LAB NOTES Q&A: MARK NIXON, PHD

THE LEADING MAGAZINE FOR 📄 ENDOCRINOLOGISTS

OCTINE news

### INTERNATIONAL

**MARCH 2019** 

# CONSTANT CRAVING

### **Endocrinology & Addiction**

A symposium at ENDO 2019 titled "Neuroendocrine Aspects of Addictive Disorders" will look at how certain endocrine treatments can play a role in developing compulsive and even dangerous behaviors:

- One patient threw lavish parties and bought multiple luxury cars due to treatment for an endocrine disorder.
- How dopamine agonists can adversely affect impulse control.
  - What clues should endocrinologists pick up on that link erratic behavior to medical treatment?

### **CELEBRATING DIVERSITY:**

A quarter century of inclusion at the Endocrine Society

### **STEP BY STEP:**

Introducing patients to continuous glucose monitors



Hormone Science to Health

# Help women



Join the Lipedema Foundation Registry



# Every BODY has the power to make a difference

Millions of women around the world live with the physically painful and emotionally distressing effects of lipedema, a fat disorder characterized by increased adipose tissue in the limbs that does not respond to diet or exercise. Because little is known about how and why it develops, lipedema remains a difficult disease to diagnose and treat.

The power to change this lies with you!

Join the Lipedema Foundation Registry (LFR) and help forge a path to better treatments from the comfort of your own home. Established by the Lipedema Foundation, the LFR is an online registry designed to help affected individuals and those who care for them better understand and treat lipedema.



### Who can join?

**Anyone!** People who have or may have lipedema. People who do not have lipedema.



### What do I need?

A computer with an internet connection and an email address.



### What can I expect?

To answer questions about your medical experiences and lifestyle.



### Why should I join?

To help researchers better understand lipedema and figure out:

- » why lipedema happens
- » who/how many are affected
- » what treatments are being used
- » how it impacts quality of life

Join the Lipedema Foundation Registry at **lipedema.org/registry**  Questions? Email registry@lipedema.org

# Endocrine

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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Take the next steps at ENDO 2019 by attending the Early Career Forum along with any of the 12 Career Development Workshops.

The forum provides early career professionals with a unique opportunity to connect with today's leading endocrinology experts. The workshops discuss Career Pathways, Practical Skills, Career Transitions, and includes the highly popular Knockout Rounds presentations.

Learn more at endocrine.org/earlycareer.



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Test your knowledge on hormone health

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# Ohio University invites you to "Stand Up and Cheer" for **John J. Kopchick, M.S., Ph.D.**

a Bobcat faculty beacon of excellence

recognized for innovation and entrepreneurship to further endocrine research or practice in support of the field, patients, and society at large.



Congratulations, Dr. Kopchick, for being recognized with the Endocrine Society's 2019 Laureate Award for Outstanding Innovation! Thank you for raising the "Green & White above the rest."

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# A Wonderful Year of Accomplishments

s I celebrate the conclusion of my presidential year at ENDO 2019 in New Orleans, I look back at the past year with a great sense of accomplishment. It has been an honor and a remarkable experience to serve as president of the Endocrine Society. This was a year where we continued to move forward and be extremely productive during a time of transition. Last year, Council approved SP4, our new strategic plan and our Governance Task Force has just finalized its organizational recommendations, which will optimize our Society's ability to meet the SP4 goals.

I'd like to highlight a few of this year's accomplishments. First and foremost, I want to recognize that none of these accomplishments would have been possible without the participation of our committed members and dedicated staff who keep our many activities and initiatives moving forward.

I would like to thank, one more time, our exceptional team of chairs who led the Annual Meeting Steering Committee: overall chair, Greg Brent, MD; basic science chair, W. Lee Kraus, PhD; clinical science chair, Ghada El-Hajj Fuleihan, MD, MPH; and clinical practice chair, Susan Sherman, MD. Working with a very talented group of members, they have developed an outstanding scientific and clinical program showcasing leading-edge research and providing guidance for the most significant clinical challenges in endocrinology.

This year, we held two very successful Clinical Endocrinology Updates (CEU): one in Miami in September and one in Anaheim in October. The CEU Steering Committee is already planning the program for the 2019 CEUs which will be held in Miami in September and Seattle in October.

Through our advocacy efforts, we achieved a huge victory in March when the U.S. Congress passed a final Fiscal Year (FY) 2018 spending bill that included a \$3 billion increase for the National Institutes of Health (NIH), which we had advocated for to make up for years of flat funding. We visited congressional offices, conducted multiple Hill Days, participated in the Rally for Medical Research, and generated hundreds of emails to Congress from our members through online grassroots campaigns.

We continue to work with the NIH to prioritize endocrinerelated research and implement policies that benefit our members. Working with our Clinical Affairs Committee as well as with clinician members attending CEU, we have developed a position statement on insulin pricing and released it during Diabetes Awareness Month in November 2018. The statement and our recommendations have helped apply pressure on policy makers to take action.

Also in November, we conducted a Clinician Hill Day, where we conducted an educational briefing on diabetes for congressional offices and met with members of Congress and their staffs to discuss insulin pricing and diabetes selfmanagement training (DSMT) legislation. Our briefing and meetings resulted in gaining additional support for DSMT legislation and prioritizing insulin pricing on the agenda of the new Congress.

We continue our global advocacy initiative to improve regulation of endocrine-disrupting chemicals (EDCs) by continuing to work with policymakers in the European Union (EU) to encourage development of a comprehensive EDC strategy and increased funding for EDC-related research.

In 2018, more than 11,450 news stories published referenced the Society and our journals. Our annual meeting, insulin pricing position statement, Clinical Practice Guidelines, and active participation in the Diabetes Disaster Response Coalition helped drive news coverage in the pages of *The New York Times, The South China Morning Post, The Guardian* (U.K.), *Popular Science*, and *The Boston Globe*, just to name a few. In June we launched the *Endocrine News* podcast series, an exciting new downloadable offering featuring interviews with experts and addressing the latest research and trends in endocrinology. The initial episodes showcased some of the most exciting work presented at **ENDO 2018**. Subsequent episodes spotlighted research from our journals, our Clinical Practice Guidelines, and compelling interviews with our expert members on hot topics in the field.

The Hormone Health Network (HHN) will debut a new optimized version of its website, **hormone.org**, early in 2019. The HHN is the leading patient education source for hormones and endocrine-related topics. These website improvements will enhance content discoverability, support mobile access, and increase engagement and value to our patients and the public.

The Society recognizes the importance of supporting and growing our pipeline of future leaders. At **ENDO**, the Early Career Forum and Career Development Workshops continue to provide our trainees, fellows, and early-career members, guidance on career pathways, valued skills, and networking opportunities with mentors and peers.

One of our signature programs, the Future Leaders Advancing Research in Endocrinology (FLARE) program, was recently awarded a five-year renewal grant by the NIDDK. Since the Program's launch in 2013, we have been successful in training more than 100 FLARE fellows and have increased diversity within the Society and its committees by strengthening the pipeline of our future leaders.

In the past few years, we have strengthened and expanded our global partnerships with ongoing collaborations in India, Saudi Arabia, United Arab Emirates, and Turkey. Our participation in South America has expanded from Peru to Argentina and Brazil, with very strong and successful collaborations. Since 2016, we have been developing a joint session with the International Society of Endocrinology and the European Society of Endocrinology, to address globally relevant topics, such as obesity.

Our business and strategic partnership with Oxford University Press (OUP) to web-host, produce, print, promote, and sell our journals — including subscriptions, permissions, licensing, and commercial reprints — continues to grow, vastly expanding global distribution and access to our journals.

Later this year we will publish a special thematic issue: Women in Endocrinology, coinciding with International Women's Day in March 2019. We will highlight endocrinology research performed by women with a special online thematic collection of papers, social media outreach, podcast interviews, and more.

An initiative launched by *Endocrinology* editor-in-chief Teresa K. Woodruff, PhD, will help to provide reviewing experience and training to early-career researchers through the newly created Early Career Review (ECR) Board. ECRs form a subset of the main reviewer pool and receive mentoring from the journal's editor-in-chief and associate editors in the manuscript review process.

These are just a few of our many accomplishments this past year. I would like to thank and acknowledge our committee members, including those in task forces and working groups, for their time and dedication. I would like to thank Lynnette Nieman, MD, and Dale Abel, MD, PhD, our immediate past president and president-elect, for their guidance and support. I am also grateful to our Council members for their thoughtful participation and valuable input. Finally, I am thankful to the Society staff, in particular our CEO, Barbara Byrd Keenan, for their constant support and partnership. I hope you can join me in New Orleans for **ENDO 2019** to celebrate such an amazing year.

- Susan J. Mandel, MD, MPH, President, Endocrine Society

FROM THE EDITOR

# Welcome to New Orleans and ENDO 2019!

hen the throngs of attendees gather in the Ernest N. Morial Convention Center in New Orleans for ENDO 2019, they will definitely be in for a treat. Not only is the world's most prestigious gathering of endocrine clinicians and scientists from around the world in full swing, but it's taking place in one of the most iconic cities in the world!

As usual, there will be an extensive program featuring cutting-edge science, varied poster sessions, a look at the newest products and technologies at the ENDOExpo show floor, not to mention the opportunity to connect with colleagues from around the world. There are also a few new features that will make **ENDO 2019** one to remember:

- Plenaries that are dramatically varied, from utilizing big data in science and clinical care to novel therapeutic targets in disease and cancer. Be sure not to miss National Institutes of Health (NIH) director, Francis S. Collins, MD, PhD, who will give our Presidential Plenary, "Whole Genome Approaches to Unraveling Diseases."
- ENDO 2019's Enhanced Science Pathways will feature neuroendocrinology, nuclear receptors and gene regulation, and reproductive endocrinology. To further promote science and networking, each pathway will have a reception with thought leaders and the next generation of researchers. These pathways will provide you with an ideal way to surround yourself with both the latest research and the opportunities to meet those leading the research that will impact your own career.
- Guided Poster Discussions offer a fast-paced overview of some of the most exciting research at ENDO 2019. Each session includes a series of five-minute short presentations followed by question and answer time with the presenter.
- A new scientific event, Bioinformatics Workshop, will provide you with an in-depth look into data repositories, resources and tools available, and the know-how to both find information on a single molecule and how to build high-quality networks to enable network analysis.

# Endocrine news

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*Endocrine News* informs and engages the global endocrine community by delivering timely, accurate, and trusted content covering the practice, research, and profession of endocrinology.



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Preconference Programs: If you want in-depth education with hands-on thyroid ultrasound experience or are looking for an interactive forum focusing on career development, consider attending a pre-conference event the day before **ENDO 2019** officially starts. Who doesn't want an extra day in New Orleans?

As usual, senior editor Derek Bagley and I will be all over the place at **ENDO 2019**, so please feel free to suggest story ideas to us or tell us what you think of the magazine. Keep in mind that we get our best ideas from you!

Speaking of ideas for Endocrine News, in upcoming months

you will notice a change in our "Why Endocrinology?" column. We are rebranding it to "I am Endocrinology" to build off of the success of the #IAmEndocrinology campaign we launched at ENDO 2018.

We want to continue to showcase our members' stories and experiences, while encouraging more members of the community to participate.

Whether your passion is scientific discovery or caring for patients, whether you are fascinated by emerging diabetes technologies or nuclear hormone receptors, we want to hear from you. Send us your photos and stories of what drew you to the endocrinology field, and to the Endocrine Society, and we will share them in an upcoming issue of *Endocrine News*.

We would also love for you to share your stories on our social media channels. You can post them on Twitter using the hashtag #IAmEndocrinology. Be sure to tag our account, @TheEndoSociety and @Endocrine\_News.

Hope to see you all down yonder in New Orleans!

- Mark A. Newman, Editor, Endocrine News



### **Endocrinology Is Life: The Perfect Educational Tool**

BY SIMON J. RHODES, PHD, Dean of Science, Indiana University-Purdue University Indianapolis



am an educator, a researcher, and an administrator. I did not really choose endocrinology; it chose me. I was looking for a postdoc position where I could work on an interesting biological system to investigate the gene regulatory pathways that underlie cellular differentiation. I accepted a position in M. Geoff Rosenfeld's lab at UCSD and discovered pituitary cell biology. I fell in love with endocrinology because it is at the interface of basic science and medicine and is therefore a wonderful field for research and an equivalently optimal topic for education.

