considered more 'complicated' due to hormone fluctuations and therefore more difficult to study," she says. "However, considering that half the population of humans is females, it's essential to consider sex as a biological variable."

APRIL 2025

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THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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Prepress & Printing: **The Sheridan Group**
www.sheridan.com

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The mission of the Endocrine Society is to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

Endocrine News® is published 12 times a year by the Endocrine Society, 2055 L Street, NW, Suite 600, Washington, DC 20036
Phone 202-971-3636 • Fax 202-736-9708
www.endocrine.org.

Print ISSN 2157-2089 Online ISSN 2157-2097
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On page 44, Glenda Fauntleroy Shaw speaks with Lori T. Raetzman, PhD, the 2025 recipient of the Endocrine Society's Sydney Ingber Award for Distinguished Service in **"Basic Research Champion."** Raetzman not only discusses how it felt to receive the award but also the changing dynamics facing so many scientists, especially trainees, in the endocrine research realm. She is even finding challenges in her own research lab that looks at the impacts of environmental chemicals on female reproductive aging. "The upheaval in federal funding for scientific research is so detrimental to being able to plan a multi-year research program," she says. "You need consistent funding to get to the end of the aging part of these studies." She adds that she is also concerned for her students: "They are all at different places in their training," she explains. "The ones who have started recently, I worry if my grants don't get their next year of funding how they will be supported financially. My lab is making some amazing discoveries in congenital hypopituitarism and environmental impacts on pituitary function. I try to stay focused on making sure the lab is motivated to push forward, especially in the face of uncertainty."

Speaking of concerns of trainees and other endocrinologists who may be in the early stages of their careers, Milay Luis Lam, MD, FTOS, discusses the many options available to early-career endocrinologists that they may have not considered in this month's Early-Career Corner article, **"Navigating Alternative Academic Pathways"** on page 38. Lam shares her journey that began in Peru and led her to her current role as a division chief and medical director in Maryland. Lam shares her story on behalf of the Endocrine Society's Early-Career Special Interest Group and states that the next generation of physicians needs to be apprised of the diverse career options available to them. "Many may feel compelled to leave the profession because they're unaware of the alternatives available to them," she laments. "By showcasing the variety of paths within our field, we can help them stay engaged in a career they've chosen… . This is still a great time to work in medicine!"

Next month, *Endocrine News* is planning to focus on bone and mineral, including the latest research, as well as session highlights awaiting **ENDO 2025** attendees in San Francisco July 12 – 15! As always, feel free to reach out to me if you have any questions or ideas for future articles: **mnewman@endocrine.org**.

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

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Nanette Santoro, MD

Santoro Elected 2026 – 2027 Endocrine Society President

Endocrine Society members elected Nanette Santoro, MD, of the University of Colorado School of Medicine in Aurora, Colo., as its 2026 – 2027 president. She will serve as president-elect for a year beginning in July 2025 before becoming president in June 2026.

Santoro has served as E. Stewart Taylor Chair of Obstetrics & Gynecology at the University of Colorado School of Medicine since 2010. She is a well-recognized practitioner, dedicated mentor, and leading researcher on studies of women with premature and age-appropriate menopause.

She has held many roles with the Endocrine Society, including serving as vice president of clinical science, an author on two women's reproductive health Clinical Practice Guidelines, and chair of the Society's Scientific Statement on bioidentical hormones. She also won the Society's 2016 Laureate Award for Outstanding Mentorship.

The Society also selected four other members to join its Board of Directors beginning in July 2025:

Cherié Butts, PhD

Cherié Butts, PhD, Biogen, Cambridge, Mass.: Butts is medical director of the Therapeutics Development Unit at Biogen. Prior to Biogen, she conducted research on neuroendocrine regulation of immune responses and served as a reviewer of drug/biologics applications at the U.S. Food and Drug Administration (FDA). She is passionate about providing opportunities for individuals from all backgrounds to contribute to biomedical research. She was previously chair of the Society's Nominating Committee and a member of its Committee on Diversity and Inclusion.

Leonor Corsino, MD

Leonor Corsino, MD, Duke University School of Medicine, Durham, N.C.: Corsino is currently an associate professor in the Department of Medicine, Division of Endocrinology, Metabolism, and Nutrition, and associate professor of population health sciences at the Duke University School of Medicine. Her research focuses on diabetes and related conditions, Hispanic/Latino populations, implicit bias, and health disparities. Corsino has served on the Endocrine Society's Clinical Endocrinology Update Committee and its Committee on Diversity & Inclusion.

Patricia Morris, PhD, MS

Patricia Morris, PhD, MS, The Rockefeller University, New York, N.Y.: Morris is a guest investigator, RNA Molecular Biology, at The Rockefeller University. She serves as a special series editor, "One Health," for the *Federation of American Societies for Experimental Biology (FASEB) Journal*/Wiley. She also is a senior scientist and health policy adviser for Secondcell Bio, a biotech company with a global health focus. She is a member of the Endocrine Society's Advocacy and Public Outreach Core Committee and was previously a member of its Research Affairs Core Committee and on the editorial board for the Society's basic science journal, *Endocrinology*.

Heather Patisaul, PhD

Heather Patisaul, PhD, National Institutes of Health (NIH), Environmental Health Sciences (NIEHS), Durham, N.C.: Patisaul is the scientific director of the Division of Translational Toxicology at NIEHS. Her research lab explores the mechanisms by which endocrine-disrupting chemicals (EDCs) alter neuroendocrine pathways in the brain related to sex-specific physiology and behavior. She has held many roles within the Endocrine Society, currently serving as a member of its bisphenol A (BPA) Task Force and as chair of its Organization for Economic Co-operation and Development (OECD)/Environmental Protection Agency (EPA) Task Force.

Board members will begin serving their three-year terms following **ENDO 2025**. The Society's annual meeting will take place July 12 – 15, 2025, in San Francisco, Calif.

PHOTO: Eric Sucar, University of Pennsylvania

J. Larry Jameson, MD, PhD

Jameson's Presidency Extended at the University of Pennsylvania

MEMBERS in the NEWS

On March 13, the Board of Trustees of the University of Pennsylvania voted unanimously to appoint Endocrine Society Past-President J. Larry Jameson, MD, PhD, who has served as interim president since December 2023, president of the University for a term that will run through June 30, 2027.

In announcing the appointment, Chair of the Board of Trustees Ramanan Raghavendran stated, "The challenges facing higher education today are among the most significant ever encountered by American universities. Given Penn's complexity, size, location, and visibility, these issues have profound implications for our community. In such a moment, there is nothing more important than leadership. Penn has been very fortunate to have Larry Jameson at the helm during this time. I am pleased that our Board can recognize his exceptional performance, and acknowledge his inspirational leadership and vision, by formally extending his appointment to June 30, 2027." Before his appointment as interim president in December 2023, Jameson served as the university's executive vice president for the Health System and as dean of the Raymond and Ruth Perelman School of Medicine since July 1, 2011.

"I am profoundly honored by this vote of confidence from our Board of Trustees," Jameson says. "I look forward to continuing the vital work of our faculty, staff, students, alumni, and community members to uphold Penn's mission of utilizing knowledge for the greater good. I am confident that our University's future is bright as we prioritize our core values of excellence, freedom of inquiry and expression, and respect. I am deeply committed to this extraordinary institution, and it is an honor to serve as Penn's President."

Jameson, a past recipient of the Endocrine Society's Fred Conrad Koch Lifetime Achievement Award and the inaugural editor-in-chief of the *Journal of the Endocrine Society*, has been at the helm of the medical community in one form or another.

Jameson received his medical degree with honors and a doctoral degree in biochemistry from the University of North Carolina in 1981. He completed clinical training in

internal medicine and endocrinology at the Massachusetts General Hospital in Boston.

An accomplished physician-scientist, Jameson has pioneered studies of the genetic basis of hormonal disorders, and he is the author of more than 350 scientific articles and chapters. He is an editor of *Harrison's Principles of Internal Medicine*," the most widely used textbook of internal medicine. His research has been published in leading peer-reviewed journals, including *The New England Journal of Medicine, Nature Genetics, Science,* and the *Journal of Clinical Investigation*.

Aside from his tenure as the Society's president, Jameson also served as the president of the Association of American Physicians and recently chaired the Board of Directors of the American Association of Medical Colleges.

Endocrine Society Statement on HHS Restructuring, Mass Firings, and Scientific Review

A major reorganization of the U.S. Department of Health and Human Services (HHS) — including massive cuts to the federal workforce — threatens scientific progress that drives our economy and improves the public's health.

Slashing federal funding and staff will hobble the very agencies that fuel medical discoveries and approve new treatments.

In addition, the administration is introducing a new level of administrative review of grants at the National Institutes of Health (NIH) that will politicize the process of awarding scientific grants.

These actions reflect a disregard for congressional appropriations and authorizing processes as well as stakeholder experience, and will allow politicians, not scientific experts, to set research priorities.

The Endocrine Society is concerned actions of this scale will hinder HHS's important public health functions and research related to chronic diseases like diabetes and obesity and other endocrine conditions, including thyroid disease, osteoporosis, infertility, endocrine cancers, and growth disorders.

After recent efforts to freeze and rescind federal funding, the Endocrine Society worries the plan to reorganize HHS is another example of the administration unilaterally deciding not to spend funds that Congress lawfully appropriated. It is not clear that consideration was given to the impact on programs with proven records of protecting the public's health.

Laying off 1,200 NIH staff members will affect the agency's ability to fulfill its research responsibilities and slow advancements in endocrine science and other fields. Reduced staffing will impede the NIH's ability to review grant applications, fund research and run needed programs.

Biomedical research performed at and supported by the NIH is responsible for improving the public health of millions of Americans and people around the world. The loss of staff will leave a gap of knowledge, institutional history, and expertise that will damage the research landscape.

The Society also is alarmed by media reports that NIH research grants will be reviewed by HHS and the Department of Government Efficiency (DOGE). Research funding decisions should be made based on scientific merit and public health priorities, not the politics of the day. Introducing political influence into the research process creates an environment where scientists cannot rely on consistent, stable funding sources.

Impeding scientific research and the development of new treatments will ultimately harm millions of people who need medical care for endocrine conditions.

The Endocrine Society calls on the administration to work with Congress and the health and research communities to improve the efficiency of health-related agencies in a transparent, thoughtful manner. The current unilateral approach risks harm to the public's health and research enterprise. EN

CONGRATULATIONS TO OUR NEW 2025

PRESIDENT-ELECT

We are pleased to announce the new President-Elect who will be joining our leadership team at the conclusion of ENDO 2025. Please join us in congratulating and welcoming our future leader!

Nanette Santoro, MD
University of Colorado
Aurora, CO

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Smarter Diagnosis: AI Enhances Clinical Assessment of Hypercortisolism

A new study from *The Journal of Clinical Endocrinology & Metabolism* has demonstrated how artificial intelligence (AI) can enhance the accuracy of diagnosing Cushing's syndrome (CS), a rare but serious endocrine disorder caused by excessive cortisol production.

Cushing's syndrome is characterized by a broad spectrum of symptoms, including weight gain, hypertension, diabetes, and osteoporosis, many of which overlap with more common conditions such as metabolic syndrome. Because of this, misdiagnosis or delayed diagnosis is common, making early and accurate detection crucial. The Endocrine Society guidelines suggest screening for CS in adult patients with unusual features for their age (such as easy bruising, moon face, purple stretch marks, and unusual fat pads), as well as in individuals with those multiple or progressive chief complaints that best discriminate CS. These guidelines recommend three key screening tests to detect hypercortisolism: the 1-mg overnight dexamethasone suppression test (DST), which measures how cortisol levels respond to a steroid dose; urinary free cortisol (UFC), which evaluates cortisol excretion over 24 hours; and late-night salivary cortisol (LNSC), which detects abnormal cortisol rhythm (cortisol levels should be low at nighttime).

