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The Accidental SCIENTIST

Talking with Nobel Laureate Robert J. Lefkowitz, MD

When Robert J. Lefkowitz, MD, received the Nobel Prize for Chemistry in 2012, that was only part of his storied career as a physician scientist. A self-proclaimed "accidental scientist," Lefkowitz talks to *Endocrine News* about his recently published autobiography, misconceptions about scientists, how it felt to win the Nobel, and much more!

ON THE MOVE: Joy Wu, MD, PhD, relocates her lab during a pandemic.

STAR POWER: Rounding up the Rising Stars Power Talks winners



none Science to Health

Endocrine news

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When Robert J. Lefkowitz, MD, received the Nobel Prize for Chemistry in 2012, that was only part of his storied career as a physician scientist. With a new book on the shelves - and online shopping carts - Lefkowitz talks to Endocrine News about misconceptions about scientists, what inspired him to write a book, and how it feels for a self-described "accidental scientist" to receive a Nobel Prize.

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ENDO 2021 saw the debut of a new virtual poster competition called the Rising Stars Power Talks where 15 trainees explained their research and took questions from a virtual audience. Endocrine News catches up with the winners to learn about their research, their future plans, and more.

BY MARK A. NEWMAN

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Moving is always stressful. Just imagine factoring in social distancing protocols, adhering to California's earthquake safety standards, and pausing your research to get it done. Joy Y. Wu, MD, PhD, talks to Endocrine News about moving her research lab at Stanford University under less-than-ideal circumstances, but she and her team got it done with a lot of perseverance, patience, and Post-it Notes!

BY DEREK BAGLEY

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From segregated Alabama to a celebrated career, James R. Gavin, III, MD, PhD, the Endocrine Endocrine News talks to 2021

who discusses her award. standards for the best patient treating patients in 2020.



Meet New Endocrine Society President Carol H. Wysham, MD

he Endocrine Society is pleased to welcome its president for 2021 – 2022, Carol H. Wysham, MD, who took office March 23, 2021, at the end of the Endocrine Society's official business meeting during ENDO 2021.

As a clinical endocrinologist and diabetologist at the Rockwood Clinic, part of the MultiCare Health System in Spokane, Wash., and a clinical professor of Medicine at the University of Washington, she has been treating patients as well as conducting clinical research and resident education for more than 30 years. She has served as president-elect since March 2020.

"I am very honored to be entrusted with the responsibility of acting as president of the Endocrine Society," Wysham says. "But truth be told, we are blessed to have very the talented staff that carry out the strategy set forth by the Board of Directors."

Wysham, who succeeds Gary D. Hammer, MD, PhD, credits her predecessors for preparing her for her new role. "Over the past year, I have had the privilege to work along the current and past-presidents and the secretary-treasurer," she says. "It is truly a team effort."

Wysham's research and clinical work focuses on preventing and managing cardiovascular complications in individuals with diabetes. She earned her medical degree at the University of Iowa School of Medicine in Iowa City, then trained in internal medicine at Oregon Health Sciences University in Portland. She then returned to Iowa City to complete her fellowship in endocrinology and metabolism at the University of Iowa Hospitals & Clinics. "The entire field of endocrinology, but especially diabetes, has greatly evolved over the 35 years since I finished my fellowship," she says. "My interest in diabetes was a marriage of necessity and the exciting ongoing advances in the field – from the development of home glucose monitoring, understanding pathophysiology of complications, new treatments, and the new technologies. I have seen, firsthand, a dramatic improvement in the outcomes of patients with diabetes due to all that has come along in the past 35-plus years."

Wysham has been a member of the Endocrine Society since 1990 and has been involved as a member volunteer since 2006. She's certainly been busy in her time with the Society, sitting on the Annual Meeting Steering Committee and serving two years as the Clinical Practice co-chair and one year as the chair. "Additionally, I was a member of the Council (now Board of Directors) for the Society for three years," she says.

For Wysham, being able to apply the fascinating science of endocrinology to improving the lives of her patients continues to inspire her work. "I hold very dear the long-term relationship with my patients and love to teach!"

Now Wysham is hoping to apply her love of teaching to her goals for the Society over the next year. Her goals include: 1) Improving the pipeline of endocrinologists by developing programs to introduce endocrinology as a field early in a trainee's experience; 2) Improving the pipeline of leaders by developing mechanisms for them to be heard and recognized; 3) Strengthening the Society's 25-year commitment to diversity and inclusion; 4) Continuing to explore ways that the



AN OPEN ACCESS PUBLICATION



Society can support basic science; and 5) Broadening the role that the Endocrine Society plays in educating and supporting primary care providers.

"The Endocrine Society is already highly regarded," Wysham says. "My predecessors and the Society staff have already

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My interest in diabetes was a marriage of necessity and the exciting ongoing advances in the field — from the development of home glucose monitoring, understanding pathophysiology of complications, new treatments, and the new technologies. I have seen, firsthand, a dramatic improvement in the outcomes of patients with diabetes due to all that has come along in the past 35-plus years.

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made great strides in carrying out our strategies for global involvement as well as many of the pipeline issues I am interested in. I would like to see our Society be the educational home for all endocrinologists and others seeking knowledge about endocrinology."

-Derek Bagley

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FROM THE EDITOR



Endocrinology Icons: Highlighting Endocrine Society Members

n the heels of the hugely successful, first all-virtual ENDO 2021, April seemed like the perfect time to thaw out and shine a spotlight on the most valuable assets we have: You. The Endocrine Society's vast membership spans the globe and is what separates *Endocrine News* from the other publications in this space. Therefore, we thought it was about time we focus an issue entirely on the people that have made the field of endocrinology what it is today. And while we celebrate our past and present, we are also looking to the future and highlighting those who will ensure that the field remains in good hands.

What better way to feature Endocrine Society members than with a cover story highlighting one member's remarkable career? On page 40, senior editor Derek Bagley speaks with Robert J. Lefkowitz, MD, who received the Nobel Prize for Chemistry in 2012 (shared with **ENDO 2021** Presidential Plenary speaker Brian J. Kobilka, MD, featured in last month's issue). In "Happy Accidents," Lefkowitz not only talks about his new book but takes us on a journey through his remarkable and often byzantine career, from deciding he wanted to be a doctor when he was eight years old to his excitement when he was awarded the Nobel. If his book, *A Funny Thing Happened on the way to Stockholm: The Adrenaline-Fueled Adventures of an Accidental Scientist*, is as compelling as his interview, readers are in for a fun and compelling ride!

Speaking of award winners, on page 24 we meet the 2021 class of Endocrine Society Laureate Award recipients. We have devoted 16 pages to these leaders in the practice and science of endocrinology. The 2021 Endocrine Society Laureate Award recipients represent endocrinologists from around the world for their seminal research, meritorious service, leadership and mentorship, innovation, entrepreneurship, international contributions, education, translation of science to practice, as well as lifetime achievement. As usual, it's a very impressive list!!