For many years, I was an academic researcher and educator. In collaboration with pediatric endocrinologists, our research group investigated the molecular basis of pituitary hormone deficiency diseases. I am proud of the achievements of the undergraduate students, graduate students, and postdocs who worked on those projects and have gone on to successful careers in endocrinology in medicine, academia, industry, and regulatory agencies. During this time, I also taught graduate-level endocrinology and physiology to MD and PhD students as part of their core curricula.

In recent years, my career has led me into administration, and I therefore have less time for bench research. I am fortunate, however, to have the opportunity to teach at the undergraduate level. Several years ago, I developed a new course in endocrinology for upper level undergraduates called Endocrinology in Health and Disease.

Endocrinology touches on many aspects of everyday life and therefore provides a perfect subject. Almost every student in the class knows someone with diabetes; most know a relative with a thyroid disorder; and students are interested in health disparities and engaged by how endocrine-disrupting chemicals might affect human health. Furthermore, academically, endocrinology is an excellent subject to integrate and apply what students have previously learned in biochemistry, cell biology, and genetics. Endocrinology provides engaging material for students with all kinds of career goals: It has cutting-edge basic research; it has human health for pre-medical and pre-dental students; for pre-industry students, we can discuss the discovery and commercialization of insulin; and for a pre-veterinary student, we can discuss growth in dogs (they provide the best subject matter for that topic anyway!).

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I fell in love with endocrinology because it is at the interface of basic science and medicine and is therefore a wonderful field for research and an equivalently optimal topic for education.

### **?** ?

In a modern classroom, teachers also value opportunities to integrate topics from the news and ethical questions into their lessons. It is likely that every day a student can find a news story that is related to endocrinology. It is very useful to have students consider questions for which there are no clear and easy answers. Topics such as hormonal growth attenuation therapy for children with severe disabilities and how to accommodate intersex athletes at the Olympics provide powerful examples of such discussion topics.

The recent report from the New York Times suggesting that the Department of Health and Human Services is seeking to establish a new definition of sex under Title IX also illustrated how endocrinology topics provide some of the best "teachable moments." This report came out as I started to cover hormonal regulation of sexual differentiation and I was able to abstract phrases from the report such as "a biological basis that is clear, grounded in science, objective and administrable," "would define sex as either male or female, unchangeable, and determined by the genitals that a person is born with," and "Any dispute about one's sex would have to be clarified using genetic testing." I could then ask students in the class to consider these ideas as we went through the material: They could discuss the science, and explore if "chromosomal," "genetic," "gonadal," "phenotypic," "behavioral," "brain," "Olympic," and "legal" sex were the same things or did the endocrine science lead them to understand a more complex landscape? Interactive classroom conversations such as these are impactful drivers of student engagement and learning.

So Why endocrinology? Because endocrinology is life!

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

### Remembering Jean-Pierre Bourguignon, MD, PhD

ur mentor and colleague, professor Jean-Pierre Bourguignon, University of Liége, died January 30, 2019, less than two years after he was diagnosed with cancer, leaving a stark void in the world of international endocrinology.



Jean-Pierre was a pediatric endocrinologist and pioneer in translational research regarding the role the endocrine system has on the brain of children and young adults. His work helped advance the understanding of the hypothalamic control of puberty and led him to receive the 2014 Andrea Prader Prize, the most prestigious award given by the European Society for Pediatric Endocrinology.

In 1974, he received his MD from the University of Liège (Belgium), specializing in pediatric endocrinology. He obtained his higher education teaching certification from the University of Liège in 1984. His scientific career began under the mentorship of Paul Franchimont. Very early during his medical studies, he became interested in neuroendocrinology and his essential scientific focus was the neuroendocrine control of puberty onset and pulsatility of GnRH neurons in the hypothalamic arcuate nucleus. He performed a research fellowship in Richard Santen's laboratory at Pennsylvania State University. Until his retirement in 2015, he was the head of the Developmental Neuroendocrinology Unit, GIGA-Neurosciences, Liège. The many graduate students, postdoctoral fellows, and senior researchers who had the chance to work with him will remember his sharp scientific mind, his sense of humor, and his passion for science. He accompanied his collaborators with pedagogy and generosity throughout their development.

Aside from his prominent role in this research field, Jean-Pierre was also an excellent clinician involved in the management of children with growth disorders and type 1 diabetes. Generous and conscious of the difficulties of young chronic patients, he shared with them his passion for hiking during several mountain treks, which became a tradition.

He and his team were among the first to study the role of endocrine-disrupting chemicals (EDCs) on puberty onset and trends in puberty disorders. During the last years before his retirement as chief of pediatric endocrinology, University of Liége, EDCs became a focus of his research group and made a significant impact around the world. His research background, which included both solid clinical and experimental expertise, helped the group to become an international leader in EDC research.

Realizing the need to raise awareness about human environmental exposures to EDCs, Jean-Pierre decided that he needed to warn the public as well as various regulatory bodies of these dangers. Specifically, he felt he needed to emphasize the dangers of these compounds on the health and development of children and young adults.

In 2014, he was nominated as co-president of the Endocrine Society's Global Endocrine Disrupting Chemicals Policy Task Force. His contributions received considerable international momentum, leading to him receiving the Endocrine Society's 2016 Outstanding Public Service Laureate Award for Leaders Raising Global Awareness of the Health Effects of Endocrine-Disrupting Chemicals and was credited for playing a crucial role in "engaging the European community on EDC science and policy."

As he neared the end of his life, it was with great determination that he worked on his book that would inform everyday citizens about the dangers of endocrine disrupters. As he had done throughout his career, he sought to motivate others to reflect and ask more questions.

His scientific curiosity and his passion for child health advocacy will be an inspiration for all those who had the opportunity to work with him.

*— By Anne-Simone Parent, MD, PhD; R. Thomas Zoeller, PhD; Vincent Geenen, MD, PhD; Barbara Demeneix, PhD; and Niels E. Skakkebaek, MD* 

For a longer version of this obituary, including a rememberance by Endocrine Society past president Richard J. Santen, MD, go to: https://www.endocrine.org/bourguignon.



### Mitchell Lazar Receives Karolinska Institute's 2019 Rolf Luft Award



itchell Lazar, MD, PhD, a pioneer in the field of endocrinology and diabetes research, and the founding director of the Penn Institute for Diabetes, Obesity, and Metabolism (IDOM), will receive the 2019 Rolf Luft Award from the Karolinska Institute. As part of this honor, Lazar will present the Luft Prize Lecture, entitled, "Nuclear Receptors, Circadian Rhythms, and Metabolism," on Wednesday, May 8, at the Nobel Forum in Stockholm, Sweden.

Lazar, the Willard and Rhoda Ware Professor in Diabetes and Metabolic Diseases and chief of the Division of Endocrinology, Diabetes, and Metabolism in the Perelman School of Medicine at the University of Pennsylvania, is receiving the award for his groundbreaking work in transcriptional regulation of

metabolism, including discoveries that revealed how the environment interacts with the genome to regulate circadian rhythms and metabolism, and how these mechanisms impact obesity and diabetes.

His scientific research - focused mostly on gene and metabolic regulation and mechanisms of hormone action - has led to discoveries that span molecular biology, physiology, endocrinology, and metabolism. Over the course of his career, Lazar's work has led to discoveries of the hormone resistin which plays an integral role in insulin resistance - and the role of the nuclear receptor PPARg in the development and function of fat cells, including its link to insulin resistance and type 2 diabetes. He also discovered the circadian nuclear receptor Rev-erba and identified mechanisms by which it represses gene transcription as a core circadian clock component and controller of metabolic rhythms.

and universities over the past 30 years, including the 1995 Richard E. Weitzman Memorial Award from the Endocrine Society, which recognizes promising new investigators in the field of endocrinology. He has been elected to the American Society for Clinical Investigation, the Association of American Physicians, the National Academy of Medicine and the American Academy of Arts and Sciences. Lazar is a graduate of the Massachusetts Institute of Technology and Stanford University, where he completed his undergraduate and doctorate degrees, respectively. He completed his medical residency and endocrinology fellowship through Harvard University at the Brigham and Women's Hospital and Massachusetts General Hospital in Boston.

Lazar has received numerous awards from international societies

### **Keenan Named CEO of the Year**

**H** ndocrine Society CEO Barbara Byrd Keenan, FASAE, CAE, has been named Professional Society CEO of the Year by *CEO Update* magazine. Keenan has led the Society through the process of developing and implementing a new strategic plan, expanding global leadership in education and advocacy, and repositioning its suite of publications to raise visibility. Under her leadership, the Society has won 15 awards for education, program development, communications, and diversity.

"Barbara's vision put the Society at the forefront of promoting scientific breakthroughs and improving health worldwide," says Society president Susan J. Mandel, MD, MPH. "She has been instrumental in shaping the organization into a welcoming professional home for endocrine researchers and clinicians around the world."

Keenan has identified opportunities for the organization to promote public health, including as a member of the Diabetes Disaster Response Coalition, the diabetes community's



hurricane relief organization launched by the American Diabetes Association, JDRF, and Insulin for Life in August 2017. The coalition members banded together to provide critical diabetes supplies to regions affected by numerous storms, including Hurricanes Harvey, Irma, and Maria. Keenan rallied the staff to raise money for Insulin for Life, a key supplier, and answer calls to a hotline to identify needs in affected areas. The American Society of Association Executives (ASAE) recognized the coalition with its top honor, the Summit Power of A Award.



ENDO 2019 Has Tailored Programming for Early-Career Members re you currently a trainee or early-career professional who is taking steps to transition to the next level in your career? Have you been searching for advice on how to navigate and negotiate a career in endocrine science or medicine? Are you interested in getting first-hand feedback on your grant-writing skills or seeking tips on publishing your science? Are you interested in learning how to network effectively and identify potential mentors? And even how to balance it all with your personal life?

If your answer is yes to any of these questions, **ENDO 2019** has programming specifically designed to give you in-depth instruction on how to build a successful career in endocrinology that you won't want to miss.

### Career Development Workshops — Wisdom for Every Stage

Four days of workshops — led by global experts in basic and clinical endocrinology — examine an array of topics tailored to help you build a long-lasting career. Distinguished speakers will present sessions that include a close look at the multitude of career options available for clinicians and scientists and how to navigate training, certification, and fellowships.

Learn the best practices for negotiating conflict and resolution, see how successful endocrinologists set up and manage labs and practices, and find the keys to writing research grant applications that hit the mark.

### Early-Career Forum — Get Off to a Strong Start

Join us before **ENDO 2019** officially begins for a day full of Early-Career Forum symposia, breakout sessions, and plenaries. Graduate and medical students, postdoctoral fellows, and clinical fellows alike will benefit from practical lessons and sessions. The Forum starts with a plenary that will prepare you with tips and tools on how to navigate **ENDO 2019**. Then select symposia and breakout sessions that focus on one of two areas of interest: basic science and clinical research or clinician practice and education.

Breakout sessions — which run concurrently and are repeated — will highlight the transition from PhD to post-doc, teaching and publishing skills, careers in industry, academia, government, and at a private practice, and more.

Lunch provides the ideal setting to get to know the faculty and seasoned professionals leading the sessions. The day concludes with a conversation on how to maximize your **ENDO 2019** experience in the days ahead.

### Mentoring and Poster Reception — Find Your Future

Network with endocrine professionals, Society mentors, trainees, and junior faculty while viewing posters presented by early-career scientists of underrepresented minority groups. *The Mentoring and Poster Reception will be held on Sunday, March 24, 7:00 – 9:30 p.m.* 

### **Bioinformatics Workshop: Pathways and Interactions** — Explore the Possibilities

Attend the inaugural half-day workshop developed by the Trainee and Career Development Core Committee and designed to provide scientists training on how to explore and use protein interaction and pathway bioinformatics resources. Attendees will get an in-depth look into the data repositories, resources, and tools available and how to both find information on a single molecule and how to build high-quality networks to enable network analysis. *The Bioinformatics Workshop will be held on Tuesday, March 26, 9:00 a.m. – 1:00 p.m.* 

Please join us at ENDO 2019! We look forward to seeing you there!