The current study, "Clinical and Biochemical Data for the Diagnosis of Endogenous Hypercortisolism: The 'Cushingomic' Approach," which analyzed 655 patients, found that traditional screening tests remain highly effective, but integrating AI-based analysis can further refine diagnosis, reducing false positives and improving clinical decision-making. To refine the diagnosis of Cushing's syndrome, the study authors applied principal component analysis, K-means clustering, and neural network modeling. These AI-driven techniques helped analyze not just cortisol levels, but also patient comorbidities, signs, and symptoms to create a more comprehensive diagnostic approach.

The study confirmed that DST and UFC were slightly superior to LNSC in diagnostic accuracy. However, patients with adrenal incidentalomas (AI) who had mild cortisol overproduction required a higher DST threshold (196 nmol/L) to distinguish them from true Cushing's syndrome cases. The most groundbreaking finding was the performance of a neural network model, which combined cortisol screening tests with clinical presentation data to predict CS with 99% precision and 86% accuracy. This suggests that AI-assisted analysis could help streamline diagnosis, guide treatment decisions, and reduce the burden of unnecessary testing on patients.

The team lead by Filippo Ceccato, MD, PhD, grouped patients without CS into three distinct clusters: 1. Older patients with osteoporosis and abnormal screening tests, 2. Individuals with hypertension and metabolic conditions (obesity, diabetes), whose symptoms could mimic CS, and 3. Younger individuals with a low likelihood of overt CS. By distinguishing these groups, doctors can avoid unnecessary testing and false-positive results in patients who do not actually have CS.

While traditional screening tests remain effective, this study highlights the growing role of AI in endocrinology. By integrating machine learning and clinical expertise, doctors can improve early detection and accurate diagnosis of conditions like CS, leading to better patient outcomes and more personalized treatment strategies.

As AI-driven models like the 'Cushingomic' approach become more refined, they could transform how endocrine disorders are diagnosed, making healthcare more precise, efficient, and accessible. — *Jackie Oberst*

"By integrating machine learning and clinical expertise, doctors can improve early detection and accurate diagnosis of conditions like Cushing's syndrome, leading to better patient outcomes and more personalized treatment strategies."

The Silent Weight of Pollution: Link Between Dioxin Exposure and Increased Obesity Risk in U.S. Adults Identified

The World Health Organization reports that obesity affects one in eight people globally, making it a major public issue. Yet, obesity is not just about diet, exercise, and genes — something else must be afoot. Recently, evidence has pointed to an invisible but powerful culprit: dioxins and dioxin-like polychlorinated diphenyls (DL-PCBs), according to "Association Between Mixed Exposure to Dioxins and Dioxin-Like Polychlorinated Biphenyls and Obesity Among U.S. Adults," a new study published in *The Journal of Clinical Endocrinology & Metabolism*.

Dioxins and DL-PCBs are toxic chemicals commonly released through industrial processes such as waste incineration, chemical manufacturing, and pesticide production. Once released into the environment, they persist for decades, accumulating in the food chain and ultimately being stored in human fat tissue. While previous studies have suggested a potential link between dioxins and obesity, this study is among the first to assess the combined effects of these pollutants on body weight.

Researchers from China led by Zhao-Xing Gao, et. al, analyzed data from 852 U.S. adults in the 2003 – 2004 cohort of the National Health and Nutrition Examination Survey (NHANES), a series of ongoing health-related surveys conducted by the U.S. Centers for Disease Control and Prevention, measuring blood levels of nine types of dioxins and DL-PCBs. Using advanced statistical methods — including generalized linear regression, weighted quantile sum (WQS) regression, and Bayesian kernal machine regression (BKMR) — they evaluated the relationship between chemical exposure and obesity.

The findings were striking: Combined exposure to these environmental pollutants significantly increased the risk of obesity, with one compound, 1,2,3,4,6,7,8-hpcdd, appeared to have the greatest impact. Even more troubling, the study suggested that these chemicals could be disrupting metabolism through their effects on glycated hemoglobin A1c (HbA1c), a key marker of blood sugar regulation.

The study provides strong evidence that exposure to dioxins and DL-PCBs is not just correlated with obesity but may also actively contribute to weight gain by disrupting metabolic processes, further cementing their identity as endocrine-disrupting chemicals. Involvement of HbA1c suggests that these pollutants interfere with blood sugar regulation, potentially leading to insulin resistance — a known factor in type 2 diabetes and obesity.

"These findings highlight the importance of environmental factors in obesity," the researchers wrote. "Current public health strategies focus primarily on diet and exercise, but reducing exposure to pollutants may also be necessary for effective obesity prevention."

Although avoiding dioxins and DL-PCBs is impossible due to their widespread presence, experts suggest several ways to reduce exposure. Individuals should be mindful of food sources; as dioxins accumulate in animal fats, consumption of lean meats, low-fat dairy, and plant-based foods may help reduce intake. Additionally, people should choose organic and locally sourced foods as some pesticides contain dioxin-like compounds. Lastly, folks need to stay informed about local environmental risks, especially communities near industrial sites or contaminated water sources.

As obesity rates continue to rise, this study underscores the need for a broader approach to tackling the epidemic — one that considers not just diet and lifestyle, but also environmental pollutants that may be influencing metabolism at a deeper level. — *Jackie Oberst*

"As obesity rates continue to rise, this study underscores the need for a broader approach to tackling the epidemic — one that considers not just diet and lifestyle, but also environmental pollutants that may be influencing metabolism at a deeper level."

> As regulatory agencies consider stricter limits on PFAS in drinking water and consumer products, understanding the full scope of these chemicals' effects is crucial for public health policy and personal well-being.

Exposure to 'Forever Chemicals' May Affect Thyroid Health

A recent study entitled "Association Between Per- and Polyfluoroalkyl Substance Exposures and Thyroid Homeostasis Parameters," published in *The Journal of Clinical Endocrinology & Metabolism*, has found that exposure to per- and polyfluoroalkyl substances (PFAS) — a group of synthetic chemicals used in industrial and consumer products — may alter thyroid hormone sensitivity, potentially affecting metabolism and overall endocrine health.

PFAS chemicals, often called "forever chemicals," can accumulate over time, leading to widespread exposure through contaminated water, food, and air. Thyroid hormones are essential for metabolism, energy regulation, and overall health. Disruptions in thyroid function have been linked to weight gain, fatigue, cardiovascular issues, and hormonal imbalances. Results from this study raises concerns that chronic exposure to PFAS — long known to be endocrine-disruptive chemicals — could have long-term effects on thyroid health and metabolism.

Previous studies have mostly focused on the disruption effect of PFAS and individual thyroid hormones. In this study, researchers from The Second Affiliated Hospital of Air Force Medical University, Shaanxi, China, used the National Health and Nutrition Examination Survey (NHANES), a program run by the U.S. Centers for Disease Control and Prevention that assesses the health and nutritional status of U.S. adults and children. The team analyzed blood serum data from 2,386 adults in NHANES across two cycles (2007 – 2008 and 2011 – 2012) to examine how exposure to six PFAS correlates with central and peripheral thyroid hormone sensitivity.

Statistical models confirmed a strong association between combined PFAS exposures and altered thyroid function. In particular, PFOA had the strongest impact among all PFAS analyzed. Additionally, the researchers found that PFAS exposure is linked to changes in peripheral thyroid hormone sensitivity but not central thyroid regulation. Higher levels of four specific PFAS chemicals — perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorononanoic acid (PFNA), and perfluorohexane sulfonic acid (PFHxS) — were associated with increases in the ratio of free triiodothyronine (FT3) to free thyroxine (FT4) and the sum activity of peripheral deiodinases (SPINA-GD). The findings suggest that PFAS exposure may interfere with how the body converts and processes thyroid hormones at the peripheral level, rather than directly affecting thyroid-stimulating hormone (TSH) regulation from the brain via the pituitary gland and hypothalamus.

While this study does not confirm a direct cause-and-effect relationship, it adds to growing concerns about PFAS chemicals and their potential impact on endocrine function, the authors write, adding that "caution should be exercised in the application of compounds as an alternative for PFAS [e.g., Cl-PFESA]" as research has found some also impact the thyroid.

This study highlights the need for further research into the long-term health effects of PFAS exposure, particularly its impact on the endocrine system. As regulatory agencies consider stricter limits on PFAS in drinking water and consumer products, understanding the full scope of these chemicals' effects is crucial for public health policy and personal well-being.

Although PFAS are widespread, individuals can take steps to minimize exposure, such as using activated carbon and reverse osmosis filters to reduce PFAS contamination in drinking water, opting for stainless steel, cast iron, or ceramic alternatives to nonstick cookware, reducing processed food consumption as PFAS can be found in food packaging materials, especially grease-resistant wrappers, and reading labels of personal care products like cosmetics, waterproof clothing, and stain-resistant fabrics as some contain PFAS. — *Jackie Oberst* EN

> It's when you look at the body of data as a whole that things become really interesting. Endocrine physiology requires the integration of multiple coordinated signals. If there are small changes to those signals induced by [endocrine-disrupting chemicals], the integration is disrupted. **We referred to this in a previous *Journal of the Endocrine Society* paper as 'dis-integration and reconstitution.' The current study adds further evidence that these processes are being induced by early life EDCs."**

Andrea C. Gore, PhD, professor of medicine and Vacek Distinguished University Chair in Pharmacology, University of Texas, Austin, discussing her recent JES paper on on how EDCs could potentially impact brain development in **"Mind Bending"** on page 26.

The number of people who live in the 2,168 counties of the United States without a practicing endocrinologist.

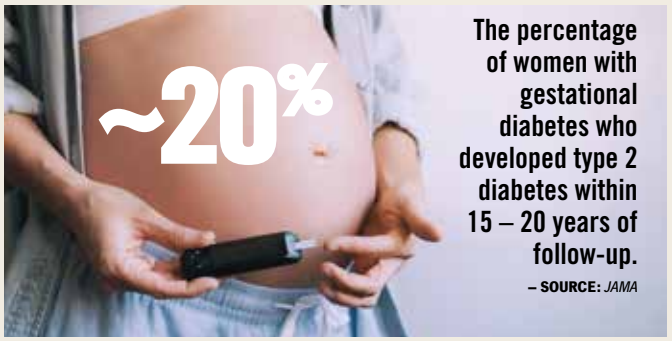
– **SOURCE:** MEDSCAPE

Percentage of diabetes specialists/endocrinologists who feel that they are fairly compensated.

– **SOURCE:** MEDSCAPE PHYSICIAN COMPENSATION REPORT 2024

Of women diagnosed with PCOS, one in two show clinically relevant symptoms of depression.

– **SOURCE:** *SCIENTIFIC REPORTS*



The percentage of women with gestational diabetes who developed type 2 diabetes within 15 – 20 years of follow-up.

– **SOURCE:** *JAMA*

The number of patients with diabetes who will be covered by the British Columbia and the Canadian government's new four-year, $670 million pharmacare agreement, giving universal access to diabetes medications. – **SOURCE:** *THE CANADIAN PRESS*

81%

Percentage of physicians, out of 600+ surveyed from around the world, who believe that technical proficiency is as important as clinical expertise. – **SOURCE:** SERMO BAROMETER

ENDO 2025

We hope to see you at **ENDO 2025**, taking place July 12 – 15, 2025, in **San Francisco, Calif.** 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.