Moving is always extremely stressful. Now imagine having to move during a pandemic. Now imagine instead of moving your home, you're moving Endocrine news

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Editor: Mark A. Newman mnewman@endocrine.org

Senior Editor: Derek Bagley dbaglev@endocrine.org

Art Director/Production: Anthony S. Picco

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

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President: Carol H. Wysham, MD president@endocrine.org

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

Past-President: Gary D. Hammer, MD, PhD ghammer@med.umich.edu

Secretary-Treasurer: Dolores M. Shoback, MD dolores.shoback@ucsf.edu

Chief Communications Officer: Aaron Lohr alohr@endocrine.org

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an entire research lab. While maintaining social distancing procedures. Plus, since you're in California, you need to adhere to earthquake safety requirements. This is what Joy Y. Wu, MD, PhD, had to deal with recently when she relocated her lab at Stanford University as she details to senior editor Derek Bagley in "Movers and Shakers" on page 56. (Find out what common lab supply she realized she overstocked once her team had to move them!)

A new event debuted during the all-virtual **ENDO 2021** that showcased the next generation of endocrine scientists and practitioners. The Rising Stars Power Talks was a live poster presentation much like the highly popular Knock-Out Rounds from **ENDOs** past, but virtual. Fifteen trainees each had a single slide presentation and were given three minutes to present their research and discuss its significance. All presentations were then followed by a short Q&A session.

I managed to catch up with the five winners — two "people's choice" winners chosen by the attendees and three winners

picked by the judges from the Endocrine Society's Trainee and Career Development Core Committee, who hosted the event — and ask them about their research, why it's important, and what they have planned for the future. Check out these remarkable early-career researchers in "Star Power" on page 48.

And like **ENDO 2021**, this issue is packed with much, much more including interviews with 2021 Endocrine Society Laureates James R. Gavin, III, MD, PhD, who discusses the importance of mentorship and the legacy it creates (p. 62), and Frances J. Hayes, MBBCh, who talks about the challenges she faced treating patients in 2020 (p. 70).

As usual, if you have any suggestions for outstanding Endocrine Society members whom you feel deserve a spot on the pages of *Endocrine News*, let me know at: **mnewman@ endocrine.org.**

- Mark A. Newman, Editor, Endocrine News



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Endocrine Society Names Kate Fryer as Chief Executive Officer



66 This role will pair my passion for advancing and funding foundational research and the basic-totranslational-to-clinical continuum that the Endocrine Society so holistically embodies.

Photo: Joe Shymanski/Shymanski Photography

fter a year-long search, Kate Fryer has been named chief executive officer of the Endocrine Society.

Fryer has served in numerous scientific association leadership positions with deep experience in strategic planning, membership, scientific publishing, communications, society operations, as well as meetings and conferences.

"The year of COVID-19 was difficult for everyone, but our Society successfully pivoted when necessary, identified new solutions, and emerged stronger than it's ever been," says Endocrine Society pastpresident Gary D. Hammer, MD, PhD, of the University of Michigan in Ann Arbor. "Kate brings the perfect blend of leadership and association experience to not only build upon our momentum, but to propel us even further forward."

Fryer comes to the Endocrine Society from the American Chemical Society (ACS) where she served as executive vice president, Membership & Society Services, where her focus was on modernizing their membership model and expanding and virtualizing their meetings and exposition portfolio. Prior to her position at ACS, Fryer was the deputy executive director at the Society for Neuroscience where she led the launch of their open-access journal as well as their online learning platform.

"It is an honor to serve as CEO for an organization so well-regarded for its long history of dedicated members and talented staff," Fryer says. "This role will pair my passion for advancing and funding foundational research and the basic-to-translational-to-clinical continuum that the Endocrine Society so holistically embodies."

"As Kate comes on board, it's important to recognize the contributions of the interim CEO, Dr. Robert Lash," says Endocrine Society president Carol Wysham, MD, clinical professor of medicine at the University of Washington. "Facing one of our most difficult years, Rob and the staff displayed remarkable nimbleness so that the pandemic would not hinder our mission to unite, lead, and grow the endocrine community to accelerate scientific breakthroughs and improve health worldwide."

Fryer officially began her role as chief executive officer on April 6.

Endocrine Society Announces 2021 Early Investigators Award Winners he Endocrine Society has selected five recipients for its 2021 Early Investigators Awards.

The Early Investigators Awards were established to assist in the development of earlycareer investigators and to recognize their accomplishments in endocrine-related research.

The Endocrine Society's 2021 Early Investigators Award winners are:

- ▶ Himanshu Arora, PhD, of the University of Miami in Coral Gables, Fla. Arora's lab focuses on exploring the therapeutic efficacy of immunotherapy against different stages of prostate cancer and using machine learning tools to study the progression of the cancer.
- ► Ana Aulinas, MD, PhD, of the Hospital de Sant Pau in Barcelona, Spain. Her research focuses on neuroendocrinology, hypothalamic, and pituitary diseases. Aulinas seeks to improve outcomes in patients with pituitary diseases through her research, clinical work, and teaching.
- Athanasios Bikas, MD, PhD, of Brigham and Women's Hospital in Boston, Mass. Bikas pursued a post-graduate research fellowship in thyroid cancer. He has published several papers in high-impact journals like *The Journal of Clinical Endocrinology & Metabolism* and *Thyroid*.
- ▶ Juan Brito, MD, of the Mayo Clinic in Rochester, Minn. Brito serves as a guideline methodologist for the Endocrine Society's Clinical Practice Guidelines. He has authored more than 140 peer-reviewed manuscripts. His research focuses on thyroid cancer and its overtreatment and the use of levothyroxine in the U.S.
- Manuel D. Gahete, PhD, of the University of Cordoba in Andalusia, Spain. Gahete's research focuses on identifying novel molecules that could be used as diagnostic, prognostic, and/or therapeutic markers for endocrine cancers and diseases such as obesity and diabetes.



Recipients received a monetary award, one-year complimentary membership to the Society, one-year complimentary access to the Society's online journals, and public recognition of research accomplishments in various Society platforms.

Additional information on this award and the recipients is located on the Society's website at: https://www.endocrine.org/awards/early-investigators-awards.

The new application cycle opens in September 2021.

Endocrine Society Issues Scientific Statement on Sex Differences in Research Biological differences between females and males need to be considered in scientific studies.

B iological differences between females and males affect virtually every aspect of medicine and biomedical research. In a new Scientific Statement, the Endocrine Society called for sex differences to be studied thoroughly to improve public health.