### Call for Nominations: FNIH Trailblazer Prize for Clinician-Scientists

The Foundation for the NIH (FNIH) has opened nominations for the second Trailblazer Prize for Clinician-Scientists.

This annual prize and \$10,000 honorarium presented by the FNIH recognizes the outstanding contributions of early-career clinician-scientists in the U.S. whose work has the potential to or has led to innovations in patient care. The FNIH will honor the three finalists of the Trailblazer Prize and announce the winner at the FNIH Annual Fall Board Dinner in Washington, D.C., on October 23, 2019.

- Eligibility/Nomination Details: fnih.org/ TrailblazerPrize
- Nomination Deadline: Friday, March 29 at 1:00 p.m. ET

The FNIH recognizes the unique and critical role that clinician-scientists play in the evolution of medical practice. As noted in the 2014 NIH Physician-Scientist Workforce Report, these individuals play a vital role in ensuring that biomedical advances ultimately benefit patients and improve public health.

### Endocrine Society Objects to Title X Gag Rule Limiting Women's Access to Contraception

n February 22, the Endocrine Society announced its objection to the administration's decision to severely restrict access to the Title X Family Planning Program, the nation's only program for affordable birth control and reproductive care.

The Title X program is essential in helping ensure that every person — regardless of income, identity, or whether or not they have health insurance — can access basic, preventive reproductive healthcare such as birth control, cancer screenings, STI testing and treatment, and well-woman exams. Nearly 500,000 people submitted comments to the administration opposing the dismantling of the Title X program, and it has been denounced by every major medical association.

The Society advocates for continued access to preventive healthcare, including no-cost hormonal contraception, as outlined in its position statement. No-cost hormonal contraceptive services allow a woman to effectively plan, if, and when, she becomes pregnant. This has a positive impact on families' socioeconomic status and health. The resulting reduction in unplanned pregnancies also has a positive impact on healthcare costs.

The changes to the Title X funding program will threaten women and adolescents' ability to access medically necessary preventive and reproductive healthcare in their communities. Federally qualified health centers will also become overwhelmed as the community-based healthcare centers that have been providing these services are eliminated from Title X eligibility.

By limiting women's access to preventative care, the changes to the Title X funding program finalized by the administration will increase medical costs and cause many women with various disorders to forgo treatment. We urge the administration to eliminate these new eligibility criteria to ensure that all centers qualified to provide these services have equal opportunity to receive Title X grant funding.

# NEFA HR(2)

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BY DEREK BAGLEY Senior Editor



In the present study, we aimed to examine passive smoking exposure in childhood (ages 3 - 18 years) as a determinant of bone health at the skeletal maturity in mid-adulthood (ages 31 – 46 years) among 1.422 individuals.



### **Childhood Exposure to Passive Smoking Linked to Impaired Bone Health in Adulthood**

**TRENDS** & INSIGHTS

hildren of parents who smoke have evidence of impaired bone health in adulthood, according to a study recently published in *The Journal of Clinical Endocrinology* & Metabolism.

Researchers led by Markus Juonala, MD, PhD, of the University of Turku and Division of Medicine, Turku University Hospital, in Turku, Finland, and

Murdoch Childrens Research Institute in Parkville, Victoria, point out Australia, that previous studies have shown that an environmental factor in osteoporosis is exposure tobacco smoke, even to secondhand smoke. However, not much is known about how childhood exposure to secondhand smoke affects bone health. "In the present study, we aimed to examine passive smoking exposure in childhood

(ages 3 - 18 years) as a determinant of bone health at the skeletal maturity in mid-adulthood (ages 31 - 46 years) among 1,422 individuals," the authors write.

The researchers analyzed data from 1,422 individuals who had a baseline evaluation in 1980 and a followup 28 years later as adults in the longitudinal Cardiovascular Risk in Young Finns Study. Exposure to passive smoking was established in childhood, and the researchers controlled for active smoking in childhood and adolescence, as well as age, sex, BMI, serum 25-OH vitamin D concentration, physical activity, and parental socioeconomic position.

The researchers found that exposure to passive smoking in childhood was lower quantitative

computed tomography (pQCT) derived bone sum index in adulthood, lower heel ultrasound estimated bone mineral density in adulthood, and the incidence of low-energy fractures. "Individuals with elevated cotinine levels (3-20 ng/ml) in childhood had lower bone sum index with pQCT ( $\beta$ ±SE -0.206±0.057, P=0.0003)," the authors write. "Children whose parents smoked and had high cotinine levels (3-20 ng/ml) had significantly lower

> pQCT derived bone sum index compared to those with smoking parents but low cotinine levels (<3ng/ml) ( $\beta \pm SE$  -0.192 $\pm 0.072$ , P=0.008)."

> The authors write that the most plausible mechanisms in smoking-induced bone loss are increased bone resorption and decreased efficiency in absorbing calcium. Tobacco smoke affects osteoneogenesis and osseointegration in bone

cell culture, and animal models have shown tobacco smoke's myriad effects on bone health. "In the present study," the authors write, "independent associations were seen with different indices of bone mineral density, bone mass and strength after a 28year follow-up in both men and women, suggesting that tobacco smoke exposure may compromise the growing bone through multiple mechanisms."

**Findings:** The authors conclude that exposure to secondhand smoke during childhood persistently affects bone health, independent of confounding factors. "Programs aimed at avoiding exposure to tobacco smoke early in life could improve later bone health of children in risk to passive smoke exposure," the authors write.

### Researchers Reveal Novel Mechanism in Luminal Breast Cancer Development

# 

Our data have revealed opposing functions for the PR isoforms in proliferation vs. breast CSC biology and identified phosphorylated Ser294 PR-A as a potent driver of breast CSC expansion.



esearchers have identified unique isoformspecific functions of phosphorylated progesterone receptors (PRs) as pathway drivers in the development of luminal breast cancer, according to a study recently published in *Endocrinology*.

Researchers led by Carol A. Lange, PhD, of the Masonic Cancer Center at the University of Minnesota in Minneapolis, point out that luminal, or estrogen receptor (ER)-positive breast cancer accounts for about 75% of all breast cancer cases, and that total PR expression, rather than isoform-specific PR expression, is measured in breast tumors as an indicator of functional ER. "PR has been emerging as a context-dependent driver of luminal breast cancer phenotypes associated with tumor progression *in vitro* and *in vivo*," the authors write. "However, progress in the development of highly selective anti-progestins for clinical use as PR-targeted therapies has been limited."

Lange and her team write that in breast tissue, PR signaling is mediated by two co-expressed PR isoforms, full-length PR-B and N-terminal truncated PR-A (truncated of the first 164 amino acids found in PR-B, termed the B-upstream segment). These isoforms regulate overlapping, but distinct, gene sets. For example, animal studies have shown that PR-B is required for normal mammary gland development, while PR-A is essential for uterine development and fertility. The researchers wanted to better understand how these isoforms regulate breast cancer stem cells (CSCs) or stemlike cells in luminal breast cancer models.

The researchers found that PR-A can limit proliferation but is a dominant driver of CSC expansion in T47D models, while PR-B is a potent driver of anchorage-independent proliferation. "Relative to what is known about ER signaling,



PR isoforms have been grossly understudied in luminal breast cancer biology," the authors write. "Our data have revealed opposing functions for the PR isoforms in proliferation vs. breast CSC biology and identified phosphorylated Ser294 PR-A as a potent driver of breast CSC expansion." They go on to speculate that given the recent finding that luminal A-type breast cancers are PR-A rich, their findings could explain why women diagnosed with luminal-A breast cancer have an initial good response to endocrine therapies but remain at risk for late recurrence.

**Findings:** Lange and her team conclude that phospho-PR isoforms could serve as clinical biomarkers to identify patients with breast cancer at risk of metastasis. "A deeper understanding of PR isoform-specific actions, including PR-phosphorylated species and their target gene cofactors, might provide information on the mechanisms of late recurrence in luminal breast cancer and reveal new approaches to pharmacologically target phosphorylated PR isoforms as potent drivers of breast CSC biology," the authors write.

### Genetics Hold Key in Development of Hypertension

paper recently published in *Endocrine Reviews* concludes that primary hypertension is not a disease but rather a syndrome and that genetics may hold the key to targeted and individualized treatment.

The review, by Worapaka Manosroi, MD, and Gordon H. Williams, MD, of Brigham and Women's Hospital and Harvard Medical School in Boston, points out that hypertension is the leading contributing factor to all-cause mortality,



being the main risk factor for stroke and coronary artery disease. Manosroi and Williams write that the individual causes of hypertension — the diseases — share a common sign: elevated blood pressure. This has caused an increase in genetic tools to determine these causes. "Substantial preclinical and clinical data have documented that an increased blood pressure and its accompanying substantial cardiovascular risks are largely secondary to the interplay between genetics and environment," the authors write.

The researchers reviewed studies from January 2004 through December 2017 through an online search of the National Library of Medicine using the PubMed search engine, using the search terms, "genes, genetics, polymorphism with

hypertension, blood pressure, salt sensitivity, and salt sensitive blood pressure." They identified 62 genes as potential candidates for this review, but only 21 met the criteria to be included: "two supporting cohorts from different publications or two different cohorts within a single publication or a single positive cohort with a confirmatory genetically modified animal study."

Of those 21 genes, 18 were associated with salt-sensitive hypertension. "[E]ighteen of the

twenty-one genes support the posit that polymorphic variants in a gene alone were insufficient to produce a level of blood pressure high enough to be called hypertension," the authors write. "Gene variants and an appropriate environment (usually liberal salt intake) were required. These eighteen genes were associated with a proximate phenotype that included SSBP and therefore, salt sensitive hypertension."

The review covers a lot more, but notes that "these 18 genotype/phenotype groups are associated with nearly 50% of the primary hypertension population, suggesting that precise mechanistically driven treatment/prevention strategies for the individual primary hypertension phenotypes are feasible in the near term."

**Findings:** Manosroi and Williams conclude by writing that challenges remain to identifying who has hypertension, including shifting definitions of who has hypertension and the fact that it is difficult to determine who does not have primary hypertension to serve as a control group. However, these challenges can be addressed by developing better deep phenotyping approaches, they write.



Gene variants and an appropriate environment (usually liberal salt intake) were required. These eighteen genes were associated with a proximate phenotype that included SSBP and therefore. salt sensitive hypertension.



### ENDOCRINE ITINERARY



New Orleans, Louisana March 23 – 26, 2019 With more than 7,000 attendees, nearly 2,000 abstracts, and more than 200 other sessions, **ENDO 2019** is the leading global meeting for endocrinology research and clinical care. Join us for the most well attended and valued translational endocrinology meeting in the world. Bringing together leading experts, researchers, and the most respected clinicians in the field, **ENDO** 2010, represented a convergence of acience

and practice that highlights and facilitates breakthrough discoveries in the field of endocrinology. Spend time connecting with peers and colleagues, exchanging ideas and information, and getting out in front of the latest trends and advancements in hormone health. The meeting also hosts other satellite and pre-conference events.