The **ENDO 2025** education program features:

- **Three plenary sessions:** Genomics and Healthcare, Innovative Approaches in Obesity Care: From Molecules to Society, and Women's Reproductive Health: Aging and Environment
- **More than** 75 symposia sessions
- **More than** 40 Meet the Professor sessions
- **Four** Master Clinician panels
- **Six** Meet the Scientist sessions
- **Four Basic Science Pathways**, including Diabetes and Metabolism; Neuroendocrinology; Nuclear Receptors and Signaling; and Reproductive Endocrinology
- And a robust poster hall for accepted scientific abstracts.

https://www.endocrine.org/meetings-and-events/endo-2025

Lab Manager Leadership Summit

Denver, Colorado
April 29 – May 1, 2025

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 include dealing with burnout, incorporating automation into your lab, lab operations, effective communication, and much more. An interactive Q&A will follow each session. Attendees will also be able to participate in hands-on workshops and roundtable discussions where they will receive focused advice and learn from real-life examples of leadership success. This event will also feature a special track focused on lab safety, as well as a track geared toward those who work in the clinical lab.
https://www.labmanager.com/lab-manager-leadership-summit-30946

PES 2025 Annual Meeting

National Harbor, Maryland
May 15 – 18, 2025

The Pediatric Endocrine Society's (PES's) Annual Meeting brings together a diverse international community of over 1,000 clinicians, researchers, and trainees to share the excitement of new ideas, establish new friendships, and learn the latest insights covering the wide scope of this diverse field.
https://pedsendo.org/

AAES 2025 Annual Meeting

Milwaukee, Wisconsin
May 17 – 19, 2025

American Association of Endocrine Surgeons (AAES) 2025 Annual Meeting attendees can look forward to dynamic speakers, presentations of innovative research, opportunities to connect with colleagues, and informative panel discussions. 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 2025 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 Milwaukee 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/2025-annual-meeting

ADA 85th Scientific Sessions

Chicago, Illinois
June 20 – 23, 2025

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://www.acla.com/

ASBMR 2025 Annual Meeting

Seattle, Washington
September 5 – 8, 2025

The ASBMR Annual Meeting is the world's largest and most diverse meeting in the bone, mineral, and musculoskeletal research field, attracting more than 2,500 attendees from more than 50 countries, including clinicians and researchers, representing all career levels and specializing in a variety of disciplines. The ASBMR Annual Meeting boasts ofnearly 100 education sessions and 1,000 poster presentations in four information-filled days. Upon returning home from the meeting, attendees will be able to discuss with confidence the most current and significant advances in biomedical and clinical research and develop and apply new and enhanced strategies for treatment and care of patients.
https://www.asbmr.org/annual-meeting

INTERNATIONAL **ITINERARY**

SICEM 2025

Seoul, Republic of Korea
May 1 – 3, 2025

The 13th Seoul International Congress of Endocrinology and Metabolism (SICEM) in conjunction with the 44th Annual Scientific Meeting of the Korean Endocrine Society will serve as an essential opportunity to explore the future of endocrinology in the face of new challenges. The program will feature a diverse array of lectures and symposiums covering topics ranging from fundamental research to the latest clinical guidelines, along with a wide range of discussions. Additionally, it will provide a valuable chance to engage with globally renowned speakers and showcase your research on an international stage. This congress is expected to serve as a platform not only for academic advancement but also for exploring new possibilities for global collaboration. Building on past achievements, we aim to take a step forward by expanding the horizons of endocrinology through creative and innovative approaches, paving new paths for the next generation.
https://www.sicem.kr/about/overview.php

PHOTO: Pcala/Shutterstock.com

Joint Congress of ESPE and ESE 2025

Copenhagen, Denmark
May 10 – 13, 2025

The first ever joint congress between the European Society for Paediatric Endocrinology (ESPE) and the European Society of Endocrinology (ESE) is titled "Connecting Endocrinology Across the Life Course" and will bring together pediatric and adult endocrine specialists from across Europe and the rest of the world to meet, collaborate, and celebrate endocrinology. This event provides a unique opportunity for learning new perspectives and enabling scientific exchanges, coupled with extensive networking opportunities to help our international endocrine community grow and flourish.
https://espe-ese-congress2025.org/

Adipose Biology Conference

Montreal, Quebec, Canada
August 19 – 20, 2025

The Adipose Biology Conference is a dynamic platform that unites scientists at all career stages, fostering collaboration, knowledge exchange, and mentorship to propel groundbreaking advancements in mechanisms of adipose tissue biology.
https://www.adiposebiology.com/

silent disruptors

BY KELLY HORVATH

It is well documented that endocrine-disrupting chemicals (EDCs) are virtually inescapable in everyday life since they are present in everything from food packaging and clothing to flame-retardant toys. An upcoming **ENDO 2025** session, "Thyroid Disruptors," examines how EDCs affect thyroid function in pregnancy and childhood as well as their link to increased cancer risk in populations with a high environmental exposure.

How Environmental Chemicals Threaten Thyroid Health and Development

With evidence proliferating that endocrine-disrupting chemicals (EDCs) affect thyroid hormone synthesis, transport, metabolism, and action; that gestational exposure to environmental thyroid hormone disruptors affects cognitive function; and that exposure in general increases thyroid cancer risk, one session at **ENDO 2025** explores these deleterious effects and some of their proposed underlying mechanisms in detail.

"Thyroid Disruptors," happening on Saturday, July 12, features presentations on how thyroidal EDCs affect growth and development in the fetus and in early life as well as on the role of EDCs in thyroid carcinogenesis. As research continues to illuminate the complex relationship between EDCs and thyroid function, the work of these scientists underscores the critical need for a multifaceted approach to this growing public health concern, including coordinated action from researchers, healthcare providers, regulators, and policymakers alike. The "Thyroid Disruptors" session represents an important step toward translating cutting-edge research into clinical practice and public health strategies that may ultimately reduce the burden of thyroid-related disorders and cancers attributable to environmental exposures.

Joris A. J. Osinga, MD, PhD candidate at Erasmus University Medical Center, Rotterdam, The Netherlands, is one of the session chairs. His research group at Erasmus MC has extensively studied the effects of EDCs on thyroid function, particularly during pregnancy and in children. "It is well established that many EDCs can alter maternal thyroid hormone levels and even disrupt the thyroid hormone axis," Osinga says. "Since these chemicals are produced on such a large scale and persist in the environment, their impact goes beyond just individual cases. This makes high-quality, independent research essential to truly understand these associations."

Osinga received the Eugenia Rosemberg Award at **ENDO 2023** in Chicago, an experience he highly values for the chance to have presented his research to an audience of endocrinologists. He was also a 2023 Endocrine Society Early-Career Forum Awardee. He credits membership in the Endocrine Society as having provided him with numerous opportunities to grow both as a researcher and a clinician. "Through the Society, I have been able to engage with leading experts, stay informed about cutting-edge research, and contribute to the broader field of

ANNE-SIMONE PARENT, MD, PHD,

UNIVERSITY OF LIEGE, LIEGE, BELGIUM

"The developing brain is remarkably malleable as neural circuits are formed. These circuits are strongly dependent on hormones for their development and are extremely vulnerable to disruption. **For those reasons, perinatal exposure to EDCs could have lifelong consequences on brain function by altering developmental connectivity."**

endocrinology. I am very happy to be back at **ENDO** this year, especially in the role of chairing a session on such an important topic," Osinga says. "**ENDO** is the biggest endocrine conference worldwide and a great chance to connect with colleagues and stay updated on the latest research."

Although the session outline is still being finalized, Osinga explains that the organizers plan to allow time for an audience Q&A after the presentations. Speaking of the presentations, Osinga says he is familiar with the presenters' work and has even had the opportunity to connect with some of them personally. "I greatly admire their contributions to understanding the role of EDCs in endocrine function, which is crucial in providing insights that have the potential to inform policymakers and public health strategies," he says. "I can't wait to hear the insights from our expert speakers and the discussions that follow."

Impacts on Neurodevelopment and Cognitive Function

Anne-Simone Parent, MD, PhD, of the University of Liege, in Belgium, will discuss "Effects of Thyroidal EDCs on Growth and Development." She explains that her clinical work as a pediatrician sparked her interest in this topic, as she has become concerned by the increasing incidence of autism, attention deficits, and learning disabilities. "The developing brain is remarkably malleable as neural circuits are formed," she explains. "These circuits are strongly dependent on hormones for their development and are extremely vulnerable to disruption. For those reasons, perinatal exposure to EDCs could have lifelong consequences on brain function by altering developmental connectivity."

As such, Parent's presentation will focus on the effects of developmental exposure to thyroid disruptors on brain development and cognitive function, drawing on key studies from the literature, such as by Bellanger M., et al., showing that EDCs substantially contribute to neurobehavioral deficits,

Endocrine disruptors are pervasive in everyday life since they are found in everything from straws and utensils to food containers and water bottles.

Many first responders who were engulfed in debris clouds from the World Trade Center collapse on 9/11 were eventually diagnosed with thyroid and other cancers.

and Caporale N.O., et al., that identified positive associations between gestational exposure to EDC mixtures and adverse neurodevelopmental outcomes. Collectively, these studies indicate that thyroid function is an important point of vulnerability. "As thyroid hormones regulate key processes such as neuronal proliferation, migration, differentiation, synaptogenesis, and myelination, alterations of thyroid function during critical developmental windows can lead to long-lasting cognitive effects," Parent says. Additionally, "my laboratory and others have developed preclinical models to study the effects of developmental exposure to EDCs on neural circuits in the hippocampus, a key structure involved in learning and memory, and in the cortex."

Parent explains that some EDCs specifically associated with lower IQ and learning difficulties in children are the industrial pollutants known as polychlorinated biphenyls (PCBs) — now forbidden in the United States and Europe because of their carcinogenic properties and long associated with abnormal thyroid parameters — and flame retardants, which are known to interfere with triiodothyronine (T3) transport, metabolization, and action. Pesticides such as chlorpyrifos are also known to impair thyroid and cognitive function. Perfluoroalkyl substances (PFAS) used, for example, in textiles and cookware, interfere with thyroid hormone production and transport. Bisphenol A (nearly ubiquitous among American and European populations) is well known for its weak estrogenic properties, but it has also been associated with decreased thyroid-stimulating hormone (TSH) and thyroxine (T4) levels in pregnancy and in children.

"In addition to disrupting thyroid function," Parent says, "many of these contaminants show neurotoxic effects that are probably thyroid hormone independent through direct alteration of key synaptogenic processes. In mice models, gestational and lactational exposure of mice to PBCs disrupted excitatory synaptic function during a period of active synaptogenesis in immature cells in the dentate gyrus, thus providing a window into factors that can disrupt neural circuit formation," Parent says.

Though banned, PCBs persist in the environment — worse, they harm some populations more than others. Unfortunately, we cannot mitigate these effects solely at the individual level. Parent suggests that: "governments need to ensure the accurate identification of EDCs and screen industrial chemicals prior to their arrival on the market. Scientific knowledge on EDCs needs to be effectively translated to regulatory policies that fully protect populations. Such regulations should be designed to protect the most vulnerable populations: fetuses, children, and pregnant women, but also socioeconomically disadvantaged populations that are known to be exposed to higher levels of environmental pollutants."