"When we understand the ways sex differences operate at baseline in health, which can either worsen the course of a disease to amplify differences in health outcomes, or protect against it, we can more effectively prevent and treat medical conditions," says Aditi Bhargava, PhD, of the University of California, San Francisco in San Francisco, Calif., and the chair of the writing group that authored the Society's Scientific Statement.

For instance, SARS CoV-2 infection, the cause of the COVID-19 pandemic, disproportionately affects men. A U.S. Centers for Disease Control and Prevention report found that the overall case-fatality ratio was about 2.4 times higher in men than women. Failing to consider sex differences can lead to the failure of promising drug candidates. Drugs are tested in cell lines or animals before drug trials are conducted in humans, and most of these foundational studies rely predominantly on male animals or cell lines. Many published studies that use animal models either do not report the breakdown of animals by sex or do not aggregate results by the sex. Clinical studies similarly fail to consider sex as a variable and instead often report it as a confounding factor.

"Without exploring sex differences, some drug candidates that could be beneficial to women never have the chance to make it to market," Bhargava says. "The process of developing drugs using only males of a species in pre-clinical studies likely contributes to the higher rates of adverse drug reactions in women compared to men, failure to see efficacy in clinical trials, and translation to therapeutics."

The statement explores three areas of biological differences between females and males. Imaging has found anatomical and volume differences in the brains of women and men, but these differences do not reveal any functional differences between the sexes. Heart and kidney diseases present differently in women and men. Although twice as many women as men report stress-related diseases, few studies are designed to explore mechanisms that highlight both similarities and differences between the sexes.

Biological sex is separate from gender identity, which may or may not align with an individual's biological sex. Transgender or gender diverse individuals should be screened for sex-specific medical conditions such as prostate cancer and cervical cancer based on body parts and tissues that are present, according to the Society's *Clinical Practice Guideline on Endocrine Treatment* of Gender-Dysphoric/Gender-Incongruent Persons.

Other authors of the statement are: Arthur P. Arnold, Arpana Gupta and Emeran A. Mayer of the University of California, Los Angeles in Los Angeles, Calif.; Debra A. Bangasser of Temple University in Philadelphia, Pa.; Kate M. Denton and Lucinda M. Hilliard Krause of Monash University in Clayton, Victoria, Australia; Margaret McCarthy of the University of Maryland School of Medicine in Baltimore, Md.; Walter L. Miller of UCSF in San Francisco, Calif.; Armin Raznahan of the National Institutes of Mental Health in Bethesda, Md.; and Ragini Verma of the University of Pennsylvania, Philadelphia, Pa.

Endocrine Society Joins ASBMR, Other Bone Health Organizations to Provide Guidance on COVID-19 Vaccine and Osteoporosis



s COVID-19 vaccines continue to be distributed, the world's leading bone health research, clinical, and patient advocacy organizations ASBMR, Endocrine Society, AACE, ECTS, NOF, and IOF provide recommendations to assist clinicians in managing osteoporosis treatments for their patients who plan to get vaccinated.

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General bone health measures (i.e., calcium and vitamin D supplementation, weight-bearing exercises, and maintenance of a balanced diet) should not be interrupted at the time of vaccination or thereafter.

??

Experts agree that there is no evidence that any osteoporosis therapy either increases the risk or severity of COVID-19 infection, alters the disease course, or interferes with the efficacy or side effect profile of COVID-19 vaccination.

However, considering limited COVID-19 vaccine availability, vaccinations may need to be prioritized and alterations made in standard osteoporosis regimens. Patients are urged to consult with their healthcare providers before making any alterations in the osteoporosis regimens. General bone health measures (i.e., calcium and vitamin D supplementation, weight-bearing

exercises, and maintenance of a balanced diet) should not be interrupted at the time of vaccination or thereafter.

"The rapid rollout of the COVID-19 vaccine has raised questions about integrating vaccine administration with ongoing osteoporosis treatment," says ASBMR president Suzanne Jan De Beur, MD. "These recommendations and the supporting

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Considering limited COVID-19 vaccine availability, vaccinations may need to be prioritized and alterations made in standard osteoporosis regimens.

"

evidence were curated by the world's top bone health experts to make it easier for healthcare professionals and their patients to understand the best approach for adjusting osteoporosis regimens while getting vaccinated."

Medication-Specific Recommendations for the Management of Patients with Osteoporosis in Relation to COVID-19 Vaccination

Oral bisphosphonates [alendronate (Fosamax[®]), risedronate (Actonel[®]), and ibandronate (Boniva[®])]

Oral bisphosphonates should be continued in patients receiving COVID-19 vaccination.

Intravenous (IV) bisphosphonates [zoledronic acid (Reclast^{*}) and ibandronate (Boniva^{*})]

A one-week (minimum of four days) interval is recommended between IV bisphosphonate infusion and COVID-19 vaccination to allow for distinguishing between any autoimmune or inflammatory reactions resulting from either IV bisphosphonate administration or COVID-19 vaccination.

Denosumab (Prolia®)

- An interval of four to seven days between treatment with denosumab and COVID-19 vaccination is recommended to allow for the potential occurrence of injection site reactions with either treatment.
- Alternatively, denosumab treatment could be administered in the contralateral arm or alternative site (abdomen or upper thigh) if it is necessary to administer concomitantly with COVID-19 vaccine.
- While denosumab timing may be slightly adjusted to account for vaccine timing, denosumab injections should not be delayed more than seven months after the previous denosumab dose.

Teriparatide (Forteo[®]) or abaloparatide (Tymlos[®])

- Both teriparatide and abaloparatide should be continued in patients receiving COVID-19 vaccination.
- Wait four to seven days between injections, or consideration for injection in the abdomen (except for a two-inch area around the navel) or thigh if administered concomitantly.

Raloxifene

Raloxifene should be continued in patients receiving COVID-19 vaccination

Osteoporosis per se does not appear to increase the risk for infection with or complications from COVID-19. Therefore, it is not necessary to prioritize patients with osteoporosis for COVID-19 vaccination only on the basis of that condition. However, any decision to prioritize patients with osteoporosis for vaccination should be based on indications specific to each country.

The complete Guidance on COVID-19 Vaccination and Osteoporosis Management is available at: https://www.asbmr. org/about/statement-detail/joint-guidance-on-covid-19-vaccine-osteoporosis.

Matthias Tschöp Honored by the German Society of Endocrinology

Endocrine Society and European Society of Endocrinology Launch New Award

The European Society of Endocrinology and the Endocrine Society have created a new joint initiative, The Transatlantic Alliance Award.

The Transatlantic Alliance Award will be presented to a recognized international leader who has made significant advancements in endocrinology research through work and collaboration in both the U.S. and Europe and is open to researchers across the basic and clinical spectrum.

The Award consists of a medal and a financial reward which will either be presented at the European Congress of Endocrinology (ECE) or at the Society's **ENDO**, where the awardee will present one of the main lectures.