2019 represents a convergence of science www.endocrine.org/endo2019

### Endocrine Fellows Series: Type 1 Diabetes Care and Management New Orleans, Louisiana March 19 – 21, 2019

This comprehensive conference is for adult and pediatric endocrine fellows interested in type 1 diabetes. The unique and highly sought-after program is an opportunity to learn from leaders in the field through interactive sessions. The curriculum is specially designed to support early- career endocrinologists by enhancing skills with comprehensive education not typically taught in fellowships and providing the opportunity to connect with thought leaders and peers.

https://www.endocrine.org/T1Dfellows

### International Pituitary Congress New Orleans, Louisiana March 20 – 22, 2019

The Sixteenth International Pituitary Congress will present an exciting group of member and guest international experts in pituitary problems. It will include distinguished clinicians and clinical researchers, fellows in training, and experts in basic science. There will be cutting-edge in-depth topics that will permit each attendee to become familiar with the latest trends in pituitary endocrinology. The format of the meeting is intended to facilitate maximum interaction and free exchange of ideas among the participants and speakers.

http://pituitarysociety.org

### MEN 2019: 16th International Workshop on Multiple Endocrine Neoplasia

Houston, Texas, March 26 – 29, 2019 In keeping with the spirit of the original MEN workshop, MEN 2019 will focus on emerging topics in the genesis and therapy of malignant endocrine tumors associated with multiple endocrine neoplasia. The goal of the workshop will be to provide an outline for basic and clinical research focused on these malignant manifestations. The meeting will bring together local and international experts on multiple endocrine neoplasia to focus on these subjects. A significant portion of the meeting will be spent in workshops centered on emerging

### ENDOCRINE ITINERARY

topics and the development of an international roadmap for future research and clinical trials, and the remainder of the meeting will be composed of largegroup didactic sessions.

https://www.mdanderson.org/conference

### Society for Inherited Metabolic Disorders (SIMD) 41st Annual Meeting

Bellevue, Washington, April 6 – 9, 2019 The SIMD meeting will feature a half-day joint session with the American College of Medical Genetics and Genomics. Topics discussed include novel IEMs and treatments, diagnosis of IEMs, complementary use of genomics and metabolomics, and a satellite session on cerebral creatine deficiency syndromes hosted with the Association for Creatine Deficiencies. www.simd.org



### 2019 Clinical Endocrinology Update

Miami, Florida September 5 – 7, 2019 Seattle, Washington September 19 – 21, 2019

Each year CEU brings together hundreds of endocrine clinicians for a unique learning experience and opportunities to network with expert faculty and colleagues. Attend the 71st CEU to receive the most trusted and clinically relevant information about recent advances in the field of endocrinology. The educational programming at CEU appeals to clinicians at all levels of practice, as well as fellows and other members of the clinical practice team.

https://www.endocrine.org/ceu

Photo: Shutterstock.com

### INTERNATIONAL ITINERARY

### **Thyroid Fest**®

### Mazatlan, Mexico, April 4 - 6, 2019

Thyroid Fest® is a celebration of knowledge born from the efforts of an international and interdisciplinary team aiming to promote comprehensive education in the area of thyroid health. The Thyroid Fest leadership team is composed of Latin American doctors with world-class training that include endocrinologists, pathologists, radiologists, and endocrine surgeons who believe that teamwork from the point of view of each specialty makes a significant difference in thyroid patients and, in turn, contributes to healthcare science.

www.thyroidfest.org

### Keystone Symposia on Immunometabolism and Metaflammation and Metabolic Disorders Vancouver, BC, Canada, April 14 – 18, 2019

This conference will cover the molecular mechanisms and physiological outcomes of immunometabolic interactions in the context of chronic metabolic diseases. www.kevstonesvmposia.org/19D6

### **World Peptide Congress**

### Tokyo, Japan, April 17 – 18, 2019

The World Peptide Congress will bring together world-class biochemists, scientists, professors, and scholars to concentrate on "Accelerating Current Innovations in Peptide Research." Peptides play important roles in living body systems by controlling, directing, and coordinating inter- and intra-cellular communications and cellular function, and this conference will focus on the latest stimulating patterns and advancements in the field of peptide science.

https://www.meetingsint.com/conferences/peptide

### **World Congress on Thyroid Cancer**

### Rome, Italy, June 20 – 22, 2019

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

www.thyroidworldcongress.com

### **9th International Conference on Children's Bone Health** Salzburg, Austria, June 22 – 25, 2019

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

www.iccbh.org

### **28th European Diabetes Congress**

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

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

# **CONSTANT CRAVING:**



# Linking<br/>Addiction and<br/>ENDAddiction and<br/>EndocrinologyEND2019A variety of cases will be presented at<br/>ENDO 2019 that will demonstrate

**BY DEREK BAGLEY** 

A variety of cases will be presented at ENDO 2019 that will demonstrate how certain endocrine treatments can cause or worsen addictive behaviors. Ashley Grossman, MD, FRCP, discusses how with a little bit of detective work, endocrinologists can understand the underlying circumstances that cause these erratic actions.



And it's only when you maybe talk to [a patient's] family that you find out that **they are spending tens of thousands of dollars on gambling debts** or they're buying lots and lots of brand-new cars."

- ASHLEY GROSSMAN, MD, FRCP, OXFORD UNIVERSITY, OXFORD, UNITED KINGDOM

shley Grossman, MD, FRCP, of Oxford University in the United Kingdom, was involved in the care of a patient many years ago who suddenly began behaving strangely in his personal life. This patient started having affairs. He spent money well beyond his means, making strange and ill-advised investments, and throwing lavish parties. He bought multiple Rolls Royces.

Eventually this patient's wife left him because of his erratic behavior. He ended up destitute. But all of his out-of-character actions and their subsequent consequences were the result of an endocrine disorder — or more accurately, a treatment for an endocrine disorder.

"His whole life was ruined because he was taking these drugs, and nobody specifically connected his chaotic lifestyle. Maybe he didn't even tell them about it," Grossman says. "He just came in and said, 'Oh, I'm feeling fine. Everything is good.""

Most endocrinologists, when asked what made them want to go into this particular specialty, will say that they like how endocrinology ties into so many other things, and they enjoy following the clues, solving the puzzle — true detectives. One of the highlights of **ENDO 2019** in New Orleans is a symposium on Tuesday, March 26 titled "Neuroendocrine Aspects of Addictive Disorders." This session will touch on a number of topics, from food addiction to the opioid epidemic — as well as the lessons learned from cases like Grossman's patient: that even endocrine treatments can play a role in developing compulsive and dangerous behaviors.

Scheduled to share the lectern with Grossman are Nicola Abate, MD, University of Texas Medical Branch Galveston; Gavin Bart, MD, PhD, Hennepin Healthcare, Minneapolis, Minn.; and Anthony P.



Ashley Grossman, MD, FRCP



666 My talk is really just to increase awareness. It can occur in men or women. It's maybe more common in men. It can occur at any age and often at any dose."

> - ASHLEY GROSSMAN, MD, FRCP, OXFORD UNIVERSITY, OXFORD, UNITED KINGDOM

Goldstone, PhD, Imperial College London, U.K. The goal of the session is to educate practicing clinicians so that they can better recognize patients who might be affected.

### Side Effects

Millions of people in the U.S. and the U.K. have some sort of addiction, and many of those people will engage in compulsive behaviors while on drugs or alcohol, or they will engage in destructive behaviors to obtain more drugs or alcohol. But this is a different story.

Grossman and his team analyzed data from patients who are being treated for prolactinomas, for which they take dopamine agonists, drugs tht have been known to cause impulse control disorders in patients being treated at higher doses for Parkinson's disease. Dopamine agonists are a primary treatment of prolactinomas because these drugs have been shown to be effective — even at lower doses — at shrinking these tumors. "They have very widespread use, and the most common drugs are bromocriptine and cabergoline," Grossman says. "These same drugs are also used at much higher doses in patients with Parkinson's disease. In patients with Parkinson's, it was known that at least 10%, maybe up to 50% of all patients [get] impulse control disorders, and that's defined as having a very strong impulse or motivation to do something which you know is harmful for yourself or other people. And that's because it activates a subclass of dopamine receptor which causes these behavioral problems."

Impulse control disorders are an adverse side effect of dopamine agonists, and impulse control disorders carry with them a number of documented comorbidities, including depression and anxiety, problems sleeping, and even development of substance or gambling addictions. And while impulse control disorders are seen more in younger patients who are being treated for Parkinson's disease, Grossman says endocrinologists are seeing them more frequently in people being treated for prolactinomas, even small ones, who are taking much lower doses than patients with Parkinson's.

### Family Matters

In a 2018 article published in *Drug Safety* by Grall-Bronnec, et al., titled "Dopamine Agonists and Impulse Control Disorders: A Complex Association," the authors write: "A substantial amount of literature is consecrated to the examination of the links between the use of [dopamine agonists] in [Parkinson's disease] and the development of [impulse control disorders], and this topic continues to be a very active field of research. In most cases, emphasis is placed on iatrogenic factors. Furthermore, the same association in [restless leg syndrome] or prolactinoma is rarely addressed, and, to the best of our knowledge, there is no review available that takes into account the three diseases for which [dopamine agonists] are prescribed." Of course, the review goes on to do just that, but the study of impulse control disorders in patients taking dopamine agonists for prolactinoma is still a relatively new arena.

And what's more is the fact that impulse controls disorders aren't easily manifested, according to Grossman. "People don't realize they're connected," he says, "and the main types of impulse control are compulsive gambling, compulsive sexuality, compulsive shopping, and all sorts of compulsive and sometimes repetitive behaviors which can be very damaging to the individual and their family."

When a patient comes into an endocrinologist's office, the conversation is usually about how they feel, questions about hormone level tests. But even patients who have developed impulse control disorders may tell their endocrinologists that they feel just fine. "And it's only when you maybe talk to their family that you find out that they are spending tens of thousands of dollars on gambling debts or they're buying lots and lots of brand-new cars," Grossman says.

### **Making the Connection**

In the conclusion to the paper by Grall-Bronnec, et al., the authors write, "The prevalence of [impulse control disorders] ranged from 2.6 to 34.8% in [Parkinson's disease] patients, and from 7.1 to 11.4% in [restless leg syndrome] patients. There are insufficient data available on prolactinoma to draw a conclusion with respect to prevalence."

Grossman's talk at **ENDO** this month in New Orleans is aimed at raising the specter of the rare but real possibility that patients being treated for prolactinomas with dopamine agonists will develop impulse control disorders. The patient who lost everything because of his impulse control disorder might have been spared that fate. But again, endocrinologists might not be aware that there is a connection, or the patient may not think about it, or even could be aware there's a problem but too embarrassed to bring up their gambling problems or outrageous spending habits.

"My talk is really just to increase awareness," Grossman says. "It can occur in men or women. It's maybe more common in men. It can occur at any age and often at any dose."



BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE THE COVER STORY ON ARTIFICIAL INTELLIGENCE IN THE FEBRUARY ISSUE.

Members and faculty of the 2018 Future Leaders Advancing Research in Endocrinology (FLARE) program. Pictured are: Top left to right: Simon Rhodes, PhD; Genevieve Neal-Perry, MD, PhD; Next row: Sherri-Ann Burnett-Bowie, MD, MPH; Daniel Ruiz; Irene Aninye, PhD; Ron Varghese, MBBS. Next row: Andrew LaPelusa; Jean Pujals-Kury, MD; Aurelia Whitmore, PhD. Next row: Stephanie Barrow; Stephen Hammes, MD, PhD; Sade Williams; Taneisha Gillyard. Next row: Lediya Cheru, MD; Marimar Hernandez-Perez, PhD; Mark Roberson, PhD; Irina Delgado Varela, MD. Next row: Shanna Newton; E. Dale Abel, MD, PhD; Daniel Tobiansky, PhD;

Camille McLean, MD. Next row: Alina West, MD, PhD; Elaine Alarid, PhD; Luis Chavez, MD. Bottom row: Joshua

Joseph, MD; Brandi Smith; Lindsey Trevino, PhD; Diana Elizondo, PhD; Katherine Araque, MD.



Thomas Landefeld, PhD, inaugural chair of the Endocrine Society's Minority Affairs Committ<u>ee</u>



Sherri-Ann Burnett-Bowie, MD, MPH, chair of the Society's Committee on Diversity & Inclusion (CoDI)



Cherie Butts, PhD, Committee on Diversity & Inclusion member

# A Quarter Century Celebrating DIVERSITY

n the early 1990s, Thomas Landefeld's, PhD, involvement in racial health disparities and minority affairs led him to join the Minority Affairs Committee (MAC) at the American Society of Biochemisty and Molecular Biology. He had been a member of the Endocrine Society for his entire scientific career and knew a MAC was needed here as well. So, it was during an **ENDO** meeting that Landefeld met with then-President Susan Smith to broach the idea. From the 1990s to now, the Endocrine Society has made great strides in creating a professional home for all. *Endocrine News* takes a look back at the evolution of the Society's Committee on Diversity and Inclusion and how it has steadily grown throughout the years.