Clinicians and researchers can also make a difference. "The National Academies of Science, Engineering, and Medicine, for example, have published clinical

AT A GLANCE

- **Endocrine-disrupting chemicals (EDCs) affect thyroid function through multiple mechanisms, with exposures during critical developmental periods potentially causing lifelong cognitive impairments.**
- **Common EDCs such as PCBs, flame retardants, pesticides, PFAS, and bisphenol A are associated with decreased thyroid hormone levels, lower IQ, and learning difficulties in children.**
- **Research suggests a potential link between EDC exposure and increased thyroid cancer risk, particularly in populations with high environmental exposure such as 9/11 first responders.**

PHOTO: Anthony Correia/Shutterstock.com

MAAIKE VAN GERWEN, MD, PHD,

ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, NEW YORK, N.Y.

"Because there is still a lot unclear about if and how these EDCs lead to negative health effects including thyroid cancer, it is important to start collecting information to better understand certain patterns. It would be a good starting point for clinicians to begin asking patients about their profession so that we can better map **whether certain professions with higher exposure levels (e.g., firefighters, farmers, factory workers) have increased cancer risks and potentially risk of more aggressive cancer. This way, we could better target our cancer screening and management."**

guidelines recommending testing and specific clinical follow-up in populations heavily exposed to PFAS. This document is a milestone providing a first set of environmental health recommendations for clinicians," Parent says.

There are several other ways. First, because clinicians know the impact of mild or severe thyroid insufficiency during pregnancy or childhood on brain development, they should be aware of the potential harm of environmental thyroid disrupters in interactions with iodine deficiency. They can also provide patients with recommendations to decrease exposure to endocrine disrupters: "[I]ntervention studies have shown that household measures can lead to reduce exposure to EDCs; however, more studies are needed to fully validate exposure-reduction strategies," Parent says. Clinicians can also support the development of educational materials that enable consumers to identify safer alternatives. Finally, "clinicians should also be aware of the sources of EDCs in healthcare products such as catheters, tubing, parenteral nutrition bags, and disposable gloves and can be involved in researching healthier alternatives," she adds.

Environmental Exposures and Thyroid Cancer Risk

Maaike van Gerwen, MD, PhD, of the Icahn School of Medicine at Mount Sinai, in New York, N.Y., will present "EDCs in Thyroid Carcinogenesis," which draws on her team's 2021 review of the existing literature as well as their pilot project on PFAS and thyroid cancer. van Gerwen says PFAS will comprise most of her presentation, but that pesticides and other EDCs may make an appearance.

van Gerwen says that she became interested in the topic of EDCs and thyroid cancer after learning about the increase in thyroid cancer incidence among first responders to the 9/11 World Trade Center attack in 2001. "This population was heavily exposed to a dust cloud full of pollutants, including carcinogens," van Gerwen says. "However, none of the carcinogens had already been linked to thyroid cancer. The dust also included multiple EDCs, so we hypothesized that these chemicals may have led to increased risk of thyroid cancer, an endocrine cancer."

She explains that her interest grew as patients would ask why they were diagnosed with thyroid cancer, and she was unable to provide a clear answer. "The etiology of thyroid cancer is

JORIS A. J. OSINGA, MD, PHD CANDIDATE

ERASMUS UNIVERSITY MEDICAL CENTER, ROTTERDAM, THE NETHERLANDS

"It is well established that many EDCs can alter maternal thyroid hormone levels and even disrupt the thyroid hormone axis. Since these chemicals are produced on such a large scale and persist in the environment, their impact goes beyond just individual cases. **This makes high-quality, independent research essential to truly understand these associations."**

mostly unknown. So, my work mainly focuses on thyroid cancer, but I am interested in other head and neck cancers as well, mainly because of the exposure route," she says. "The thyroid is particularly at risk because it is an endocrine organ, and these EDCs are known to disrupt endocrine function." Overstimulation of the hypothalamic–pituitary–thyroid axis is hypothesized as one of the mechanisms promoting carcinogenesis as well as inflammation and epigenetic changes.

Like Parent, van Gerwen cites the ubiquity and persistence of these substances as challenges to mitigating their harmful effects. "Most of the EDCs that we are particularly interested in (including PFAS) have a very long environmental half-life so they stay in our environment for a very long time. Furthermore, most of the EDCs are still used (e.g., pesticides) so we are exposed to (low) doses on a daily basis. It is very difficult to avoid being exposed," she says.

Her hope for the near future rests with clinicians: "Because there is still a lot unclear about if and how these EDCs lead to negative health effects including thyroid cancer, it is important to start collecting information to better understand certain patterns," van Gerwen says. "It would be a good starting point for clinicians to begin asking patients about their profession so that we can better map whether certain professions with higher exposure levels (e.g., firefighters, farmers, factory workers) have increased cancer risks and potentially risk of more aggressive cancer. This way, we could better target our cancer screening and management." EN

ENDO2025

Thyroid Disruptors

July 12, 2025
10:45 a.m. – 12:15 p.m.

This session will address mechanisms for thyroidal endocrine disruption; effects of thyroidal EDCs on growth and development in the fetus and in early life; and the role of EDCs in thyroid carcinogenesis, noting associated data related to health disparities.

Chairs: Joris A. J. Osinga, MD, Erasmus Medical Center, Rotterdam, The Netherlands, and Ulla Feldt-Rasmussen, MD, DMSc, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark

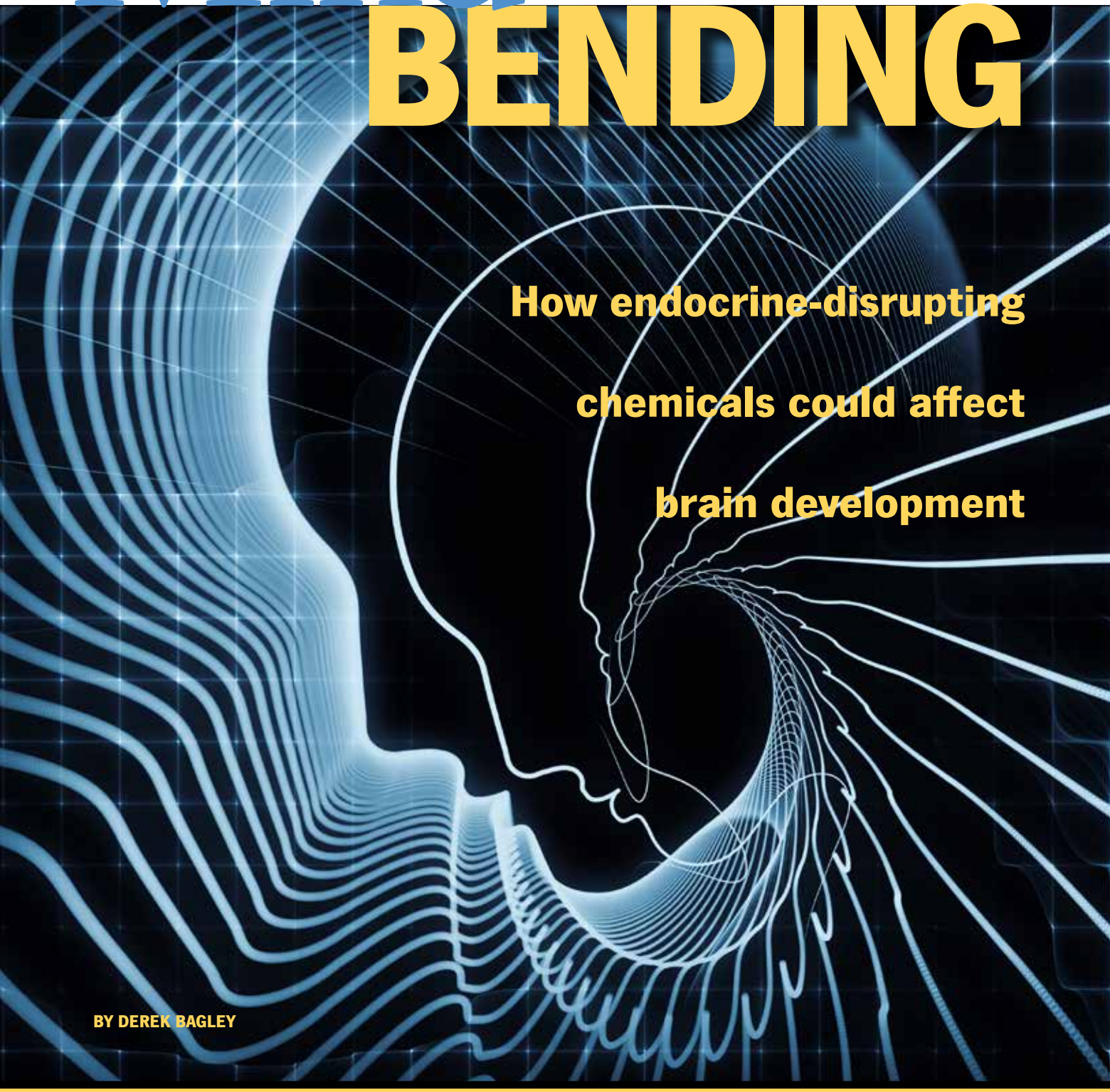
Effects of Thyroidal EDCs on Growth and Development — Anne-Simone Parent, MD, PhD, University of Liege, Liege, Belgium

Thyroid Disruptors and Pregnancy — Arash Derakhshan, MD, PhD, Erasmus Medical Center, Rotterdam, The Netherlands

EDCs in Thyroid Carcinogenesis — Maaike van Gerwen, MD, PhD, Icahn School of Medicine at Mount Sinai, New York, N.Y.

– HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. IN THE MARCH ISSUE, SHE WROTE ABOUT THE **ENDO 2025** SESSION, "FUTURE DEVELOPMENTS AND CHALLENGES IN OBESITY TREATMENT: WHERE WILL WE STAND AT **ENDO 2030**?"

Mind BENDING



How endocrine-disrupting chemicals could affect brain development

BY DEREK BAGLEY

Andrea C. Gore, PhD, of the University of Texas in Austin, discusses her recent *Journal of the Endocrine Society* paper, which found that early-life exposure to a class of endocrine-disrupting chemicals called polychlorinated biphenyls — banned for decades but persistent in the environment — may lead to behavioral problems later in life.

Late last year, a paper appeared in the *Journal of the Endocrine Society* that once again implicated endocrine-disrupting chemicals (EDCs) perturbing the body's hormones, but in a way that hasn't really been examined until recently. EDCs have already been shown to contribute to endocrine diseases like cancer, reproductive disorders, and obesity, and now an animal model has shown that early-life exposure to certain EDCs may be linked to behavioral and psychological problems later in life.

Researchers led by Andrea C. Gore, PhD, professor of medicine and Vacek Distinguished University Chair in Pharmacology at the University of Texas in Austin, point out that polychlorinated biphenyls (PCBs), a family of EDCs, have been banned for decades but were previously used in a variety of commercial and industrial applications and remain persistent in the environment. PCBs are found in contaminated soil, sediment, and certain types of fish due to environmental contamination. They have been linked to reproductive and anxiety disorders.

Andrea C. Gore, PhD, speaking at the All SIG reception at **ENDO 2023** in Chicago.

"Our laboratory and that of others have shown that developmental exposure to environmentally relevant levels of Aroclor 1221 (A1221), a mixture of PCBs known to have weakly estrogenic effects, has effects on gene and protein expression in the hypothalamus, reproductive senescence, neurogenesis, and a number of social and anxiety-like behaviors," the study authors write.