For details on how to nominate, or selfnominate, go to: www.endocrine.org/awards/ transatlantic-alliance-award.

Closing date is 28 May 2021.



ndocrine Society member Matthias Tschöp, MD, has been awarded the 2021 Berthold Medal, the highest recognition by the German Society of Endocrinology.

Tschöp, CEO of Helmholtz Zentrum München and Alexander-von-Humboldt Professor at Technical University of Munich, received the Berthold Medal at the 64th annual meeting of the DGE, the German Congress of Endocrinology, in recognition of his scientific achievements.

Recognized by the Endocrine Society in 2017 with the Laureate Award for Outstanding Innovation, Tschöp has shaped the field of metabolic diseases, diabetes, and obesity over the past decades on a global scale. His research has generated several novel preventive and therapeutic approaches for diabetes and obesity.

In 2000, he discovered that the human body relies on a hunger hormone called ghrelin that drives appetite, promotes fat storage, and tells the brain when additional calories are needed. Building on this discovery, he collaborated with the chemist Richard DiMarchi to develop a series of novel drug candidates that combine the action profiles of multiple hormones into single molecules. These so-called poly-agonists have proven successful as candidates for the treatment of obesity and type 2 diabetes and are now already progressing through phase 2 and 3 clinical trials.

As CEO of Helmholtz Zentrum München, Tschöp's strategic vision is centered on transformative acceleration of the path from basic research breakthroughs to delivering medical solutions for society.

Awarded annually, the Berthold Medal is named after German scientist Arnold Adolf Berthold, considered the founding father of hormone research, as his experiments were the first to prove the existence of hormones.



Hydelene Dominguez Receives C. Wayne Bardin International Travel Award

ydelene Dominguez, MD, is the first winner of the C. Wayne Bardin International Travel Award. The Endocrine Society established this award to pay tribute to Bardin, who passed away in 2019 and made remarkable research contributions to both reproductive physiology and contraception throughout his long career.

The award recognizes Bardin's passion for recognizing and nurturing young researchers by covering the costs to send a young, outstanding endocrinologist to **ENDO**, the annual meeting of the Endocrine Society. Candidates for the award are chosen based on the quality of their **ENDO** abstract and the overall quality of their science.

Hydelene Dominguez, MD, chief fellow at the University of the Philippines – Philippine General Hospital, won this year's award for her excellent **ENDO 2021** research on pheochromocytoma, a rare neuroendocrine tumor. Dominguez is currently conducting research on diabetes and thyroid cancer to improve patient outcomes in underdeveloped areas in the Philippines. She is working to expand her research to her other areas of interest, bone and adrenal health.

Dominquez will receive complimentary registration and a travel award to attend the next in-person meeting of the Endocrine Society. The travel award will cover up to \$3,000 in travel, hotel, and per-diem costs.

We anticipate the new application cycle will open in October 2022. To be considered for the award, applicants must be an endocrine fellow currently in training or a junior faculty member for fewer than five years and submit an abstract to ENDO 2022.

More information on the award and application requirements can be found at: www.endocrine.org/bardinaward. Contact awards@endocrine.org with any questions.

To contribute to this award, donate to the "In Memory of C. Wayne Bardin Fund" at: **www.endocrine.org/donation**.

TRENDS & INSIGHTS



Proof-of-Concept Study Shows CGM Benefit in Patients with COVID-19

proof-of-concept study recently published in *Diabetes Care* shows how inpatient diabetes technology is advancing and can provide meaningful improvements in care today and in a postpandemic world.

The research team, led by Francisco J. Pasquel, MD, MPH, assistant professor of medicine in the Division of Endocrinology at Emory University in Atlanta, write that point-of-care (POC) testing during a pandemic like COVID-19 could lead to the use of subcutaneous insulin regimens where continuous insulin infusion (CII) would normally be indicated, and that the severity of COVID-19 in patients in the intensive care unit make the safety and efficacy of subcutaneous insulin regimens difficult to maintain. "Therefore," the authors write, "it is paramount to develop protocols that reduce PPE waste, nursing workload, and infectious exposures while maintaining glycemic control and reducing the risk of iatrogenic hypoglycemia."

The researchers, based on preliminary data from using continuous glucose monitoring (CGM) in the cardiac ICU, inpatient CGM use in non-ICU units, and inpatient clinical practice, designed a hybrid CGM/POC testing protocol utilizing Dexcom's G6 CGM and Glytec's electronic Glvcemic Management System' (eGMS) Glucommander module integrated with their EPIC EHR instance to treat critically ill patients in the ICU with COVID-19 requiring insulin infusion at Grady Memorial Hospital in Atlanta, Ga. "We report here our proof-of-concept with our first nine patients," the authors write.

All nine patients required mechanical ventilation and corticosteroids, due to the severity of active

or suspected COVID-19 — seven of the nine patients had confirmed PCR testing. The authors write that the mean age was 65.9 ± 15.2 years, 67% were men, and 89% were African American. All patients had type 2 diabetes and blood glucose values 0.180 mg/dL before starting CII. The researchers found that during the protocol, 75.7% of sensor values were within 20% of the reference POC glucose with an associated average reduction in POC of 63%. Mean time in range (70–180 mg/dL) was $71.4 \pm 13.9\%$. Sensor accuracy was impacted by mechanical interferences in four patients.

The results suggest that CGM use is possible in the ICU and can reduce POC glucose testing without compromising on glycemic control. It also highlights beneficial outcomes for future implementations, including achieving and maintaining adequate glycemic control quickly, minimizing patient discomfort (fingersticks), and remotely monitoring real-time glucose levels.

"A protocol involving multiple stakeholders to implement a hybrid approach (real-time CGM with POC validation every 6h) with hourly EHR documentation guiding computerized CII is feasible in the ICU and can reduce POC glucose testing without compromising glycemic control," the authors conclude. "As the healthcare community works toward a new normal, the use of diabetes technology can help alleviate staff concerns related to work burden, exposure, and PPE consumption, while improving glycemic control during this health care crisis." BY DEREK BAGLEY Senior Editor



As the healthcare community works toward a new normal. the use of diabetes technology can help alleviate staff concerns related to work burden. exposure, and **PPE** consumption. while improving glycemic control during this health care crisis.







In late puberty, girls with greater body fat also showed delayed breast maturation, as determined by breast ultrasound, and earlier menarche. There were no differences in maturation of the ovaries or uterus as a function of body fat.