Members and faculty of the 2019 Future Leaders Advancing Research in Endocrinology (FLARE) program. Pictured are: Top row: Joshua Joseph, MD; Genevieve Neal-Perry, MD, PhD; Glenn Rowe, PhD; Simon Rhodes, PhD. Next row: Ricardo Correa, MD; Stephen Hammes, MD, PhD; Mark Roberson, PhD; Yvette Huet; PhD. Next row: Valene Garr-Barry; Vitor Martins; Sherri-Ann Burnett-Bowie, MD, MPH. Next row: Cristal Hill, PhD; Margaret Bell, MS; Natalie Mora, MD, MPH; Tiffany Richardson. Next row: Carlos Santos-Perez; Sharifa Love-Rutledge, PhD; Tiffany Miles; Leanne Burnham, PhD. Next row: Brenda Dorcely, MD; Brittany Rice, MS; Estelle Everett, MD; Sando Ojukwu, MD; Janiece Glover. Next row: Kai Jones; Kenilia Ventura, MD; Ashley Santaliz Casiano; Trisha Cubb, MD; Sudeh Izadmehr, PhD; Lindsey Trevino, PhD. Bottom row: E. Dale Abel, MD, PhD; Ifechukwude Ebenuwa, MD; Kristen Turner, MS; Marissa Lightbourne, MD, MPH; Jose Casasnovas, PhD; Leonor Corsino, MD, MHS.

 The minority membership in our society was embarrassingly low so what we wanted to do first was get more members who were representative of those groups and/or sensitive to minority disparity issues.
 We also wanted those individuals to play more of a role in the Society, not just on a Minority Affairs Committee but on program committees, meeting committees, etc."

- THOMAS LANDEFELD, PHD, PROFESSOR OF BIOLOGY AND PRE-HEALTH ADVISER, CALIFORNIA STATE UNIVERSITY, DOMINGUEZ HILLS, CARSON, CALIF. "I told her that I believe for where we are right now and where we're going to be in the future, that it's critical the Society establish a Minority Affairs Committee," he recalls. "Not just for the changing U.S. demographics but also for the minority health disparities, a lot of which are endocrine-based." Landefeld is now a professor of biology and pre-health adviser at California State University, Dominguez Hills.

"Susan was very receptive and asked that I chair the committee and pick members to serve," he says.

That was 1994, and 25 years into its mission, the Endocrine Society's MAC — now known as the Committee on Diversity and Inclusion (CoDI) — is reflecting on its footprint in the specialty.

### Shaping a Group and Mission

Landefeld recalls the committee started with five members and "minorities" were then defined as underrepresented minorities who were primarily black, Hispanic, or Native American. Along with minority disparity issues, the members were also tasked with improving diversity within the Endocrine Society and endocrine specialty. As such, one of MAC's first efforts was organizing a Minority Reception at **ENDO**, the Society's annual meeting.

"The minority membership in our society was embarrassingly low so what we wanted to do first was get more members who were representative of those groups and/or sensitive to minority disparity issues," Landefeld says. "We also wanted those individuals to play more of a role in the Society, not just on a Minority Affairs Committee but on program committees, meeting committees, etc."

The minority health disparities of the endocrine disorders have been well documented: For instance, African American and Hispanic adults are almost twice as likely to be diagnosed with diabetes as non-Hispanic whites, according to the Office of Minority Health. In 2015, African American women were 60% more likely to be obese than non-Hispanic white women.

One of the reasons attributed to the slow progress in eliminating these disparities is the corresponding disparity issue in the number of minorities with careers in medicine.

An article in the November 16 issue of *PLOS One* found that blacks and Hispanics are more underrepresented in 2016 than in 1990 across all academic ranks (assistant, associate, and full professor) and 16 specialties, except for black females in obstetrics and gynecology.

Another 2016 report by the Association of American Medical Colleges found that despite efforts by U.S. medical schools to diversify their pool of applicants, one demographic, black males, has remained unchanged for nearly 40 years. In 1978, 1,410 black men applied to medical schools. In 2014, the number remained nearly unchanged at 1,337 men.

Landefeld recalls one of the early programs his committee initiated to try to reverse these trends.



Early-career members conferring with their colleagues at the ENDO 2018 poster session.



Early-career members networking at the ENDO 2018 mentoring and poster session.



Liselle Douyon, MD, (right) from the University of Michigan Healthcare Center in Ann Arbor, discusses one of the student's posters at ENDO 2018.



Joshua Joseph, MD, (center) from the Ohio State University Medical Center confers with some of the students at the **ENDO 2018** mentoring and poster session.

He and the Endocrine Society teamed up to earn a National Institutes of Health grant to initiate "short courses in endocrinology" at minority institutions. These short courses had the sole purpose of exposing minority students to the specialty.

"A lot of schools, especially some of the small schools and the minority-serving institutions, don't have an endocrinology course so the grant allowed for various members of the Endocrine Society to volunteer to spend two to three or four to five days at an institution teaching a course," he explains. "We were very pleased because for the Society to get a grant funded for several years, it resulted in a lot of exposure to undergraduate students, particularly minority students, to the field of endocrinology."

### **Expanding "Diversity"**

Sherri-Ann Burnett-Bowie, MD, MPH, now serves as chair of CoDI, and says the need for similar programming that recognizes and then addresses some of the major gaps is still a critical goal. In addition to the name of the committee, the scope of "minority" has also changed over the years.

"With the transition to CoDI there's been an expansion to thinking about diversity more broadly," she says. "In addition to supporting our Black, Latinx, and indigenous members, CoDI also supports our LGBTQ members, and hosts symposia on clinical initiatives or research related to health disparities related to race, ethnicity, sexual orientation, or gender identity."

Burnett-Bowie is an assistant professor of medicine at Harvard Medical School and a clinical investigator in the Massachusetts General Hospital Endocrine Unit. She assumed the role as chair in 2016 and will end her term this March. CoDI is now made up of 16 members, including liaisons and interns, who meet twice in person and via several conference calls each year.



"The greatest challenge is still conveying the importance of this work broadly," says Burnett-Bowie. "Our current context is challenging. As a Society, and in the current broader society, there have been relatively limited conversations about what diversity brings to the table," she says.

"There is tremendous investment on the Society level in CoDI's programming, but some of the challenge has to do with making people aware of what we do, for example, our FLARE program, Future Leaders Advancing Research in Endocrinology," she continues.

The goal of FLARE is to provide graduate students, post-doctoral fellows, clinical fellows, and junior faculty from underrepresented minority communities the skills to achieve successful, rewarding careers in endocrine research.

"It's a great model that fosters tremendous community by having these Fellows connect with peers and faculty who look like themselves, as well as engaged allies," Burnett-Bowie adds. "The leadership development that occurs is tremendous. FLARE is a great example of how a society can create meaningful change around improving diversity in medicine. For me, that is very hopeful, and hope-filled."

Cherie Butts, PhD, associate medical director at Biogen, has served on CoDI for the past two and a half years and agrees on the importance of having a clear strategy to enhancing diversity throughout the Society and specialty.

"We should ensure all activities across the Society and within the endocrine specialty incorporate diversity-related aspects, rather than CoDI taking responsibility for developing separate activities," she says.

"The more opportunities the Endocrine Society has to include diversity and inclusion activities at our meetings and annual conferences, the more we will be at the leading edge around clinical care, innovation, and investigation," Burnett-Bowie adds.

The more opportunities the Endocrine Society has to include diversity and inclusion activities at our meetings and annual conferences, the more we will be at the leading edge around clinical care, innovation, and investigation."

— SHERRI-ANN BURNETT-BOWIE, MD, MPH, CHAIR, COMMITTEE ON DIVERSITY AND INCLUSION; ASSISTANT PROFESSOR OF MEDICINE, HARVARD MEDICAL SCHOOL; CLINICAL INVESTIGATOR, MASSACHUSETTS GENERAL HOSPITAL ENDOCRINE UNIT, BOSTON, MASS.

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

# Post Dense: Endocrinologists & Stress reduction

A recent survey showed that almost half of all endocrinologists describe themselves as being **"burned out."** Fortunately, several institutions across the country have launched a variety of programs from clubs and social events to meditation, all in an effort to relieve stress and make their own wellness a priority.

or physician and researcher Srijan Sen, MD, PhD, his career interest in the connections among depression, burnout, and medical training stemmed from personal early-career experience.

While studying for his medical and doctorate degrees at the University of Michigan, Sen said he experienced depression throughout. In the same era, Sen's good friend in the same program took his own life, and another friend in a different medical program leaped from the top of a parking structure after a tough work shift. That friend survived but is permanently paralyzed from the suicide attempt.

"Stress is an important part of why people get depressed," says Sen, the Frances and Kenneth Eisenberg Professor of Depression and Neurosciences, associate professor, and the associate chair for research and research faculty development in the Department of Psychiatry in the Molecular and Behavioral Neuroscience Institute at the University of Michigan in Ann Arbor. "Studying the link between stress and depression means that everything is retrospective. When I had just started medical training, my classmates and I were all pretty happy and interesting people in May. Six months later, a lot of people were angry, depressed, and/or breaking up with their longtime girlfriends or boyfriends. I wanted to determine how to determine stress in a large group of people."

Physician burnout, which includes stress, anxiety, and depression while managing the intense workload of medical training and later, medical practice, is well documented. In Medscape's 2019 National Physician Burnout, Depression, and Suicide Report, a survey of more than 15,000 physicians, 44% overall said they were burned out. Specialists in diabetes and endocrinology in particular ranked seventh out of 29 specialties reporting stress; with 47% of endocrinologists describing themselves as burned out.

Since 2007, Sen and his colleagues have followed more than 20,000 people as first-year physicians, enrolling about 3,000 new subjects each year from institutions across the U.S. Researchers follow subjects throughout their intern year and for some, even longer. Sen tries to understand what factors contribute to who gets depressed, anxious, and/or suicidal, and what factors contribute to such diagnoses.

Many factors contribute to burnout. They include intense workloads, the profound demands of patient care, and the realities of working with electronic medical records systems that can add time to already-packed schedules. It can be hard to maintain effective self-care tools such as eating healthy foods, exercising regularly, and sleeping adequately. For some, balancing a medical career with raising a family and finding/maintaining quality childcare contributes to feelings of depression as well.

Sen notes that about 3% of all people report depression before becoming physicians; that number spikes to 25% during the first year of residency. Many are women, who are typically the ones who oversee the tasks related to having and raising children.

"Medicine isn't good about resolving those work-family conflicts," Sen says. Burnout, which most commonly describes work stress, can also include home stress, and Sen notes that about 3% of all people report depression before becoming physicians; that number spikes to 25% during the first year of residency.





Burnout doesn't just affect the individual; it affects patient care and employers, too. Research has shown that there's "a lot of attrition for depressed physicians and it's costly for the system," Sen says. "Once they drop out, it takes hundreds of thousands of dollars to replace them. Depressed physicians struggle and work less efficiently." This opens up challenges to the overall medical system to help prevent burnout and depression whenever possible. "the conflict between work and home drives burnout." And while the medical field is typically resistant to change, Sen thinks leaders are recognizing its impact.

"It's complicated, and we haven't made much progress with it yet," he says. "But higher-ups and CEOs of hospitals and governing organizations are realizing that in the last one to two years, that burnout is a critical issue."

### **Efforts to Minimize Burnout**

While burnout can affect physicians at any stage in their careers, there are efforts to identify burnout at the earliest stages, particularly with the transition from medical school to residency, and residency to fellowship programs.

"I think we understand a number of challenges that younger trainees face when they enter their training period," says Laurence Katznelson, MD, a professor of neurosurgery and medicine (endocrinology), the associate dean of graduate medical education, and the medical director of the Pituitary Center at the Stanford School of Medicine, in Stanford, California.

"Some of the more difficult challenges include what are sometimes the simple things: ensuring adequate sleep, ensuring support through colleagues or family," Katznelson says.