The brain may not seem like the most obvious target for EDCs. "However," Gore says, "hormone receptors, including estrogen, androgen, and thyroid hormone receptors, are

AT A GLANCE

- Endocrine-disrupting chemicals have for years been implicated in endocrine diseases like cancer, reproductive issues, and obesity. Now they've been shown to contribute to psychological problems.
- A recent animal study showed that early-life exposure to polychlorinated biphenyls may be linked to behavioral and psychological problems later in life.
- The paper also points to the fact that studies should include male and female subjects, since sexes respond differently to EDCs.

abundantly expressed in the nervous system. These hormones play key roles in brain development, and disruptions of their actions by EDCs can perturb certain behaviors."

The study authors write that emerging evidence has shown that males and females may have differences in vulnerability to the effects of EDC exposure, and that the influence of sex on brain development has long been recognized as a critical factor in understanding physiological and behavioral differences in the two sexes.

"The hypothalamus plays a pivotal role in regulating the processes involved in reproductive success and maturation," the authors write. "Investigating hypothalamic brain development and the unique susceptibility to EDC exposure between the sexes has implications for understanding the long-term consequences of environmental factors on sex-specific brain function and health."

Specifics of the Species

For this study, Gore and her team gave pregnant rat dams a Nilla wafer treated with either PCBs or vehicle, with PCBs given at doses relevant to human exposure. The rat moms gave birth, and the researchers monitored growth and development of the pups, and measured serum hormones. Gore says that in prior studies, the research team did extensive behavioral characterization and

Gore and her team used an experimental rat model to mimic the human situation of low-dose EDC exposure, in the expectation that this early-life A1221 treatment would result in small but significant changes on individual endpoints. The data from this study confirmed that prediction.

While at the All SIG Reception at ENDO 2023 in Chicago, Gore (center) met up with Elena Morales-Grahl from the University of Texas (left) and Jerrold Heindel, PhD (right), from Healthy Environment and Endocrine Disruptor Strategies.

showed that the offspring, as they grew into adulthood, differed in reproductive, social, and affective behaviors. Based on that work, the current study focused on cellular changes to parts of the hypothalamus that are implicated in regulating these behaviors, together with hormones.

"We found several significant effects of the PCB treatment," Gore says. "Body weight of the pups was smaller during early life, although there was catch-up growth later. The largest effects were on serum hormones, especially at the youngest age measured (equivalent to childhood). In females, estradiol, LH, and FSH were significantly altered; in males, testosterone was almost completely suppressed. Although these hormone levels returned to normal by puberty, the exposure of the brain at this early life stage to aberrant hormone concentrations could permanently reprogram the neural development that is happening at that time."

The researchers conducted neuroanatomical analyses in the pubertal rats of hypothalamic neuropeptides involved in reproduction and energy balance — namely kisspeptin, neurokinin B, and prodynorphin, in two hypothalamic regions (arcuate nucleus [ARC] and AVPV). "We were surprised to find that kisspeptin and neurokinin B were unaffected in either sex, but that prodynorphin was selectively increased in the AVPV of the male rats. The physiological consequences of this finding are unknown, but we are pursuing that in current studies."

One surprising finding from the study, the authors note, is that they were unable to detect prodynorphin co-expression with kisspeptin within KNDy neurons in

> **"The history of science has largely been based on work in males because females are considered more 'complicated' due to hormone fluctuations and therefore more difficult to study.** However, considering that half the population of humans is females, it's essential to consider sex as a biological variable."
>
> — ANDREA C. GORE, PHD, PROFESSOR OF MEDICINE AND VACEK DISTINGUISHED UNIVERSITY CHAIR IN PHARMACOLOGY, UNIVERSITY OF TEXAS, AUSTIN

> **PCBs in air can also enter the body through inhalation. I think of PCBs as the original 'forever chemicals.'** We use that term now for perfluorinated compounds (PFAS), but PCBs were there first, and we did not learn from those mistakes."
>
> — ANDREA C. GORE, PHD, PROFESSOR OF MEDICINE AND VACEK DISTINGUISHED UNIVERSITY CHAIR IN PHARMACOLOGY, UNIVERSITY OF TEXAS, AUSTIN

rats, unlike mice, sheep, and primates. This co-expression has been reported in other species, underscoring an unexpected species difference in the anatomical distribution of prodynorphin in rats. "This insight helps further our understanding of the diversity and complexity of reproductive physiology across mammalian species, laying the groundwork for future investigations and advancements in reproductive health research," the authors write.

"Any interpretation of data in animals needs to consider possible species differences when translating to humans," Gore says.

Sex as a Biological Variable

The authors write in the conclusion that early developmental changes in hormones induced by A1221 observed here may affect brain organization and contribute to the changes in sexually dimorphic behaviors that are induced by exposure. "We reported that A1221 led to alterations in sociosexual and mate preference, and social and anxiety-like behaviors," they write. "In addition, evidence of brain reorganization caused by early life PCBs is provided by reported changes in gene expression and neurogenesis in sexually differentiated brain regions such as the preoptic area and ventromedial nucleus."

Gore goes on to tell *Endocrine News* that their results, as well as others', indicate that biomedical research, especially on physiological endpoints such as the endocrine system, needs to include both female and male subjects, whether in animal or clinical studies. "The history of science has largely been based on work in males

because females are considered more 'complicated' due to hormone fluctuations and therefore more difficult to study," she says. "However, considering that half the population of humans is females, it's essential to consider sex as a biological variable."

In Gore's lab, virtually all EDC research they have done reveals that males and females respond differently to these chemicals; some behaviors are more affected in females, others in males. The researchers' gene expression work shows that different suites of genes in the sexes are reprogrammed by EDCs.

"The field of neuroendocrinology was one of the first to recognize the importance of developmental programming, and how early life hormones organize the brain in a manner that sets the stage for subsequent functional outcomes," Gore says. "Natural gonadal hormones (estrogens and androgens) influence when neurons are born, and how they form synapses, and this differs quite profoundly between the sexes. When the brain is exposed to environmental EDCs, this can interfere with these developmental processes and have lifelong consequences, in a sex-specific manner."

PCBs Are Forever

Industrial chemicals were designed to last, to be resistant to breakdown, which created a problem with their disposal. Gore says that it's estimated that more than one million tons of PCBs were released into the environment, and they persist in soil, water, and air. PCBs in soil and water are taken up by plants and move up the food chain. "Organisms at the top of the food chain — such as humans — having the highest concentrations in their bodies due to biomagnification," Gore says. "PCBs in air can also enter the body through inhalation.

"I think of PCBs as the original 'forever chemicals,'" she continues. "We use that term now for perfluorinated compounds (PFAS), but PCBs were there first, and we did not learn from those mistakes."

Gore and her team used an experimental rat model to mimic the human situation of low-dose EDC exposure. She says that the expectation was that this early-life A1221 treatment would result in small but significant changes on individual endpoints, and the data from this study confirmed that prediction.

"It's when you look at the body of data as a whole that things become really interesting," Gore says. "Endocrine physiology requires the integration of multiple coordinated signals. If there are small changes to those signals induced by EDCs, the integration is disrupted. We referred to this in a previous JES paper as 'dis-integration and reconstitution.' The current study adds further evidence that these processes are being induced by early life EDCs." EN

– BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE MARCH ISSUE, HE WROTE ABOUT THE CONTINUAL EVOLUTION OF TREATING OBESITY ACROSS THE LIFESPAN.

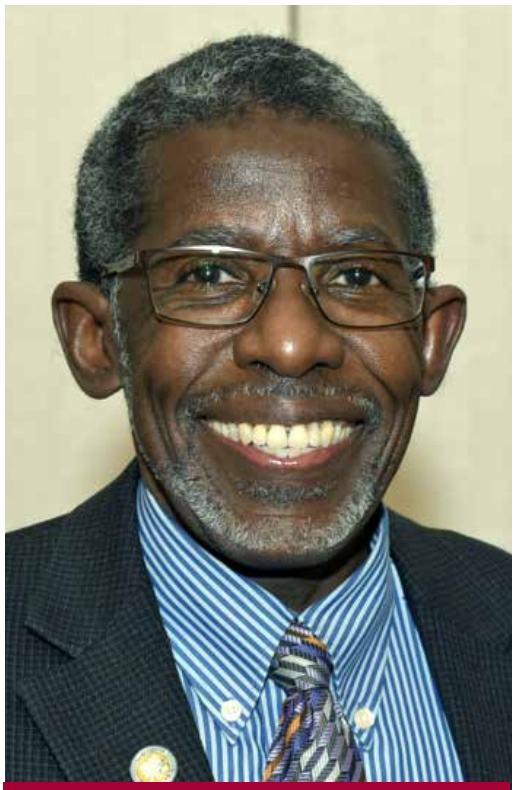
Endocrine Society Past-President E. Dale Abel, MD, PhD, shares his thoughts with *Endocrine News* about his career, including achievements and challenges, how his cultural background has influenced him throughout his professional life, as well as advice for young endocrinologists embarking on their own remarkable career journeys.

lift every voice *further*

BY GLENDA FAUNTLEROY SHAW

Front and center: Abel is surrounded by students, faculty, and Society staff at the FLARE/Excel Luncheon that took place in Chicago, Ill., during ENDO 2023. Abel has been a vital driving force for these Endocrine Society programs since they were first launched.

Q&A with E. Dale Abel, MD, PhD



E. Dale Abel, MD, PhD

In celebration of Black History Month, our February issue featured the momentous contributions of five of the Endocrine Society's Black members. Due to a tight production schedule, however, we were unable to include one very prominent member in the printed magazine — E. Dale Abel, MD, PhD. We, therefore, are dedicating this feature to singularly honor his tremendous accomplishments to the field as one of the world's leading Black endocrinologists.

Abel is the William S. Adams Distinguished Professor of Medicine and chair, and executive medical director of the Department of Medicine at the David Geffen School of Medicine and UCLA Health. He is an accomplished investigator in laboratory research focused on the complications of diabetes mellitus and their prevention. Among his long list of accolades, Abel served as the Society's president from 2019 to 2020 — making him the organization's first Black president.

We asked Abel to share his proudest career moments, his professional challenges, as well as how his cultural background plays a role in his research and patient care.

***Endocrine News:* What has been one of your biggest notable successes that has defined your professional role?**

E. Dale Abel: I have multiple professional roles including department chair of one of the largest departments of medicine in the country at UCLA, and I run an active research program that studies molecular mechanisms for insulin resistance and the cardiovascular complications of obesity and diabetes. Prior to moving to L.A., I directed the Fraternal Order of Eagles Diabetes Research Center (FOEDRC) at the University of Iowa. As such, there have been many achievements that I can mention that answers this question.

As an administrator, I am proud of the efforts made during my tenure at the University of Iowa to grow the collaborative diabetes research

> "I am convinced that having a workforce generally, and a science community, in particular **that is diverse, will enrich our discourse and drive greater creativity. Problems are best solved when multiple perspectives come to the table."**
>
> — E. DALE ABEL, MD, PHD, PROFESSOR OF MEDICINE AND CHAIR AND EXECUTIVE MEDICAL DIRECTOR OF THE DEPARTMENT OF MEDICINE AT THE DAVID GEFFEN SCHOOL OF MEDICINE AND UCLA HEALTH, LOS ANGELES, CALIFORNIA

> “I believe that everyone I mentor deserves a chance to benefit from the opportunities that I can now provide them, with the goal of seeing them thrive and advance in their own professional journey. **Therefore, my research group has always hosted individuals from all backgrounds and from all over the world, in an environment that respects each other’s differences, while promoting an environment of collaboration and generosity.”**
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community from less than 10 investigators to more than 50. As department chair at UCLA, we have launched an ambitious strategic plan that will chart our future for the next decade to achieve our vision to: “Lead in Innovation, Transform Care, and Advance Health for All.” Our plan that focuses first and foremost on our people and those of the great city of Los Angeles that we serve, seeks to excel in research, education, and clinical care and to be a force for good in our community, by ensuring equitable access to healthcare, particularly for marginalized members of our community.