Obesity May Affect Puberty Timing and Hormones in Girls

Puberty looks different, in terms of both reproductive hormones and breast maturation, in girls with excess total body fat, according to a new study published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Natalie D. Shaw, MD, of the National Institute of Environmental Health Sciences (NIEHS), part of the National Institutes of Health (NIH) in Durham, N.C., point out that while existing data suggest that obesity affects the female reproductive axis in a manner that is distinct from other environmental factors contributing to earlier puberty in modern normal weight girls, studies of gonadotropin and estradiol (E2) levels in early pubertal overweight/ obese versus normal weight girls have produced conflicting results with some suggesting earlier activation of the central components of the axis in overweight/obese girls and others being more consistent with a peripheral source of estrogen (e.g., adipose tissue) driving puberty overweight/obese girls. in "Importantly, there has been no longitudinal assessment of contemporaneous clinical and biochemical



indices (gonadotropins and sex steroids) during pubertal development in overweight/obese vs. normal weight girls," the authors write.

The researchers studied 90 girls between 8 and 15 years old (36 with obesity, 54 with normal weight) over the course of four years. They calculated total body fat using dual-energy x-ray absorptiometry, tracked puberty using Tanner staging, conducted breast and pelvic ultrasounds, measured hormones levels in blood samples, and recorded each girl's age at her first period. The researchers found that girls with higher total body fat had differences in reproductive hormone levels, developed mature breasts more slowly, and got their first period earlier than girls with lower total body fat.

"We found that in mid- to late puberty, girls with greater total body fat demonstrated higher levels of some reproductive hormones including follicle-stimulating hormone (FSH), inhibin B, and male-like hormones such as testosterone. In some girls with higher total body fat, higher testosterone levels were associated with irregular menstrual cycles, acne and excess body hair," Shaw says. "In late puberty, girls with greater body fat also showed delayed breast maturation, as determined by breast ultrasound, and earlier menarche. There were no differences in maturation of the ovaries or uterus as a function of body fat."

Trial Compares Two Gestational Diabetes Screening Methods

here were no significant differences in health outcomes for pregnant women who were diagnosed with gestational diabetes or their babies using two different clinically recommended screening methods, according to results from a large-scale clinical trial conducted by Kaiser Permanente researchers and published in the *New England Journal of Medicine*.

Although there is evidence that treating pregnant women for gestational diabetes leads to improved health outcomes for mothers and their infants, there is no scientific consensus on how best to screen for gestational diabetes. Two different approaches are recommended and used in clinical practice in the U.S.: a one-step protocol that requires women to fast prior to the test (currently preferred by the American Diabetes Association) and a two-step approach that does not require fasting for the initial test (currently recommended by the American College of Obstetricians and Gynecologists). This study was the first headto-head trial comparing maternal and perinatal outcomes of the two methods.

"We know that screening and diagnosing women with gestational diabetes improves outcomes for mothers and babies," says lead author Teresa Hillier, MD, MS, investigator at the Kaiser Permanente Northwest Center for Health Research and Kaiser Permanente Hawaii Center for Integrated Health Care Research. "Our trial was designed to determine whether there were any differences in outcomes between the two approaches. The one-step method diagnoses twice as many women, typically leading to treatment of women with milder gestational diabetes, but we found no evidence that this higher diagnosis rate led to differences in outcomes."

The study involved nearly 24,000 pregnant women from Kaiser Permanente in Hawaii and from the Northwest in Portland, Ore., all of whom were randomly assigned to the one-step or the two-step testing protocol to screen for gestational diabetes as part of their clinical care. This head-to-head study design compared outcomes across the entire population in a "real world" clinical setting, allowing generalizability to everyday clinical practice. The women were enrolled between May 28, 2014, and December 31, 2017, and data on outcomes were collected between 2014 through 2018. The outcomes evaluated included rates of gestational diabetes diagnosis, large-for-gestational-age infants, gestational hypertension or preeclampsia, primary cesarean section, and a composite measure of several adverse perinatal outcomes that included stillbirth and neonatal death.

The study found:

- Among the 94% of women who completed screening, a larger share (92%) of women randomized into the two-step protocol were adherent than those randomized into the one-step approach (66%).
- There was a significant difference in diagnosis of gestational diabetes; 16.5% of women were diagnosed in the one-step approach compared to 8.5% in the two-step protocol.
- There were no significant differences between the two gestational diabetes screening approaches in the primary maternal or perinatal health outcome.
- Rates were also similar between groups across a range of secondary and safety outcomes, including preterm birth and admission to neonatal intensive care.

"What this large-scale clinical trial illustrates is that the two-step screening method appears to be preferred by patients and providers, and had a lower screen-positive rate, and led to outcomes that were not different from the 1-step method," says Keith Ogasawara, MD, chief perinatologist, Department of Obstetrics and Gynecology with Kaiser Permanente in Hawaii.



What this large-scale clinical trial illustrates is that the two-step screening method appears to be preferred by patients and providers, and had a lower screen-positive rate, and led to outcomes that were not different from the 1-step method.

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ENDOCRINE ITINERARY

ACOG Virtual Annual Clinical & Scientific Meeting April 30 – May 2, 2021

ACOG's 2021 Annual Clinical and Scientific Meeting (ACSM) will take place virtually, April 30 – May 2, to ensure the safety of meeting attendees, our members, and their patients. Cutting-edge research, the latest clinical practice strategies, and extensive engagement opportunities will continue to make this event the premier educational conference for obstetrics and gynecology. This gathering of the leading women's healthcare experts delivers skill development, best practices in patient care, and the most up-to-date clinical content. The 2021 meeting will allow participants to experience three days of engaging and interactive educational content, centered around the 2021

initiative, "Personalizing Care: A Way to the Future." https://events.jspargo.com/acog21

Steroid Hormones and Receptors in Health and Disease Conference

May 25 – 27, 2021

This FASEB Science Research Conference (SRC) is dedicated to exploring emergent knowledge on rapid and genomic actions of nuclear receptors in health and disease. This year, the conference is jointly organized by FASEB and the International Committee on Rapid Responses to Steroid Hormones (RRSH), which held its first bi-annual meeting in 1998 and has convened in Europe, North America, and Asia. This is the first conference organized by FASEB and RRSH and will be held virtually.

https://src.faseb.org/shr

American Diabetes Association's 81st Scientific Sessions

Virtual Event (Dates TBD) June 2021

The Scientific Sessions offers researchers and healthcare professionals an opportunity to share ideas and learn about the significant advances in diabetes research, treatment, and care. Over the course of five days, attendees will receive exclusive access to more than 2,800 original research presentations, take part in provocative and engaging exchanges with diabetes experts, and expand professional networks with over 12,000 attendees from around the world.

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



Virtual 2021 Clinical EndocrinologyUpdate/Endocrine Board ReviewCEU 2021Sept. 10 – 12, 2021Sept. 16 – 18, 2021

Every year, the Endocrine Society holds Clinical Endocrinology Update (CEU), which brings together hundreds of endocrine clinicians for a unique learning experience.

This year, due to concerns regarding the safety of both attendees and faculty stemming from the COVID-19 outbreak, the Endocrine Society is conducting these sessions in a virtual learning environment.