Finding support as community changes can be challenging especially when residents move from a larger community of 50 - 60 residents at one institution to perhaps two to three trainees in a fellowship program, Katznelson notes. To combat feelings of isolation, Stanford offers social events for fellows in different departments, to help develop larger communities. The food choices at such events have been tweaked as well, he says. "We try to ensure adequate access to nutrition in our Journal Clubs; we don't serve pizza anymore. Instead, we offer more salads, and more vegetarian and meat dishes." Helping people nourish themselves with more nutritious food can help improve their well-being, which can help combat feelings of burnout.

Also, helping trainees have access to their own medical and dental care helps to create an environment so people feel they can take care of their basic needs, or even to have time to take care

When I had just started medical training, my classmates and I were all pretty happy and interesting people in May. Six months later, a lot of people were angry, depressed, and/or breaking up with their longtime girlfriends or boyfriends. I wanted to determine how to determine stress in a large group of people."

— SRIJAN SEN, MD, PHD, FRANCES AND KENNETH EISENBERG PROFESSOR OF DEPRESSION AND NEUROSCIENCES; ASSOCIATE PROFESSOR, ASSOCIATE CHAIR FOR RESEARCH AND RESEARCH FACULTY DEVELOPMENT, DEPARTMENT OF PSYCHIATRY IN THE MOLECULAR AND BEHAVIORAL NEUROSCIENCE INSTITUTE, UNIVERSITY OF MICHIGAN, ANN ARBOR

of a car that needs servicing so that the trainee can get where they need to go each day, is important. "This has a major impact on mood and burnout and one can make the case that burnout can lead to patient care errors" Katznelson says.

A focus on the health and wellness of medical trainees isn't brand new, though Sen thinks it's become more widespread in the past few years. The Georgetown-based Center for Innovation and Leadership in Education (CENTILE) was established in 2002. The program offers Georgetown's medical students programs in handling stress, such as meditation and guided imagery, as well as other classes that help students stay aware of how they can maintain healthy habits. There are similar initiatives at other schools, such as the University of Cincinnati's Center for Integrative Health and Wellness, which offers such skills training to other graduate-level students as well as medical students.

Amisha Wallia, MD, MS, an assistant professor at the Northwestern University Feinberg School of Medicine in Chicago, Illinois, graduated from Georgetown School of Medicine and was one of the CENTILE program's first participants during the 2001 — 2002 school year. While there, she learned about guided imagery, relaxation exercises, and biofeedback, among other stress-reducing techniques. "There are definitely different ways to promote overall stress management and empathy that are not part of the traditional medical curriculum," she says.

The challenge is putting those skills into practice while managing a busy medical career. "The program allows people to integrate these techniques in their own daily life, but it's hard in common medical practice to do so, because technically, that time may not be reimbursed, and may not be appreciated in general in the practice," Wallia says.

But making the time for one's own relaxation, whether that comes from regular exercise apart from work, self-awareness, and pursuing enjoyable interests outside of medicine, is important, Wallia maintains.

"It is hard to find the time as working physicians. Because we are so busy taking care of other people," she says. She advises physicians to seek out whatever opportunities might exist in their institutions or communities that help support selfcare. "You can't see 30 patients a day without being at your optimal self," she says. "Physicians have to make it a priority that wellness can help us achieve the standards of current American healthcare delivery with the current demands of clinical practice."

### **Burnout's Financial Costs**

Burnout doesn't just affect the individual; it affects patient care and employers, too. Research has shown that there's "a lot of attrition for depressed physicians and it's costly for the system," Sen says. "Once they drop out, it takes hundreds of thousands of dollars to replace them. Depressed physicians struggle and work less efficiently." This opens up challenges to the overall medical system to help prevent burnout and depression whenever possible. "It's probably a big investment to convince systems to have better policies, to invest in medical scribes and other things to reduce the administrative burden. My hope is that we'll make progress in that direction," he says.



Electronic medical record (EMR) systems that require physicians to spend more time filling out online reports and less face-to-face time with patients play a role in what underlies burnout. "The more time we are spending with computers, the more depressed we are," Sen notes. EMR systems have positive attributes, Katznelson says, such as making it easier to access lab results and makes it easier for physicians and patients to communicate. "But the negative is the amount of time it takes in one day to complete reports, and it reduces the amount of eye contact with patients. It also makes an enormous amount of material to review on a daily basis," he says.

"This leads to the volume of information and immediate communications that is now available to all physicians, where the amount of information is to such a high degree, online, and at your fingertips," Katznelson says. "Given that there are duty hours, it makes the day so compact that people feel stress, leave work, and feel they haven't finished their work."

Some EMR improvements, such as reducing the number of alerts physicians receive when filling out reports or having templates with fewer steps to process, can help reduce stress from the EMR model, Katznelson adds.

Fully addressing burnout in medicine requires a systemic approach, rather than little modifications here and there, Katznelson adds. "People are working very long and compact hours and are also being paid a little rate; essentially, it's an apprenticeship, which is unworkable at the urban centers level. Affordability of living and working, especially here at Stanford, causes enormous stressors. Maybe we need to rethink salary scales and how we support them," Katznelson says.

Sen puts it even more plainly.

"I think the equivalent is to think about how Google treats its 30-year-old employees better than medicine does in many ways," he says. (1)

ALKON IS A FREELANCE WRITER BASED IN MASSACHUSETTS. SHE IS ALSO THE AUTHOR OF THE BOOK, BALANCING PREGNANCY WITH PRE-EXISTING DIABETES: HEALTHY MOM, HEALTHY BABY.

**66** You can't see 30 patients a day without being at your optimal self.

Physicians have to make it a priority that wellness can help us achieve the standards of current American healthcare delivery with the current demands of clinical practice."

- AMISHA WALLIA, MD, MS, ASSISTANT PROFESSOR, NORTHWESTERN UNIVERSITY FEINBERG SCHOOL OF MEDICINE, CHICAGO, ILLINOIS

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# STEP<br/>BY<br/>STEP:Introducing Patients to<br/>Continuous Glucose Monitors



Taking a step-by-step approach to introducing a patient to new technology can lead to better acceptance of new devices and much better experience for the patient, caregivers, and the clinician.

> Increasing in availability and convenience, continuous glucose monitors (CGM) offer diabetes patients the opportunity to improve their glucose control, but many patients are intimidated by new technology. Physicians can ease the way for patients' acceptance by introducing CGMs in a step-by-step process, according to Anne Peters, MD, director of the clinical diabetes program and professor of clinical medicine at the Keck School of Medicine at the University of Southern California in Los Angeles.

> Peters finds big individual differences in the ability to adapt to technology, so she tailors the process to each patient's needs and comfort.

### **Choosing a Model**

The first step is to choose the most appropriate model for the patient from the many available options — addressing key questions such as insurance coverage, whether the device requires calibration, and whether it has builtin alarms. "I discuss with patients what is right for them and what their needs are," Peters says. "I work with people to set up expectations and then have them make a choice."

The selection process is beyond the scope of this article, but the Endocrine Society has posted patient-oriented information on the most commonly used CGM models at https://www.hormone.org/diseases-and-conditions/diabetes/diabetes-management/commonly-used-cgms.

### **Training Visit**

When patients receive their device, the package includes written information with references to online tutorials on how to use it, but most of Peters' patients need some hands-on help to learn how to use it.

At the first, introductory appointment, Peters trains patients on the basic use of the CGM.

**If someone is having what I consider dangerous hypoglycemia, I'm going to see them much sooner.** But if I see a patient in two weeks and they are doing really well, we might make some dose adjustments and talk about trend arrows."

- ANNE PETERS, MD, DIRECTOR, CLINICAL DIABETES PROGRAM; PROFESSOR, CLINICAL MEDICINE, KECK SCHOOL OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES



Peters sets the alarms triggered by low glucose with the purpose of avoiding episodes of hypoglycemia. She explains to patients that avoiding hypoglycemia may raise their glucose overall but not to worry about that aspect at this point.

She does not set the alarms triggered by high glucose because she does not want the alarms going off too often. "My goal at first is to just deal with lows and to get a patient engaged with understanding the data. I find that if I put too many high alarms on at the very beginning, the alarms go off all the time, and the patients develop alarm fatigue. It also wakes up their significant other, and it is bad to get the significant other to dislike the device early on," Peters says.

### **Second Visit**

Ideally, the patient returns in two weeks for a follow-up visit when Peters can analyze the data captured by the CGM. It's a treasure trove of information that allows the physician to see for the first time the patient's high and lows, invaluable information for adjusting their base rates. "I always look at it together with the patient and try to see if there are any specific patterns or trends that need to be addressed," Peters says.

"At the first follow-up visit, I am looking at the overall glycemic profile and am particularly looking for hypoglycemia. I will adjust to try to eliminate that," Peters says. Adjustments could include using more long-acting insulin or changing the patient's mealtime carbohydrate ratio.

Some people find the amount of data overwhelming and need to be cautioned not to overreact to every change in their glucose levels. "I tell people to get a sense of how they are doing, and then work on insulin timing, insulin dosing, and what food they are eating. I take little steps, not big ones. For a lot of people, it is a great time to go see the dietitian again," Peters says.

Patients who have continued to check their glucose with fingersticks may be concerned that these readings differ from their CGM readings. Peters may need to explain that the fingersticks measure blood and the CGM measures interstitial fluid, which generally lags behind the blood, and that the difference will be greater when glucose levels are changing.

At this visit, Peters re-evaluates which alarms have been set and considers setting the alarms for high glucose levels. She will also discuss with patients how to customize the alarms to best meet their needs. "I have patients who say, 'I don't want to know during the day because I am busy in meetings. But I do want to know at night if I am going too high because then I can change my basal rate." Others have set their own alarms and complain that it is beeping all the time. So customization of the alarms is in the service of individualizing them to meet the patient's goals," Peters says.

Another important skill patients need to learn is how to upload their data to a platform where their physician can access it. This ability allows for important communication via email. "If a patient is really worried about something, they don't just have to call. They can send me a PDF of their data, and I can analyze it. It is a huge improvement in communication," Peters says.

### **Trend Arrows**

Perhaps the most useful skill to learn is how to react to the trend arrows. "If a person before a meal is 100 mg/dL and going up, then they need more insulin than if they are 100 mg/dL and going down," Peters says. But when patients are ready to learn about trend arrows varies greatly.

## AT A GLANCE

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- The increased availability and convenience of continuous glucose monitors offer patients more options for improving their glucose control.
- Patients can be overwhelmed by new technology, so introducing the various features on a stepby-step basis can ease patients' acceptance.
- Features such as trend arrows can improve glucose control but require new understanding by the patient to be most effective.



I tell people to get a sense of how they are doing, and then work on insulin timing, insulin dosing, and what food they are eating. I take little steps, not big ones. For a lot of people, it is a great time to go see the dietitian again."

- ANNE PETERS, MD, DIRECTOR, CLINICAL DIABETES PROGRAM; PROFESSOR, CLINICAL MEDICINE, KECK SCHOOL OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES "Whether I teach about arrows at the first follow-up visit or a subsequent one depends on how well the patient is doing with the data," Peters says. Trend arrows represent "a more advanced concept of adding in or subtracting insulin rather than a fixed number. It is in addition to carb counting, correcting, adjusting for exercise, etc."

Trend arrows deserve serious attention because they may provide perhaps the most significant information for keeping glucose levels on an even keel. Therefore, the Endocrine Society has published guidance for adults using the Freestyle Libre Flash system (available at https://academic.oup.com/jes/article/2/12/1320/5181247) and the Dexcom G5 System (https://academic.oup.com/jes/ article/1/12/1445/4642923) as well as for children using the Dexcom G5 (https://academic.oup.com/jes/article/1/12/1461/4642924).

### **Continued Follow-Up**

The pattern of follow-up meetings to learn about trend arrows or simply the basics of the CGM depends on how well the patient is adjusting. "If someone is having what I consider dangerous hypoglycemia, I'm going to see them much sooner," Peters says. "But if I see a patient in two weeks and they are doing really well, we might make some dose adjustments and talk about trend arrows," Peters says. That patient might only require follow-up with email and an office visit in three months.