The award of a Rhodes Scholarship to attend Oxford University in the mid-80s opened my eyes to the challenge and beauty of biomedical research. The research contributions of our lab have led to many personal recognitions and awards that truly reflect the tremendous effort of many trainees and colleagues who have worked with me over many decades. These accolades include election to the National Academy of Medicine, election to the National Academy of Science, and receipt of the Endocrine Society’s highest award, the Fred Conrad Koch Lifetime Achievement Award. Finally, it was an honor to have served as president of the Endocrine Society.

EN: Can you describe a pivotal moment in your scientific career in which you overcame a major obstacle?

Abel: Over a career as long as mine, there have been many moments of challenge. As an endocrinology fellow at Harvard, my project was to generate and study animals with defective glucose transport in adipose tissue. All the tools and reagents had to be generated literally from scratch, as these were relatively early days of genetic engineering in mice. There were many times when it seemed that aspects of the project would not work. The ultimate success of this project largely shaped much of my subsequent career in research. Other pivotal moments include the recruitment of post-doctoral fellows to my laboratory whose background opened new areas of investigation such as mitochondrial biology.

EN: Do you incorporate your cultural background into your research approach?

Abel: I do. My grandparents were subsistence farmers in Jamaica, my parents were elementary school teachers. I was born in and came of age in post-colonial Jamaica, with a deep consciousness of the humble roots of my family. This experience taught me to treat everyone with dignity and respect regardless of background. Besides the encouragement of my parents to leverage education as a tool for advancement, there was little in my background that would have predicted where I am today. As such, I believe that everyone I mentor deserves a chance to benefit from the opportunities that I can now provide them, with the goal of seeing them thrive and advance in their own professional journey. Therefore, my research group has always hosted individuals from all backgrounds and from all over the world, in an environment that respects each other's differences, while promoting an environment of collaboration and generosity.

***EN:* Both the academic and corporate worlds have seen many recent attacks to DEI (diversity, equity, and inclusion) programs and initiatives. What are your thoughts on the importance of increasing diversity within the scientific community?**

Abel: I believe in the importance of recognizing and acknowledging that for many reasons, there are members

Above: Abel with his wife Jennifer upon receiving the Endocrine Society's Fred Conrad Koch Lifetime Achievement Award at ENDO 2024 in Boston, Mass. Left: Abel is flanked by Inga Harbuz-Miller, MD (left), and Adeyinka Taiwo, MBBS, MS, FRCP, (right) at the FLARE/ Excel Reception at ENDO 2023.

> “To medical students of any background, and to those who are underrepresented in medicine, I encourage you to consider endocrinology, not only for the stimulating intellectual content in our field, and the generosity of your endocrine colleagues, **but importantly the opportunity to develop a career that will advance the health of those in minority communities who are disproportionately impacted by endocrine disorders including type 2 diabetes.”**
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of our community who have had fewer opportunities for professional advancement than others. I believe that policies that recognize these barriers and work to address them, will enable all individuals to achieve their fullest potential. It is a reality that many who face structural barriers to advancement are those from historically disadvantaged communities. I am convinced that having a workforce generally, and a science community, in particular that is diverse, will enrich our discourse and drive greater creativity. Problems are best solved when multiple perspectives come to the table.

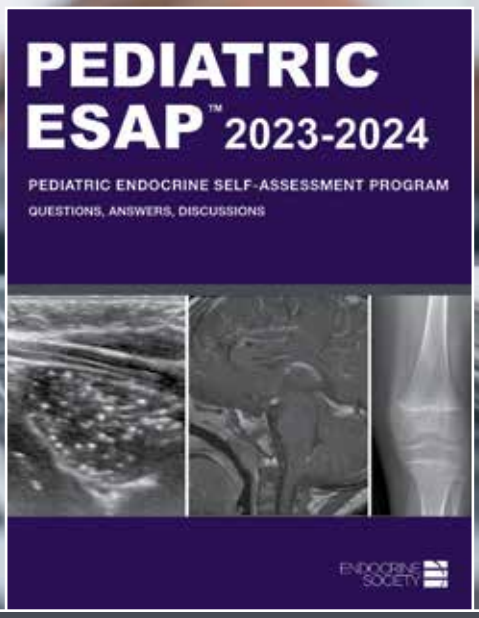
EN: How has the Endocrine Society played a role in your professional growth?

Abel: The Endocrine Society has a distinguished history of embracing early-stage endocrinologists and providing them opportunities to serve the Society. This has been my experience. Very early in my career, I was invited to serve on a committee of the Endocrine Society, which provided the opportunity for mentorship from senior leaders, and the invaluable opportunity to develop friendships with colleagues with whom I have had the opportunity to collaborate. Each of these collaborations have shaped my professional journey. I am particularly proud of the work that we have accomplished in the FLARE program, in which we have contributed to career advancement and success of more than 200 fellows over the course of the program.

EN: What advice would you give to young Black medical students aspiring to pursue a career in endocrinology?

Abel: To medical students of any background, and to those who are underrepresented in medicine, I encourage you to consider endocrinology, not only for the stimulating intellectual content in our field, and the generosity of your endocrine colleagues, but importantly the opportunity to develop a career that will advance the health of those in minority communities who are disproportionately impacted by endocrine disorders including type 2 diabetes.

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



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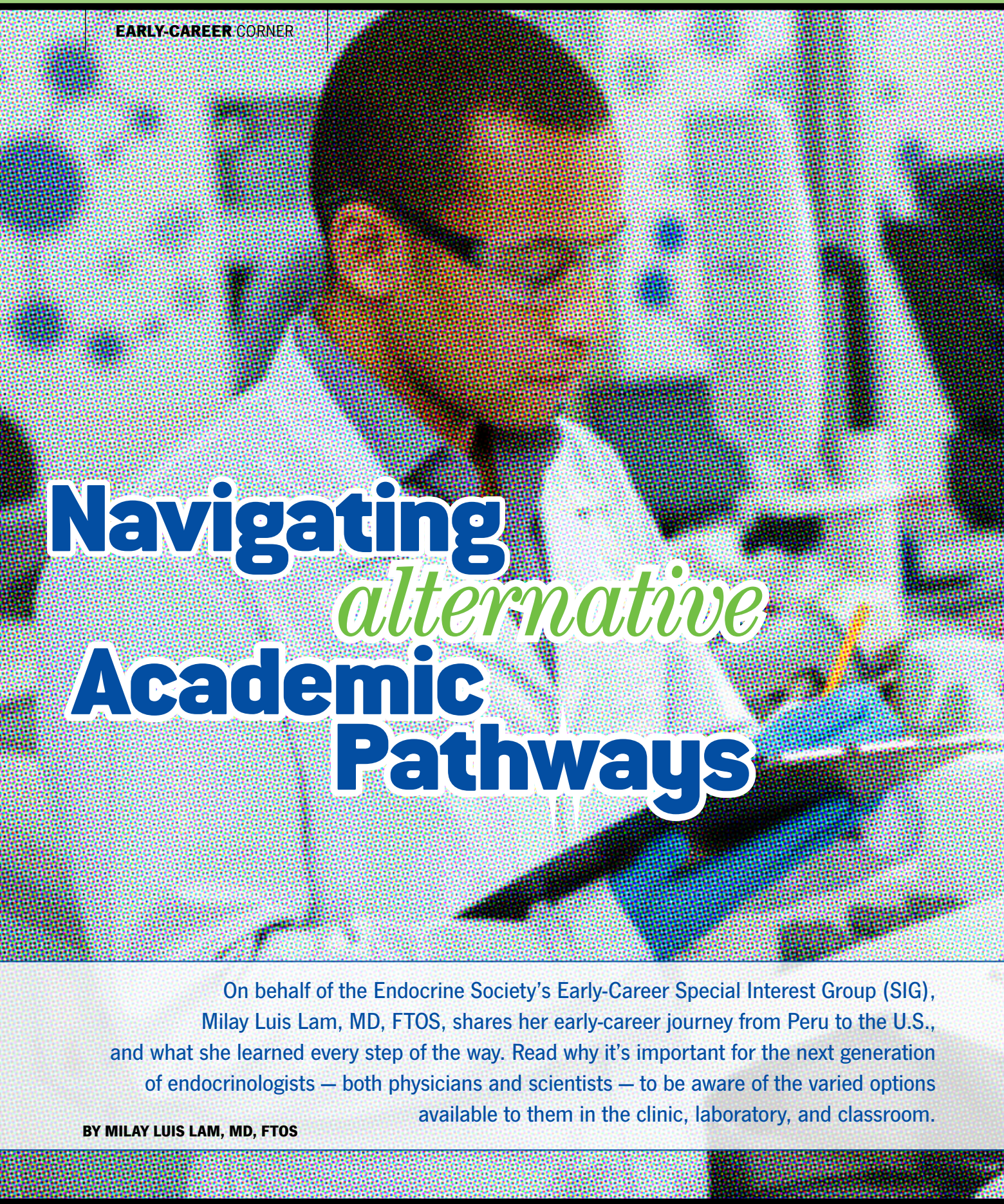

Navigating *alternative* Academic Pathways

On behalf of the Endocrine Society's Early-Career Special Interest Group (SIG), Milay Luis Lam, MD, FTOS, shares her early-career journey from Peru to the U.S., and what she learned every step of the way. Read why it's important for the next generation of endocrinologists — both physicians and scientists — to be aware of the varied options available to them in the clinic, laboratory, and classroom.

BY MILAY LUIS LAM, MD, FTOS

Milay Luis Lam, MD, FTOS

I was born and raised in Peru and attended Universidad Peruana Cayetano Heredia, an excellent medical school. I can't complain much about my medical training; it provided me with significant clinical exposure that allowed me to decide which area of medicine I wanted to focus on. It also nurtured the love I still have for the field today.

At the time of my education (2000 – 2006), smartphones were not yet available in Peru, and most of our learning materials came from books, copies of journals, and class notes from our professors. Technology has since revolutionized access to information, not just in healthcare, but for everyone. While much has changed in how we treat various conditions and in how medical education is delivered — especially with the current focus on technology — one thing that remains constant is the perception of a medical career and its branches in medicine.

Milay Luis Lam, MD, FTOS, (right) with Ismat Shafiq, MD, at the All SIG Reception in Chicago, Ill, during **ENDO 2023**

Back when I was in school, professors and attendings often divided clinical medicine into two areas: academia, where individuals were driven by research, and private practice, where physicians focused solely on clinical care without involvement in research. After graduating, I spent about a year and a half at my university assisting with the international accreditation of pre-graduate courses. During this time, I learned that my first boss had never practiced clinical medicine; instead, she pursued a master's degree and a doctorate. That was my first clue that there could be more to a medical career than just clinical practice or research.

A Clinician at the Bench

I then transitioned to working at Pfizer in Peru as a clinical research associate. At that time, having an MD was a requirement for the position. This experience helped me realize that physicians could also contribute to the background side of research. However, my ultimate goal was always to come to the U.S. to broaden my knowledge. Early in medical school, I decided I wanted to specialize in endocrinology because I grew up in a family where almost everyone had diabetes. This personal connection gave me a unique perspective on the disease from the patient's point of view.