CEU 2021 offers an opportunity to stay up to date on the newest breakthroughs in clinical endocrinology. Expert faculty deliver a comprehensive three-day program covering a range of clinical practice areas using interactive, case-based learning.

Endocrine Board Review (EBR) is an essential course for endocrinologists preparing to take the boards or practicing physicians seeking an intensive knowledge assessment. The virtual program is designed as a mock exam, with rapid-fire, case-based questions emulating the format and subject matter of the ABIM's Endocrinology, Diabetes, and Metabolism Certification Examination. Attendees will have early access to topical on-demand presentations with detailed answer rationale (available in late August).

www.endocrine.org/ceu2021 • www.endocrine.org/ebr2021

ENDOCRINE ITINERARY

ASMBS 2021 Virtual Annual Meeting

June 10 – 12, 2021

The American Society for Metabolic and Bariatric Surgery's 2021 Annual Meeting is the largest gathering of surgeons and integrated health professionals practicing in the field of metabolic and bariatric surgery. Attendees can look forward to learning about the latest advances in the surgical treatment for obesity, networking with world-class faculty and industry experts, and much more. The future looks bright for the ASMBS Annual Meeting and for increasing the number of patients who could benefit from this life-saving and transformational surgery.

https://asmbs.org/professional-education/ annualmeeting

22nd Annual Harvard Nutrition Obesity Symposium: Global Food Systems and Sustainable Nutrition in the 21st Century June 15, 2021

8:00 a.m. - 5:30 p.m. (EST)

The Nutrition and Obesity Research Center at Harvard will focus its 2021 virtual symposium on Global Food Systems and Sustainable Nutrition in the 21st Century that will feature an outstanding lineup of speakers who are experts in the fields of public health, global food systems, nutritional inequities, and sustainable nutrition. Registration is free of charge, but space is limited. Join thought leaders in the field for this signature event. www.norch.org

Heart in Diabetes

New York, New York September 10 – 12, 2021

This CME conference brings clinical leaders in diabetes and cardiovascular disease and practicing clinicians together to improve the care of patients at a high risk of cardiovascular, metabolic, and kidney diseases. This program is designed to evaluate the clinical science aspects of diabetes, obesity, and cardiovascular disease, focusing on the heart and kidney in diabetes. The goal is to develop appropriate, comprehensive clinical management plans aligning endocrinologists, cardiologists, nephrologists, and all other interested clinicians in their understandings of the impact of diabetes and CVD outcome trials on the clinical management of these very high-risk patients.

www.heartindiabetes.com

INTERNATIONAL ITINERARY

eECE 2021

May 22 – 26, 2021

Join colleagues from all over the world for the 23rd European Congress of Endocrinology taking place online on our interactive virtual platform, ESE On Demand. Following feedback from our highly rated online Congress last year, we are introducing enhanced networking features; allowing attendees to connect and collaborate with their fellow endocrine professionals from across the globe. This year, e-ECE 2021's program will include: plenary and award lectures bringing you excellence in basic and clinical research; 30 symposia sessions from over 90 international speakers; joint symposia with partner societies; Meet the Expert sessions; debate sessions; and more. www.ese-hormones.org/

Plenareno Diabetes, Obesity, and Cholesterol Metabolism Conference 2021 (PDOC 2021) May 24 – 25, 2021

Belgrade, Serbia

PDOC 2021 will provide the platform for diabetologists, endocrinologists, nutritionists, and other related professionals to present their latest research. It aims for invaluable scientific discussions and contributes to the future innovations and recent trends in diabetes, obesity, and endocrinology and also will bring together an interdisciplinary and global team of research professionals. Keynote and plenary sessions followed by young researchers and poster sessions will allow for widespread participation of attendees at all career stages. ttps://metabolicdiseases.plenareno.com/

EndoBridge 2021

Antalya, Turkey

October 21 – 24, 2021

EndoBridge® is a unique initiative with the vision of bridging the world of endocrinology. EndoBridge® is co-hosted by the Endocrine Society and the European Society of Endocrinology in collaboration with the Society of Endocrinology and Metabolism of Turkey. The meetings are held in English with simultaneous translation into Russian, Arabic, and Turkish. Accredited by the European Accreditation Council for Continuing Medical Education (EACCME), this three-day scientific program includes state-of-the-art lectures delivered by world-renowned faculty and interactive sessions covering all aspects of endocrinology. EndoBridge® provides a great opportunity for physicians and scientists from around the world to interact with each other, share their experience and perspectives, and participate in discussions with global leaders of endocrinology. www.endobridge.org

The Endocrine Society Laureate Award

or more than 70 years, the Endocrine Society has recognized the achievements of endocrinologists worldwide. The Laureate Awards recognize endocrinologists for seminal research, meritorious service, leadership and mentorship, innovation, international contributions, education, translation of science to practice, and lifetime achievement.

Established in 1944, the Society's Laureate Awards recognize the highest achievements in the endocrinology field, including groundbreaking research and innovations in clinical care.

The distinguished recipients on the following pages join a prestigious list of past award recipients, all of whom have advanced scientific breakthroughs, medical practice, and human health around the world. Award categories honor the achievements of endocrinologists at all stages of their careers, recognizing those at the pinnacle of the field as well as young endocrinologists who are making a mark.

The dedication, commitment, and achievements of current and past award recipients have earned each a place in Endocrine Society history as well as the history of the practice and science of endocrinology.

LAUREATE AWARDS

Fred Conrad Koch Lifetime Achievement Award

Phillip Gorden, MD

or the past 50 years, Phil Gorden, MD, has improved the lives of people around the world through his scientific contributions leading to enhanced diagnosis, characterization, and treatment of diabetes and other endocrine conditions. As a physician-scientist, he has always been systematically patient-focused, which created the framework for his lifelong commitment to biomedical research and the translation of research to improved treatments of complex diseases.

Among his many accomplishments, Dr. Gorden advanced the development and refinement of insulin and growth hormone measurements; clarified the role of the proinsulin molecule; contributed to work leading to the discovery of the insulin receptor; and characterized disorders caused by genetic mutations of, and autoantibodies against, the insulin receptor. His work in patients with severe insulin resistance led to breakthrough immunotherapy in patients with insulin-receptor autoantibodies and to leptin replacement in patients with lipodystrophy. This culminated with the approval by the FDA of leptin replacement in generalized lipodystrophy, an achievement rarely attained by independent academic researchers. His work in patients with insulinoma has enhanced our ability to identify and successfully localize and treat this rare neuroendocrine tumor. In his role as National Institute of Diabetes and Digestive and Kidney Diseases director from 1986 to 1999, he provided support for and leadership of numerous initiatives that culminated with large paradigm-shifting clinical trials that continue to shape current practice, including the Diabetes Control and Complications Trial, Epidemiology of Diabetes Interventions and Complications trial, LookAhead, and the Diabetes Prevention Program, as well as the launching of the National Diabetes Education Program.