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At the University of Edinburgh, Mark Nixon, PhD, recently became a principal investigator as he seeks to unlock the mysteries of cardiovascular disease and its link to obesity and type 2 diabetes. He reminisces about his first experiments as a child as well as why he's staying in academia.

# **Q**&A: Mark Nixon, PhD

ark Nixon, PhD, recently entered his seventh postdoctoral year and has embarked on a new role as a principal investigator at the Centre for Cardiovascular Science at the University of Edinburgh. With his new five-year Intermediate Research Fellowship funded by the British Heart Foundation, Nixon is focusing on tissue-specific mechanisms that regulate glucocorticoid delivery to, and export from, inflamed tissues.

*Endocrine News* spoke with Nixon to learn more about how the young researcher's interests guided him to where he is today.

Endocrine News: Do you remember what first sparked your love of science?

**Nixon:** Like many other scientists, my interest in science started with a huge curiosity for nature and a love of mammalian physiology. I still remember sitting at my kitchen table as a child looking at insects under the microscope from my first "science kit" and then being ordered to clean up the mess before dinner! The discovery of this microscopic world, one that determines how, for example, the cells in our bodies respond to different situations, has fascinated me ever since, and it's why I love what I do.

**EN:** Have your research interests always been in endocrinology and obesity-related issues?

**Nixon:** It's inescapable that cardiovascular disease remains the largest single cause of death, not only here in the U.K., but globally. While my research interests were initially piqued at undergraduate level by the role of immune cell signaling in atherosclerosis, my focus shifted during my PhD toward investigating the underlying mechanisms of two of the biggest risk factors for developing cardiovascular disease — obesity and type 2 diabetes. At the time, the field of adipose biology was really taking off, with adipose tissue being redefined as an endocrine organ. In an age when we are less likely to undergo nutritional stress, i.e., starvation, I became fascinated with how the body evolved its response to glucocorticoids and how such mechanisms may have become maladaptive over time.

### **BY GLENDA FAUNTLEROY SHAW**

66 While my research interests were initially piqued at undergraduate level by the role of immune cell signaling in atherosclerosis, my focus shifted during my PhD toward investigating the underlying mechanisms of two of the biggest risk factors for developing cardiovascular disease — obesity and type 2 diabetes."

**EN:** How did your relationship with the British Heart Foundation (BHF) begin?

**Nixon:** The British Heart Foundation has been at the core of cardiovascular research at the University of Edinburgh for a number of years. Our Centre for Cardiovascular Science was established as one of the founding four (now six) BHF Centres of Research Excellence in the U.K. tasked with investing in promising young scientists and world-class facilities. So, my relationship with the BHF has been fostered over my years working here as a postdoctoral researcher.

More recently, that relationship has grown as I sought independent funding to establish my own research group, and this past year I was awarded an Intermediate Research Fellowship to determine how delivery of glucocorticoids to adipose tissue is determined by inflammatory regulation of its circulating binding globulin CBG (corticosteroid binding globulin). EN: Can you share more about your current work?

**Nixon:** While we know that glucocorticoid excess in adipose tissue drives increased cardiovascular disease risk, therapeutic manipulations of already established regulators of intracellular glucocorticoid action have not progressed beyond phase II trials due to insufficient efficacy on metabolic outcomes. My postdoctoral studies began exploring additional mechanisms to control adipose tissue glucocorticoid levels.

From this work I identified transmembrane export via ABCC1 as a mechanism limiting the action of corticosterone, but not cortisol, in adipocytes (see Nixon M, et al. in *Science Translational Medicine*, August 2016).

More recently, we have exciting preliminary data that inflammatory-mediated cleavage of the circulating glucocorticoid binding protein CBG may enhance delivery of glucocorticoids to obese adipose tissue. We are using a combination of murine and human in vivo, ex vivo, and in vitro models to study this mechanism.

**EN:** What are your plans after your fellowship ends? Will you stay in academia?

**Nixon:** At the moment, my focus is very much on getting my lab up and running and starting to piece together the best strategy for delivering translational research. My hope is that by the end of this fellowship, my group will have expanded to encompass several new strands of research — finding researchers from different backgrounds with new ideas who are smarter than me is something I'm really looking forward to, and something I know is crucial to the sustained success of a group. As for staying in academia, I certainly aim to be here for many more years, but I'm aware that despite its rewards, it can be a difficult and challenging career path. Thankfully, I am fortunate to be surrounded by a number of wonderful and supportive colleagues and mentors.

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

### ADVOCACY

Leo Trasande, MD, MPP, speaks to a room of congressional staffers on Capitol Hill about the damaging health and financial impacts of endocrine-disrupting chemicals.



### Trasande Speaks at Endocrine Society-Sponsored EDC Briefing on Capitol Hill

n February 6, the Endocrine Society co-sponsored with the Environmental Working Group an educational briefing for congressional staff on the impact of chemicals in cosmetics and personal care products on human health.

Senator Diane Feinstein (D-CA) plans to reintroduce legislation, the Personal Care Products Act, which "provides the FDA with the authority to regulate personal care products and sets up a process for how this will be done, including the safety review of specific chemicals for use in cosmetic products," according to a summary of the legislation. If passed, it would be the first cosmetics reform in 80 years.

Endocrine Society member Leonardo Trasande, MD, MPP, a professor in the Department of Pediatrics at New York University and director of the NYU Center for Investigation of Environmental Hazards, spoke to congressional staffers about the health risks posed by endocrine-disrupting chemicals (EDCs) in personal care products. According to Trasande, there are more the 1,000 chemicals that disrupt hormones. EDCs have been linked to autism and attention deficit/hyperactive disorder. Phthalates — found in personal care products — can cause low testosterone, which is a predictor of adult cardiovascular disease and stroke. "This isn't a one-percenter problem," Trasande says. "It's a 99-percenter problem." Trasande spoke to the economic impact EDCs have on society, costing the U.S. more than \$340 billion in health-related expenses, while costing Europe \$217 billion. A 2016 article in *The Lancet Diabetes and Endocrinology* titled "Exposure to endocrine-disrupting chemicals in the USA: a population-based disease burden and cost analysis," which Trasande co-authored, concluded: "EDC exposure in the USA contributes to disease and dysfunction, with annual costs taking up more than 2% of the GDP. Differences from the European Union suggest the need for improved screening for chemical disruption to endocrine systems and proactive prevention."

Trasande also gave a few helpful tips for personal "proactive prevention," like avoiding canned food and eating organic food, avoiding thermal paper receipts, and especially avoiding phthalates in personal care products. But his main message was that consumer activism can drive public policy. He pointed to the FDA's ban on bisphenol A (BPA) in baby bottles and sippy cups as an example. "[That ban] was really in response to consumer activism."

But studies have shown that bisphenol S (BPS) — which replaced BPA in many products — is just as disruptive to the endocrine system. Trasande says that BPS is as estrogenic, as toxic to embryos, and even more persistent in the environment. "Unfortunately, this chemical Whac-a-Mole problem isn't going away," he says. — **Derek Bagley** 

### **Endocrine Society Seeks Funding Increase for NIH**

ow that Congress has finally passed fiscal year (FY) 2019 appropriations bills for all parts of the federal government, the Endocrine Society has begun working on the FY 2020 appropriations process to provide further increases in funding for the National Institutes of Health (NIH). In recent years, the Endocrine Society and other biomedical research advocates have succeeded in establishing a trajectory of steady, sustainable increases to the NIH budget. So that this momentum is sustained, the Society is working to keep pressure on Congress and ensure that Congress values the important work done by NIH-funded endocrine researchers.

On February 28, the Society conducted a Researcher Hill Day bringing together a diverse group of Endocrine Society members representing a variety of states and congressional districts to meet with their elected representatives. During the meetings, we educated members of Congress and their staff about endocrinology and why endocrine research is critical to better understand and treat a variety of diseases and conditions. We specifically asked for Congress to:

- Provide the NIH with \$41.6 billion in FY 2020, an increase of \$2.5 billion or 6.4%
- Raise discretionary budget caps that will cut discretionary spending, including the NIH, by 10% in FY 2020
- Include report language along with the appropriations bills that support key endocrine priorities

While face-to-face meetings with congressional offices is vital to ensure that our voices are heard, we also need members around the country to take action to help make our issues, including greater funding for research, a priority. We have created an online campaign that you can use to write to your representatives and senators and tell them to raise the budget caps and provide much-needed increases to research funding. With over 110 new members of Congress, we need to make sure that biomedical research and endocrine science is one of the first things that they hear about!

To take action, please join the Society's campaign by visiting **endocrine.org/takeaction**.

### Endocrine Society Works with Congress to Support Women's Health Research Resolution



The Endocrine Society is once again supporting the Women's Health Research Act resolution that was re-introduced January 25, 2019, by Senator Tammy Duckworth (D-IL) and Representative Janice Schakowsky (D-IL). The resolution aims to recognize the need to increase awareness of sex- and gender-based biomedical research, which the National Institutes of Health (NIH) did not consider prior to 2016, the underrepresentation of women in past biomedical research and the importance of inclusive health research for women. The Society has long advocated for consideration of sex as a biological variable in NIH-funded research and is appreciative of the work of the Senator and Congresswoman to advance the issue.

The Society worked closely with Sen. Duckworth to build support in the research community for the resolution and led an effort to garner endorsement for the resolution from 30 diverse patient, researcher, and provider organizations.

### **ADVOCACY**



### **Society Advocates for Special Diabetes Program**

**E** nsuring adequate funding for the Special Diabetes Program (SDP) is a top priority for the Endocrine Society. The lives of over 114 million Americans living with or at risk for developing diabetes are being changed through this critical federal program; however, funding for SDP expires on September 30 if Congress fails to act. The Endocrine Society is working with the Congressional Diabetes Caucus to ensure that SDP is renewed before the deadline and Society members are meeting with members of Congress to increase support for the program. We also have an online advocacy campaign that members can join to urge their congressional delegations to support the SDP. We encourage you to visit the campaign at **endocrine.org/takeaction** today.

The SDP is comprised of two programs – the Special Diabetes Program for Type 1 Diabetes and the Special Diabetes Program for Indians (SDPI). Congress created these programs in 1997 to advance research for type 1 diabetes and to address the disproportionate burden of type 2 diabetes on American Indians and Alaska Natives (AI/AN). Each program currently receives \$150 million per year through a special appropriation.

Through this funding, the Special Diabetes Program for Type 1 Diabetes, which is administered by the National Institute of Diabetes and Digestive and Kidney Disorders (NIDDK), has advanced research on how to delay the full onset of type 1 diabetes, better understand the underlying causes of the disease, and prevent, treat, and reverse complications associated with the disease. This research has accelerated progress on an artificial pancreas, advanced therapies to reverse vision loss, and discovered nearly 50 genes that influence the risk of developing type 1 diabetes.

Through the SDPI, nearly 400 treatment and education programs on type 2 diabetes have been implemented in AI/AN communities. AI/ANs have the highest prevalence of diabetes, with more than 50% of adults who have been diagnosed with the disease. The SDPI has successfully reduced A1c levels, LDL cholesterol, and amputations while improving blood pressure and kidney function.

Together, these programs have proven to be a critical pathway to preventing and treating diabetes and its complications.

The Society will continue to strongly urge Congress to renew the SDP at \$200 million per program each year for the next five years to enable the continuation of critical research and educational programs to prevent and treat diabetes.

# SUBMIT TO JES AND SAVE!



*Journal of the Endocrine Society* (JES), an open access publication, provides rapid peer review and publication of research and other contributions that advance basic science, clinical science, and clinical practice in endocrinology.

- Submissions to JES now have no page charges, no color charges, and no submission fees—just a flat article processing charge for any article length, with a discount for members. All articles are immediately Open Access and are deposited to PubMed Central immediately upon publication.
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# From Book to Bench

### **COMPILED AND WRITTEN BY COURTNEY CARSON**

A lab cannot run without the proper equipment — and while centrifuges, incubators, and pipettes are necessities, lab manuals and books related to the inner-workings of the laboratory are just as vital in ensuring a lab runs as efficiently as possible. Whether it's a basic lab manual, an updated guideline that is highly specific, or a handbook that offers real-world knowledge, labs and the researchers working in those labs have a plethora of reading options that can be added to their shelves.