When I began applying for observerships and clerkships, I met Celso and Elise Gomez Sanchez, who offered me an opportunity that would change my career. I moved to the U.S. as a postdoctoral research fellow to work with them at the University of Mississippi and spent three years working with them in basic research. At this point, Celso did 90% of the research and 10% of clinical work at the VA. I still thought there was a clear distinction between clinical medicine and research, and after my research experience, I believed I would focus solely on research after completing my residency.

During residency, the divide between academia and private practice was still very much present. I began to understand

Lam confers with Endocrine Society Past-President Carol Wysham, MD, (left), at the All SIG reception at **ENDO 2023** in Chicago, Ill.

> “We need to do a better job of educating the next generation of physicians **about the diverse career options within medicine. Many may feel compelled to leave the profession because they’re unaware of the alternatives available to them.”**
>
> — MILAY LUIS LAM, MD, FTOS, DIVISION CHIEF AND MEDICAL DIRECTOR, MERITUS ENDOCRINOLOGY, MERITUS MEDICAL CENTER, HAGERSTOWN, MARYLAND

that research comes in different forms: case reports, quality improvement projects, and clinical trials, whether industry-sponsored or investigator-sponsored.

When I entered fellowship, I assumed that all academic centers were similar. My training at SUNY Downstate exposed me to five different practice models: the VA, a community hospital, a large city hospital, a private practice with residents and fellows, and the main academic teaching hospital. Although these experiences helped me understand the various facets of clinical medicine, it wasn’t until I moved to University of Pittsburgh Medical Center (UPMC) in 2019 that I truly grasped the full spectrum of academic medicine.

Academia: More Than Research

After UPMC, I realized that academic medicine wasn’t solely about research. There was a path of clinician educators,

Early-Career SIG

Lam will be the moderator of the Early-Career SIG webinar, **“Alternative Tracks to Academia: Private Practice and Industry for Physicians and Scientists”**

Saturday, April 19, 2025
2 p.m. to 3 p.m., EST

This webinar will discuss the alternative pathways that scientists and physicians can have besides a career in academia. Panelists will share their experiences and insights into working in this industry from the physician and scientist perspectives as well as working in private practice.

Additional speakers are: Joanna Miragaya, MD, private practice endocrinologist; Nisha Nathan, MD, Novo Nordisk; and Dionisios Rentzeperis, PhD, Eli Lilly.

For more information or to sign up, go to: **https://www.endocrine.org/our-community/special-interest-groups/early-career#webinar2**

> “Initially, I thought I would remain in academia, but as I was trying to figure out our finances and my love for my career, I felt like I was against the wall ... **and I feared that without an academic title, I wouldn’t be seen as credible. I didn’t want to go into private practice, as I had been taught that it had no connection to research. But, I later realized I had been wrong.”**
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> — MILAY LUIS LAM, MD, FTOS, DIVISION CHIEF AND MEDICAL DIRECTOR, MERITUS ENDOCRINOLOGY, MERITUS MEDICAL CENTER, HAGERSTOWN, MARYLAND

where physicians focused on teaching and patient care without necessarily engaging in bench research.

Trying to balance my life in academia, particularly in a phase when I was the sole breadwinner (my husband was working on his PhD, and we had a young child), I discovered the possibility of moonlighting in endocrinology, which helped supplement my income.

Initially, I thought I would remain in academia, but as I was trying to figure out our finances and my love for my career, I felt like I was against the wall. I felt that leaving UPMC and the academic world might hinder my career, and I feared that without an academic title, I wouldn’t be seen as credible. I didn’t want to go into private practice, as I had been taught that it had no connection to research. But, I later realized I had been wrong.

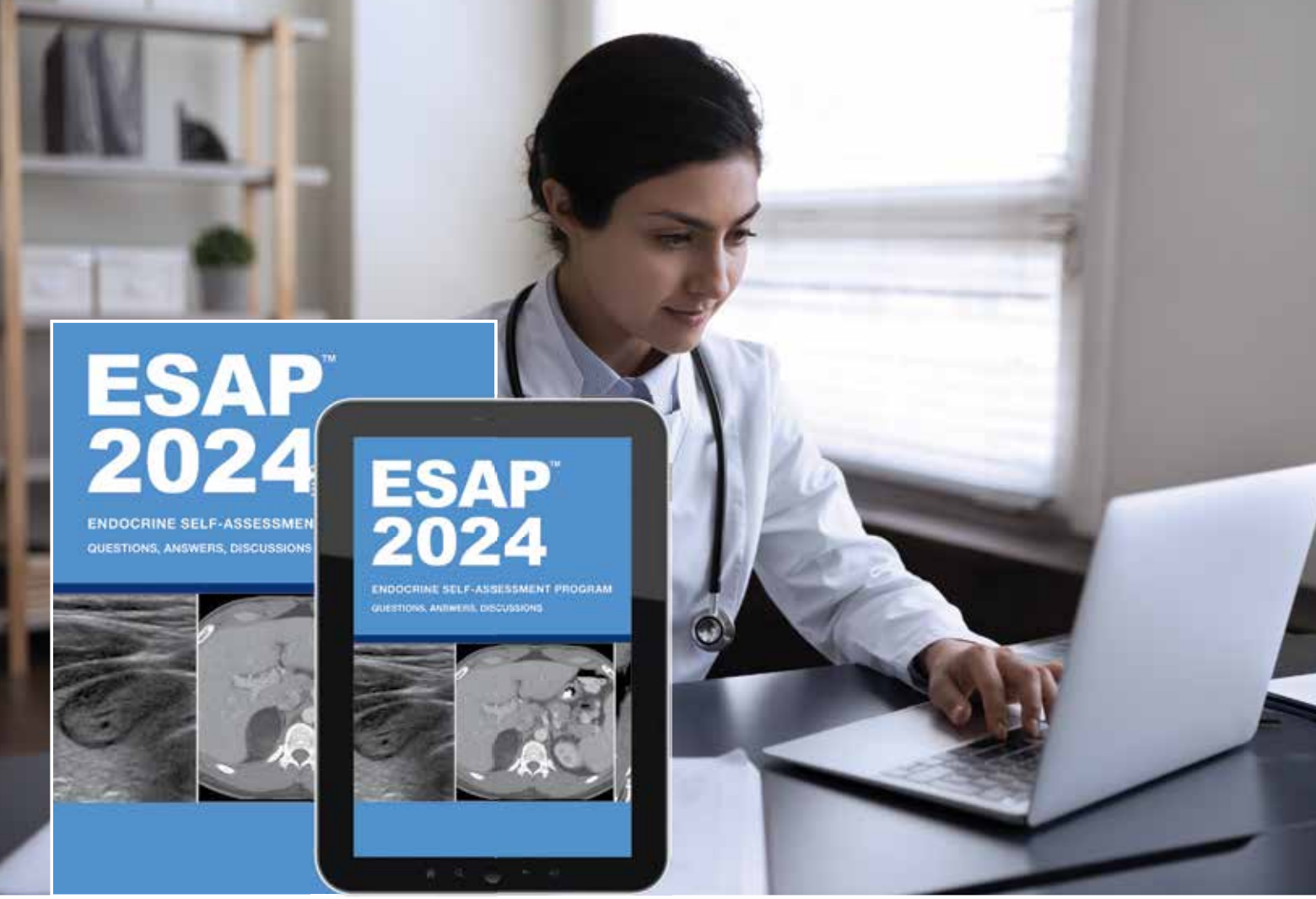
Breaking the Cycle in Medical Education

I learned that clinical medicine encompasses much more than I had originally thought. There are hospital-based practices that involve teaching medical students and residents, but without the title of professor (a title many of us were led to believe would make us more credible or intelligent in the eyes of the world). There are also locum tenens opportunities in both academic centers and private practices. And there are private practices that do research that are industry-sponsored or even self-sponsored.

Speaking to my last medical student a few weeks ago, she made me realize that we still teach students the same thing I was taught, so we are perpetuating the cycle that clinical medicine is private practice or academics, and I wanted to break that cycle especially since now as we see many people leave clinical medicine due to burnout.

We need to do a better job of educating the next generation of physicians about the diverse career options within medicine. Many may feel compelled to leave the profession because they’re unaware of the alternatives available to them. By showcasing the variety of paths within our field, we can help them stay engaged in a career they’ve chosen instead of feeling like their only choice is to exit the profession. This is still a great time to work in medicine! EN

– MILAY LUIS LAM, MD, FTOS, IS A DIVISION CHIEF AND MEDICAL DIRECTOR AT MERITUS ENDOCRINOLOGY, MERITUS MEDICAL CENTER, HAGERSTOWN, MD.



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Lori Raetzman, PhD

basic research Champion

BY GLENDA FAUNTLEROY SHAW

When she's not in her lab studying the effects of environmental chemicals on female reproductive aging, Lori T. Raetzman, PhD, is busy guiding the next generation of endocrine scientists, which makes her an ideal candidate to receive the Endocrine Society's 2025 Sydney Ingber Award for Distinguished Service. She talks to us about her research, working with up-and-coming trainees, and how the world of endocrine science has suddenly changed.

Raetzman with members of her lab (from left): undergrads Francky Maemble and Hayley Bossard; grad student Zihuan Lin; Raetzman; grad students Yinka Ojo and Taylor McNeal; and Karen Weis, who serves as lab manager

Lori T. Raetzman, PhD, discusses mentoring and conducting science in challenging times.

While at ENDO 2023 in Chicago, Ill., Raetzman (second from left) met up with Endocrine Society Past-President Ursula B. Kaiser, MD; Marina Fernandez, PhD, and Denise Belsham, PhD, at the annual Basic Science Reception.

Lori T. Raetzman, PhD, has always been motivated to help the next generation of scientists figure out their career paths and the hidden rules of success in science. But being a mentor today has suddenly become incredibly difficult. Scientists across the country have already lost or are at risk of losing grants that fund their research due to cuts by the federal government. Raetzman, however, still lends a compassionate ear and words of encouragement to her students and young researchers who need guidance in these challenging times.

Raetzman is a professor of molecular and integrative physiology and associate director for the MCB PhD programs at the University of Illinois Urbana-Champaign, School of Molecular and Cellular Biology. In January, her continued service to the endocrinology community earned her a place among the Endocrine Society's 13 distinguished leaders in endocrinology, as the recipient of the 2025 Sydney Ingber Award for Distinguished Service.

She has served on numerous Endocrine Society committees over the past two decades, showcasing remarkable leadership skills as committee chair. Her initiatives, including incorporating social media for enhanced trainee engagement and organizing workshops on critical professional development topics, have amplified the Society's reach and inclusivity. Raetzman has also been instrumental in fostering diversity and leadership through programs like FLARE, supporting underrepresented minorities in basic and clinical research.

We spoke with Raetzman about her dedication to service and more about the current challenges of mentoring the next generation of scientists.

Endocrine News: What did hearing the news of the recognition for Distinguished Service mean to you?

Lori T. Raetzman: I was so honored. I love the Endocrine Society. It has been my scientific home since I started working with the pituitary gland during my postdoc with Sally Camper, PhD. I've participated in so many of the events as a trainee, and then, have just been so gratified to be able to

At the President's Reception during **ENDO 2023** in Chicago, Ill., Raetzman (second from right) had the chance to catch up with Marta Korbonits, MD, PhD; Lauren Fishbein, MD, PhD; and Li Chan, MB.