Anyone who knows Phil recognizes him as a true gentleman who has a friendly southern style thanks to his start in Baldwyn, Mississippi. He has taught us that "Medicine without science is useless, yet science has got to be driven by humanity or it won't be translatable." Clearly, Phil Gorden continues to model this wisdom as he teaches the next generation of endocrinologists.

This is a difficult time

for anyone starting out in research. Nevertheless, the importance and rewards of research remain as high as ever. One must remember that starting in research has always had its ups and downs and must never let some disappointing results of a few early experiments discourage us from keeping our eyes on the big picture.

Q&A WITH THE WINNER

As a Laureate Award recipient,

do you have any advice for those

just beginning their careers?

The mechanism for supporting the scientific process will always adapt to a new set of circumstances.

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CITATOR

SAUL MALOZOWSKI, MD, PHD, MBA, PROGRAM DIRECTOR, DIVISION OF DIABETES, ENDOCRINOLOGY, AND METABOLIC DISEASES, NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES, BETHESDA, MD.

2021 WINNERS

Gerald D. Aurbach Award for Outstanding Translational Research

Teresa K. Woodruff, PhD

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

The Endocrine Society provided the intellectual connections that were enabling to my career success and imprinted on me the value of and provided pathways to move between the fundamental sciences and clinical need. eresa K. Woodruff, PhD, the 2021 recipient of the Gerald D. Aurbach Award for Outstanding Translational Research, was recently appointed provost at Michigan State University in East Lansing, Mich., following a 25-year career at Northwestern University in Chicago, Ill. A past-president of the Endocrine Society and the former editor-in-chief of *Endocrinology*, Dr. Woodruff has made seminal discoveries about gonadal structure, function, and hormones, as well as female fertility and its regulation.

Her research seeks to understand the development of the ovarian follicle, identify markers and determinants of oocyte quality, and discover how this basic biology can be applied to improve patient care. Her impactful basic science studies and their societal implications led her to collaborate with physicians, scientists, educators, and other healthcare providers to provide fertility preservation options to young men and women with fertility-threatening conditions, especially those with treatable cancers.

She founded and directs a worldwide consortium dedicated to a field she largely defined — oncofertility — a discipline at the intersection of oncology and reproductive medicine that translates basic discoveries to expand fertility options for young cancer survivors. Woodruff is also an extraordinarily strong advocate for women in science, an outstanding mentor, and a national leader in driving federal policy changes that have resulted in the inclusion of sex as a biological variable in research investigations.

For her outstanding research in reproductive endocrinology, and her partnerships with interdisciplinary teams to translate that research to improved patient care, the Endocrine Society is pleased to present Teresa Woodruff with the 2021 Gerald D. Aurbach Award.

CITATOR

KELLY E. MAYO, PHD, DEPARTMENT OF MOLECULAR BIOSCIENCES, NORTHWESTERN UNIVERSITY, EVANSTON, ILL.



LAUREATE AWARDS

International Excellence in Endocrinology Award

Ambrish Mithal, MD, DM

mbrish Mithal, MD, DM, is an Indian endocrinologist, who serves as the head of the Endocrinology and Diabetes Division of Medanta, the Medicity, in Delhi. Over the past 25 years, Dr. Mithal has made pioneering contributions to the growth of endocrinology, establishing and running endocrine teaching programs, developing models for high-quality endocrine services, and conducting and guiding research on topics of direct relevance to India.

He carried out seminal research on fluoride toxicity, a condition affecting over 60 million people, and investigated iodine deficiency with studies that led to the universal salt iodation program. He founded India's first bone density measurement and osteoporosis service and established osteoporosis as a serious national health problem. He described primary hyperparathyroidism as a symptomatic disease, identified hypovitaminosis D as a major public health problem affecting more than 80% of urban Indians, and played a key advisory role in initiating fortification of edible oil and milk with vitamin D.

Dr. Mithal's capacity-building initiatives in India are tremendous. They were implemented despite numerous major challenges in a very populous country with limited resources and wide knowledge gaps. In an understated and global approach, Dr. Mithal engages all concerned stakeholders, academics, physicians in practice, public health officials, trainees, patients, and the public. His achievements are coupled with a rich mentoring career of more than 40 diabetes endocrine fellows who went on to help establish endocrinology as a specialty of academic excellence throughout India.

His efforts are recognized by numerous prestigious national and international awards, which include the highest civilian honors — the Padma Bhushan and the BC Roy Award, from the president of India, and the International Osteoporosis Foundation's President's Award. Dr. Mithal's determination and enthusiasm to improve the practice of endocrinology — both at the clinical and public health level — are commendable. He is most deserving of the International Excellence in Endocrinology Award.

Q&A WITH THE WINNER

As a Laureate Award recipient, do you have any advice for those just beginning their careers?

Clinicians often do not have the luxury of time or funding to delve into basic research. For those clinicians in the early stage of their careers, pursuing the clinicianresearcher track can be very rewarding. I feel that the key to success is in aligning one's research to community and societal needs. To contribute, even in a small way, in tackling a public health problem that affects millions of people is immensely gratifying.

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CITATOR

GHADA EL-HAJJ FULEIHAN, MD, MPH, PROFESSOR OF MEDICINE, AMERICAN UNIVERSITY OF BEIRUT MEDICAL CENTER, BEIRUT, LEBANON

2021 WINNERS

Outstanding Clinical Investigator Award



Richard J. Auchus, MD, PhD

Q&A WITH THE WINNER

As a Laureate Award recipient, do you have any advice for those just beginning their careers?

Be brutally honest with yourself and be your own harshest critic, but at the same time forgive yourself for your mistakes and learn from them. Stay true to your values and believe in yourself and the importance of your work. Explore other fields for clues that you might use to advance your own. Listen to your mentors and emulate the best qualities of each - you want to become a composite of them, not a copy. Most importantly, never, ever compromise your integrity.

ich Auchus, MD, PhD, is professor of medicine and pharmacology at the University of Michigan and the world's foremost authority on steroid-related diseases. His pioneering science has transformed fundamental principles of steroid biosynthesis, and his clinical investigation has repeatedly changed clinical practice — for androgen synthesis, endocrine hypertension, and hypercortisolism. He determined the genetic and biochemical basis of isolated 17,20-lyase deficiency and many cases of 17α -hydroxylase/17,20-lyase (CYP17A1) deficiency.

With Walter Miller, he showed that cytochrome b5 activates 17,20- lyase activity allosterically by increasing coupling of electron transfer to androgen synthesis. With Jean Wilson, he described the alternative, "backdoor" pathway to dihydrotestosterone (DHT), first in marsupials and then in human diseases — a revolution for androgen biology. With Nima Sharifi, he described another pathway of DHT synthesis in castration-resistant prostate cancer and showed that a common *HSD3B1* allele increases enzyme stability, accumulation, and androgen synthesis in these cancers.