### At the Bench: A Laboratory Navigator

At the Bench is a unique handbook created for those who "live and work" in the laboratory. This book focuses on aspects of laboratory work not usually covered in conventional manuals, ranging from understanding basic lab techniques to how research groups work at a human level. Author Kathy Barker, who completed her postdoctoral work in the laboratory of Viral Oncology at Rockefeller University and was an assistant professor in the Laboratory of Cell Physiology and Immunology at Rockefeller University, now writes and leads workshops on the various aspects of leading a lab. *The Quarterly Review of Biology* recommended the book and stated, "The volume is superbly written, and reading is made pleasurable by multiple hilarious remarks from the author."

### www.cshlpress.com

### Live Cell Imaging: A Laboratory Manual

As lab equipment and technology rapidly advance, lab manuals must be updated to keep up with the trends. *Live Cell Imaging*, which details recent advances in imaging technology, is a compendium of emerging techniques organized into two parts. The first section is dedicated to specific methods such as fluorescent labeling and delivery and detection of labeled molecules in cells. This section is followed by an overview of experimental approaches ranging from the detection of single molecules to the study of dynamic processes in organelles, organs, and whole animals. In addition to the updated procedures, the book includes introductory and background material in an effort to create a complete lab manual on the imaging of live cells.





### Establishing and Verifying an Extended Measuring Interval Through Specimen Dilution and Spiking, EP34

The Clinical and Laboratory Standards Institute recently published a new guideline, EP34, to provide recommendations for establishing a dilution scheme to be used for patient specimens that contain measurements and concentrations in the extended measuring interval above a measurement procedure's upper limit of quantitation. Guidance is provided on determining, validating, and verifying the appropriate diluent and dilution ratio to be used for such specimens. This guideline also covers creating spiked samples for use during dilution recovery studies and using spiking to determine the suitability of a sample matrix for dilution recovery studies. www.clsi.org



### Lab Math: A Handbook of Measurements, Calculations, and Other Quantitative Skills for Use at the Bench

Written in an informal style, *Lab Math* describes basic mathematical principles and various tasks involving numbers as basic as lab equipment calibration and as advanced as quantitative polymerase chain reaction. Created as a resource to house measurements, calculations, and other quantitative skills in one place, this book features reference tables, charts, and "plug-and-chug" equation blanks for specific experimental procedures. While work at the bench requires an ever-increasing knowledge of mathematical methods and formulas, the goal of this manual is to bring those methods and formulas that are often scattered and informally organized together in one concise handbook.



### Publishing Your Medical Research

The goal of this book is to help medical researchers find success in the competitive "publish or perish" world. Designed with both the beginning and experienced researcher in mind, the guide presents technical information and modern advice aimed to guide the writer from the design of clinical trials to the analysis of data and eventually to the construction of a high-quality manuscript. The print edition is bundled with an interactive eBook edition that can be downloaded to tablets and smartphones or accessed online.

www.elsevier.com

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### **Now Hiring Endocrinologist**

### Location

Montgomery County, Maryland is a vibrant suburb of Washington, DC. Bordering the nation's capital, Montgomery County is metro accessible to the museums, national landmarks, entertainment, and sporting events of DC. With neighborhoods ranging from family-friendly suburbs to urban communities bustling with activity, Montgomery County is rich in culture and amenities.



### Overview

MWHC is a 926 bed acute care hospital and academic medical center. Endocrinology is a joint program with Georgetown University Medical Center; appropriate academic appointments available. The hospital is offering a competitive base salary, wRVU bonus, and complete benefits package including paid malpractice, CME, health insurance, 401(k) and much more.

### **Position - Endocrinologist**

Staff position in Endocrine Section with involvement in comprehensive clinical program. Clinical activities (80 percent) occur at an ancillary MedStar local facility. Education and research (20 percent) occur at the MedStar Washington Hospital Center (MWHC) in Washington DC. Interested candidates must be board certified (or eligible) in endocrinology.

### Qualifications

- MD, DO, or International Equivalent
- Board certified / eligible in Endocrinology

INTERESTED APPLICANTS, SEND YOUR CV TO: Dr. Kenneth Burman - Chief, Endocrinology Kenneth.D.Burman@MedStar.net - FAX (202) 877-6588

### CLASSIFIEDS



### ENDOCRINOLOGY PHYSICIAN

The Division of Endocrinology, Diabetes, and Metabolism at Penn State Health seeks to fill a junior faculty clinical position. This is a fixed- term position for a **BC/BE Endocrinologist** at the **Assistant Professor** rank. While the primary focus of this position is in patient care, candidates are also expected to participate in teaching and scholarly activities. Candidates will join an academic department, dedicated to education, innovation, leadership and work among highly qualified, friendly colleagues who foster excellent networking opportunities.

Located in a safe family-friendly setting of central Pennsylvania, our local neighborhoods boast a reasonable cost of living whether you prefer a more suburban setting or thriving city rich in theater, arts, and culture. Known for home of the Hershey chocolate bar, Hershey's community is rich in history and offers an abundant range of outdoor activities, arts, and diverse experiences. We're conveniently located within a short distance to major cities such as Philadelphia, Pittsburgh, NYC, Baltimore, and Washington DC. We're proud of our community involvement and encourage you to learn more about our organization.

Appropriate candidates must possess a MD, DO, or foreign equivalent and be board certified/eligible in Internal Medicine and Endocrinology. Candidates should be energetic and highly motivated.

Qualified applicants should upload a letter of interest and CV at: <u>http://tinyurl.com/pj45tup</u> Ref Job ID#954

> For additional information, please contact: Andrea Manni, M.D. Professor and Division Chief of Endocrinology Diabetes, and Metabolism c/o Heather Peffley, PHR FASPR Physician Recruiter hpeffley@pennstatehealth.psu.edu

The Penn State Health Milton S. Hershey Medical Center is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/ Disabled.



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### Employed Endocrinologist Physician Opportunity Chicagoland Area

We understand the need to balance work with a healthy personal life style. Come join a well-established physician practice that lives by this philosophy. We are growing and looking to add more providers.

### Position Highlights

- Well established opportunity 30 minutes from downtown Chicago
- 30 minute commute each way during rush hour from downtown Chicago
- Access to an abundance of cultural activities and world renowned museums that only a world class city can offer
- Private Group Partnership setting and hospital employee
  Collegial group of system physicians eager to provide
- mentorship and support in developing physician practices
  Healthcare system undergoing explosive growth and expansion
- Healthcare system undergoing explosive growth and expansion in virtually all physician service lines

### Job Requirements

- Full-time/permanent position with inpatient and outpatient practice
- Board Certified/Board Eligible required. Although subspecialty interest are encouraged, with the opportunity to design practice around personal goals.
- Unique work structure conducive to utilizing all your skills - 1 in 3 call rotation
- Office Locations in Munster, IN and East Chicago, IN
  EMR system utilized in Inpatient & Outpatient settings
  EPIC fully integrated HIMSS Stage VII (Only 5% of hospitals in country are at this level of sophistication)

- Easy to use; support department available

#### Benefit Packages

- Highly competitive salary offers (Negotiable MGMA guidelines)
- Medical/Dental/Vision insurance plans available
- 403B opportunities including employer match
- Exceptional CME funds
- Licensure reimbursement: license, CSR, DEA, Dues/ Subscriptions
- Flexible time off
- Contract bonuses off RVU's
- Sign-on bonus (negotiable)
- Relocation reimbursement (negotiable)

#### System Details

- Well established not-for-profit 3 hospital system
- Nurse practitioner support in both inpatient and outpatient settings
- Some of the most favorable malpractice laws and regulations in the country

For additional information, please contact Alan Kumar, MD and Jennifer Malinowski via email at: alan.kumar@comhs.org and jlmalinowski@comhs.org

![](_page_53_Picture_32.jpeg)

### PennState Health Milton S. Hershey Medical Center

### ENDOCRINOLOGY CLINICAL INVESTIGATOR/SCIENTIST

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

The Harrisburg-Hershey area includes the state capitol, a population of 500,000 and offers an excellent combination of low cost of living, excellent schools, cultural activities and attractions that bring millions of visitors each year. We're conveniently located within a short distance to major cities such as Philadelphia, Pittsburgh, NYC, Baltimore, and Washington DC.

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

### Qualified applicants should contact:

Andrea Manni, M.D. Professor and Division Chief of Endocrinology Diabetes, and Metabolism c/o Heather Peffley, PHR, FASPR Physician Recruiter Penn State Health hpeffley@pennstatehealth.psu.edu

Penn State Health is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.

![](_page_53_Picture_41.jpeg)

### **TEST YOUR KNOWLEDGE ON HORMONE HEALTH**

![](_page_54_Figure_1.jpeg)

### Across:

- When the pituitary gland doesn't make enough of certain hormones, you may have \_\_\_\_\_ (also called pituitary insufficiency).
- 10. Kidneys produce this hormone to stimulate production and maintenance of red blood cells.
- 11. This autoimmune condition can occur at any age with any gender, and is the most common cause of hyperthyroidism.
- 12. The part of the brain that produces gonadotropin during puberty.
- 15. The fats in the blood that are an important source of energy.
- 16. The largest endocrine-related organ system in the body.
- Physical and mental change that result in having too much cortisol in the blood for a long period of time is known as \_\_\_\_\_\_.

### Down:

- 1. Too much production of growth hormone in the blood can lead to \_\_\_\_\_.
- 2. Surgery that can limit how much calories and nutrients the body can absorb.
- 3. A steroid hormone produced in the adrenal glands that is linked to stress.
- 4. An enlarged thyroid gland, most common in women often showing no symptoms.
- 5. Substances in the environment, food, and personal care products that can interfere with normal function of the endocrine system.
- 6. A common disease resulting from the body's inability to use blood glucose for energy.
- 7. The most common type of cancer among men that grows very slowly, requiring regular surveillance.
- 8. This gender is most commonly diagnosed with osteoporosis?
- 13. A common hormonal disorder affecting 7-10% of women during reproductive age.
- 14. This rare disease prevents the body from breaking down fats and is typically a genetic disorder passed down from parents.
- An excessive growth of "male" pattern hair on a woman's body.
- This hormone stimulates the release of gastric acid, which breaks down the proteins in the food you eat.
- 20. A hormone that promotes feminine physical changes in transgender patients.

Hormone Health Network is your trusted source for endocrine patient education. Visit hormone.org today!

![](_page_54_Picture_25.jpeg)

### Patients Have Questions. We Have Answers.

### The Hormone Health Network

is the patient education affiliate of the Endocrine Society.

Our mission is to positively impact the health and well-being of patients and the public by translating the science of endocrinology. Our educational resources are based on the most advanced clinical and scientific expertise of the top endocrinologist around the globe.

Hormone.org is home to:

- Multi-lingual Fact Sheets
- Patient Guides
- Educational Videos
- 📈 Infographics
  - Find an Endocrinologist: a physician referral directory comprised of more than 6,000 Society members.
- Hormone Headlines: a free monthly email publication for patients and health care providers to serve as an additional way to learn more about hormone health.

We are committed to helping patients have informed decisions with you; their healthcare providers by moving them educated to engaged and from informed to active partners in their health care.

![](_page_55_Figure_12.jpeg)

### **Crossword Puzzle Answer**

### Across:

- 9. Hypopituitarism
- 10. Erythropoietin
- 11. Graves' Disease
- 12. Hypothalamus
- 15. Triglycerides
- 16. Digestive Tract
- 17. Cushing Syndrome

- Down:
- 1. Acromegaly
- 2. Bariatric
- 3. Cortisol
- 4. Goiter
- 5. EDCs
- 6. Diabetes Mellitus
- 7. Prostate
- 8. Women
- 13. PCOS
- 14. FCS
- 18. Hirsutism
- 19. Gastrin
- 20. Estradiol

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![](_page_55_Picture_42.jpeg)

![](_page_55_Picture_43.jpeg)

![](_page_55_Picture_44.jpeg)