> "My lab is making some amazing discoveries in congenital hypopituitarism and environmental impacts on pituitary function. **I try to stay focused on making sure the lab is motivated to push forward, especially in the face of uncertainty."**
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> — LORI T. RAETZMAN, PHD, PROFESSOR, MOLECULAR AND INTEGRATIVE PHYSIOLOGY; ASSOCIATE DIRECTOR MCB PHD PROGRAMS, UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN, SCHOOL OF MOLECULAR AND CELLULAR BIOLOGY, CHAMPAIGN, ILL.

continue to give back to the Society as my career has grown. Being honored from your home society for giving to them is just the biggest honor that I could imagine.

***EN:* An active member of the Society since joining in 2001, you've served on numerous committees. What's your motivation to be such a big part of the Society and community?**

Raetzman: One of the main things that motivates me is my strong belief that helping the next generation of scientists, helping them figure out their path, figure out the hidden rules that occur with science, is really crucial being able to have a workforce that can tackle the next generation of problems.

I have loved interacting with trainees and helping with programming for the annual meeting. That is really what's motivated me. I grew up in a family that didn't do science. I did not have science exposure at all growing up, or even much in college, other than getting into a summer research program at the Mayo Clinic. And that changed my life.

So, I feel like that something that we all should be thinking about is giving those opportunities to trainees to change their lives. So, I really love the Society's programming that helps to open people's eyes about what a career in endocrinology can do for them and for the world around us.

I'm also extremely grateful to be able to champion basic research both within the Society and through advocacy. Our members do amazing work but also

face challenges with research access and funding. I feel like I am making a small difference in addressing concerns by co-chairing the Research Affairs Core Committee.

***EN:* I know you are also a champion for supporting diversity in the endocrine field. With the present-day attacks on diversity, equity, and inclusion programs, is there a way to protect the mission of programs like FLARE?**

Raetzman: I think we still have to keep doing the work. We need to have people from backgrounds that represent the breadth of society at the table seeing patients, doing research, and setting policies for the field. Because there won't be federal grants to support a diverse workplace anymore, maybe some other institutional funding is going to have to be prioritized to help keep some of that mission alive, and I think that's really the only way. We can't assume that it's going to happen without support from people, at many levels, across our institutions.

***EN:* Do you have a personal quote or words of wisdom that you share with the students you mentor? Especially now, what are you telling students who may be worried about their future?**

Raetzman: Oh my gosh, yeah, I've had a lot in my office, recently. I think, right now, it seems like such an individual decision about how to proceed with one's career. It's hard for me to do a one-size-fits-all help. The international students are really stressed, not only about their career, but their future in this country. Some of them have moved families here, and this is the first time I feel that I don't have a single, pop-out word of wisdom. I have to listen to their stories and hear why they're concerned.

My normal words of wisdom are usually: Make sure that you have a mentoring team. Don't be afraid to reach out to multiple people because you have different identities that you might need help with. Maybe your idea of your career path is different than your research mentor. Maybe your research mentor doesn't know how to help with a personal situation that is intersecting with work. Finding the right people to get advice from and having people be your champion is something you need at every career stage.

But right now, the stories are just heartbreaking. And so, I feel like I need to just sit and individually listen to what the person is experiencing and then try to not sugarcoat things. I think a lot of people are just burying their heads in the sand and assuming things are going to get better. But you can't do that with students and their lives. You have to tell them that "this is a day-to-day thing, and this is what I'm seeing going on with the government. I'm not sure that the grant that we have for the summer research program that supports underrepresented students will be around next year."

We submitted a grant for a baccalaureate bridge program that will prepare students who have finished undergrad for grad school, and that's for students from underrepresented populations. We know these programs are highly successful in

Raetzman (right) visited the offices of Sen. Tammy Duckworth (D-IL) with fellow Endocrine Society member Ellen Connor, MD (left), for Researcher Hill Day on March 12. They are flanking Duckworth staffer Aaron Hunt. Raetzman, Connor, and other Society members emphasized the importance of funding for scientific research and the Special Diabetes Program, among many other topics.

supporting the next generation of scientists. It was devastating to watch the program announcement disappear as we were submitting the proposal.

***EN:* Along those same lines, you have a dual role. You have your own research. What do you see as your greatest challenge this year?**

Raetzman: I'm the director of our PhD program, and I took this over about a year and a half ago, and a good chunk of my time is thinking about how we can support the students we currently have, as well as trying to take in as many new students as we can, to give them opportunities.

The conversations that have been going on around about how to recruit and retain students have been really difficult with the current NIH (National Institue of Health) funding changes and restrictions. Every single situation is that "this would have been easy a year ago, but now there are no pots of money. No fairy godmother is going to come and wave her wand and take care of our students." And so that's been one of my biggest things to worry about.

> "Learn to communicate your science so that anyone can understand the importance of your work. Science drives healthcare innovations and contributes to a robust national economy. **The Endocrine Society can help you be an advocate for yourself and the field."**
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While at the All SIG Reception at ENDO 2023 in Chicago, Ill., Raetzman is flanked by Katja Kiseljak-Vasslidiades, DO (left) and Joy Wu, MD, PhD (right).

Another big challenge is with my research lab. The upheaval in federal funding for scientific research is so detrimental to being able to plan a multi-year research program. We have projects that look at the effect of environmental chemicals on female reproductive aging. You need consistent funding to get to the end of the aging part of these studies. The other thought is for my students. They are all at different places in their training. The ones who have started recently, I worry if my grants don't get their next year of funding how they will be supported financially. My lab is making some amazing discoveries in congenital hypopituitarism and environmental impacts on pituitary function. I try to stay focused on making sure the lab is motivated to push forward, especially in the face of uncertainty.

A bright spot is that I'm so grateful to the Endocrine Society for their advocacy efforts. Just this week, I was able to go for Hill Day in Washington, D.C. The Society, and especially Ellie Cliff, coordinated all the visits seamlessly. I was able to talk to the senators and representatives for my area. Although I'm in Illinois, and grateful to be in a state that supports science, it made me feel like I was doing something. They need to know the impact NSF (National Science Foundation) and NIH funding has in their area. We also made sure that they had the right stories they needed to be able to tell about the value of endocrine research and the Special Diabetes Program if they're speaking on the floor or talking with their colleagues. My last parting words are: Learn to communicate your science so that anyone can understand the importance of your work. Science drives healthcare innovations and contributes to a robust national economy. The Endocrine Society can help you be an advocate for yourself and the field. EN

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

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Endocrine Society Advocates on Capitol Hill to Protect NIH Funding and Reauthorize SDP on Capitol Hill

On Wednesday, March 12, the Endocrine Society hosted a Researcher Hill Day and brought members from across the country to Washington, D.C., to meet with their senators and representatives and discuss the importance of completing the appropriations process for Fiscal Year 2025, protecting the National Institutes of Health (NIH) from further cuts in 2025, reauthorizing the Special Diabetes Program (SDP), and providing at least $51.303 billion for the NIH in Fiscal Year 2026. Together, we met with over 35 key congressional offices across 13 states and D.C. to share these important messages. Our messages were further amplified by 150 members who wrote to their delegations using our online campaign.

The Researcher Hill Day was especially strategically timed because funding for the federal government was set to expire on Friday, March 14, and if Congress had not acted, the government would have shut down. On Tuesday, March 11, the House of Representatives passed a Continuing Resolution (CR) that would fund the government at current levels through the end of the fiscal year, September 30. The Senate passed the bill that Friday, averting the shutdown just hours before the midnight deadline. The CR also contained an extension of the Special Diabetes Program at current funding levels through the end of the fiscal year.

During our meetings in congressional offices, we shared examples of the impact cuts have on research and how funding for grants has still not been released. We also shared that Council meetings still have not been scheduled, making it impossible for new grants to be approved. We urged representatives and senators to make inquiries. On March 13, the NIH responded to pressure and announced it will begin scheduling Council meetings for May. **All congressional offices encouraged us to continue to share examples of research in jeopardy. If you have a story about how cuts would affect your research, please contact: *advocacy@endocrine.org*.**

Endocrine Society Chief Medical Officer Rob Lash, MD, (left) and members Shannon Whirledge, PhD; Abby Fleisch, MD, MPH; and Stu Weinzimer, MD, meet with Sen. Susan Collins (R-ME) (center) to discuss the importance of protecting the NIH from funding cuts during the Endocrine Society's Researcher Hill Day on March 12, 2025.

Society Continues to Advocate for Medicare Physician Payment Fix, SDP, Telehealth

On March 14, Congress passed a stopgap spending bill to fund the government through September 30, 2025.

This legislation also included a short-term extension of the Special Diabetes Program (SDP) and extension of the Medicare telehealth waivers through September 30. The Society has been a leading voice in advocating for these priorities. We have urged Congress to reauthorize the SDP at $200 million per program per year for at least two years. The SDP is composed of two components. The Special Diabetes Program for Type 1 advances research for type 1 diabetes. The Special Diabetes Program for Indians (SDPI) provides treatment and education programs for people with type 2 diabetes among American Indians and Alaskan Natives (AI/AN). We have also urged Congress to permanently extend the Medicare telehealth flexibilities, which would ensure expanded access to care via telehealth for all Medicare beneficiaries. We will continue to urge Congress to address these priorities in the coming months.

Unfortunately, the legislation did not address the 2.83% Medicare physician payment cut that went into effect on January 1, 2025. Prior to the vote on the spending package, we advocated for Congress to include language in the legislation to rescind this physician payment cut. Congressional leaders have pledged to address the cut this year, but the path forward remains unclear at this time. We will continue to advocate for Congress to rescind this cut and provide an inflationary update to the Medicare Physician Fee Schedule.

Take Action

The Endocrine Society advocates on a wide range of issues affecting our members from research funding cuts to diabetes prevention to access to care, and we encourage our members to take action as well. Please visit *www.endocrine.org/advocacy* to see our new advocacy toolkit to make taking action easy and effective. We have information about how you can join one of our online campaigns, call your congressperson, visit your congressional delegation in Washington, D.C., or at home, write a letter to the editor, and attend a Town Hall meeting.

Endocrine Society Calls for Restoration of Diabetes Prevention Program

As this issue of *Endocrine News* went to press, the Trump administration cancelled all National Institutes of Health (NIH) funding for the Diabetes Prevention Program (DPP). The Society is calling for restoration of this funding and noted that eliminating funding for the Diabetes Prevention Program contradicts the administration's commitment to addressing chronic disease and making America healthy.

The Society is concerned about the loss of this ongoing research, which is conducted at 30 institutions in 21 states and will impact tens of millions of people who have type 2 diabetes and prediabetes, the investigators, and the clinical personnel who work on this program.

The DPP, which started in 1996, found that lifestyle changes or taking the medication Metformin could prevent or delay the onset of type 2 diabetes in people at risk of developing the condition and demonstrated that a 5% – 7% weight loss lowered the risk of developing diabetes by 58%.

The DPP Outcomes Study is the long-term follow-up study of the DPP cohort and is currently studying Alzheimer's disease and dementia, in addition to continuing to study the long-term effects of diabetes prevention on other health conditions such as cancer, heart disease and stroke, nerve damage, kidney disease, and eye disease. It has continued to follow many of the more than 3,100 surviving DPP participants since 2002.

The research provides an important source of long-term information on diabetes prevention. According to the U.S. Centers for Disease Control and Prevention (CDC), 38.4 million people in the U.S. have diabetes. That is 11.6% of the population. Another estimated 97.6 million U.S. adults had prediabetes as of 2021.

Preventing and delaying the onset of diabetes can help reduce other chronic conditions, such as heart and kidney disease, and control health costs. The direct and indirect costs of treating diagnosed cases of diabetes nationwide total an estimated $13 billion in 2022, according to the CDC.

For more information, please visit: ***www.endocrine.org/takeaction***. EN

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