He made crucial contributions to the clinical development of abiraterone acetate for prostate cancer, and he repurposed abiraterone for treating congenital adrenal hyperplasia (CAH). Using elegant mass spectrometry methods, his team showed that the predominant androgen and best predictor of long-term CAH disease control is 11-ketotestosterone, not conventional androgens. He showed that adrenalectomy affords significant clinical benefits for mild Cushing syndrome and established that rapid cortisol assays improve the success of adrenal vein sampling for primary aldosteronism. His team has brought several new drugs to clinical trials for Cushing syndrome and CAH, frequently as top U.S. recruiters.

Dr. Auchus' insight is widely sought and respected: He co-authored the Endocrine Society's position statement on testosterone assays, the definitive review on steroidogenesis and its disorders, and the Endocrine Society's revised clinical practice guidelines for CAH. He is a skilled teacher and mentor who is widely sought for his inspiring lectures, and he is an excellent choice for the 2021 Outstanding Clinical Investigator Award.

CITATOR

WALTER L. MILLER, MD, DISTINGUISHED PROFESSOR OF PEDIATRICS, EMERITUS UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, CALIF.



LAUREATE AWARDS

Vigersky Outstanding Clinical Practitioner Award

Frances J. Hayes, MBBCh, BAO, FRCPI

F rances J. Hayes' outstanding clinical skills were evident during medical school, when she was awarded the Gold Medal in Clinical Medicine at graduation. After clinical and research leadership roles at the University of Dublin and Massachusetts General Hospital (MGH), Dr. Hayes currently serves as the associate clinic chief of endocrinology at Mass General, one of the largest endocrine divisions in the country. She was the unanimous choice for this position because, although her subspecialty expertise is in reproductive endocrinology, her knowledge and clinical acumen are such that her opinion is sought by colleagues on complex cases across endocrinology.

She has brought best practices and efficiency to the division, always with an eye to the best patient experience. She has won the prestigious Patients' Choice Award and the Partners in Excellence Awards at the MGH, both highly competitive. In the past few years, she has been instrumental in establishing a number of specialty clinics at MGH dedicated to providing optimal multidisciplinary care for patients with Turner syndrome, Klinefelter syndrome, and the transgender population. These clinics not only provide state-of-the-art, multidisciplinary clinical care but, by involving colleagues in pediatric endocrinology, help to ensure a seamless transition for adolescents as they transfer care to adult providers.

Her national prominence in the care of male hypogonadism is recognized in her role as an author in the Endocrine Society's Guideline on Management of Male Hypogonadism. She treats each patient as a unique problem to be matched with the best and most recently available research and to do so with her highly humanistic care, such that all her patients love her. Thus, Frances Hayes is a remarkable role model who combines the best of rigorous and sensitive personal patient care with a clear sense of where clinical endocrinology is going and how to get there.

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

I have been a member of the Endocrine Society since I started my endocrine fellowship in Dublin, Ireland, in the early 1990s. The Society's annual meeting was always a highlight of my year, and it was through networking at one of these meetings that I got my first job as a research fellow in Boston. For me, the Endocrine Society is my academic home. Over the years, the Society's meetings and journals have been my go-to place to present research and to keep up to date with developments in the field. On a personal level, serving on Council and committees also afforded me the opportunity to develop longlasting friendships with a cadre of wonderful colleagues and Endocrine Society staff.

CITATOR

HENRY KRONENBERG, MD, CHIEF, ENDOCRINE UNIT, MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

2021 WINNERS

Outstanding Educator Award

Ann Danoff, MD



Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

The Endocrine Society has been my beloved professional home for 40 years. The Society provided an environment in which I could explore the depth and breadth of endocrinology, the place where I could meet and interact with dear friends and colleagues, and the place where I could grow as an individual and a professional. As I moved through different phases of my career, from trainee to junior faculty to elder, the Endocrine Society offered opportunities to contribute to and, in some cases, lead initiatives that added purpose and meaning to my life, and I hope contributed something to the experience of others."

nn Danoff, MD, is a first-rate educator and exemplifies all that is wonderful about teaching. She served as division director and program director (PD) of the Endocrine Fellowship at NYU for 13 years. With the benefit of a rich variety of patients and her ability to inspire colleagues to contribute, she developed a robust curriculum that utilized both formal and informal educational experiences, and incorporated multiple teaching modalities that included didactic sessions, casebased sessions, standardized patients, interdisciplinary conferences, hands-on sessions, standardized exams, and use of formative and summative evaluation tools. Her teaching has motivated countless students in science *and* personal interaction.

Dr. Danoff has contributed to many educational activities of the Endocrine Society. As chair of Trainee Day, she held plenary sessions on topics of interest to the clinicians, as well as the clinical and basic science investigators, to encourage (lifelong) dialogue among the various constituencies that comprise the Endocrine Society membership. As chair of the Endocrine Society's Board Review Course, she introduced a peer-review process for developing an enhanced course that became part of standard operations. As physician-in-practice chair of the Annual Meeting, she organized more than 100 sessions, introduced a peer-review process to the Meet the Professor book, and worked with the committee to incorporate the "patient story" into several sessions.

Other educational activities demonstrate her breadth and curriculum expertise. She served in the Association of Program Directors (PDs) in Endocrinology and Metabolism (APDEM), ultimately as president. She developed a novel medical school diabetes curriculum that wove through each year and included case-based lectures, small group seminars, podcasts, and videos (collaborating with visual artists). Part of her special skill is her ability to engage junior faculty and teach them about teaching. From this success, she developed a program to welcome students on the first day of medical school that went well beyond "endocrinology."

ITATOF

ANN E. TAYLOR, MD, MEMBER, NOMINATING COMMITTEE, WOMEN IN ENDOCRINOLOGY; VICE PRESIDENT, GLOBAL CLINICAL DEVELOPMENT, MEDIMMUNE, INC., GAITHERSBURG, MD.

LAUREATE AWARDS

Outstanding Innovation Award

Richard J.M. Ross, MBBS, MD, FRCP

R ichard J.M. Ross, MBBS, MD, FRCP, is an exceptional clinical scientist in the tradition of clinical scientists addressing the unmet needs of patients and translating these from bed to bench and back as innovative drugs.

His research on optimizing endocrine replacement therapy has focused on replacement of cortisol in patients with adrenal insufficiency (AI) and congenital adrenal hyperplasia (CAH). In 2000, he established the CAH Adult Study Executive (CaHASE), which, through high-impact publications in *The Journal of Clinical Endocrinology & Metabolism*, highlighted the poor health outcomes in adults with CAH due to inadequate glucocorticoid replacement. Based on this, and through extensive work examining the pharmacokinetics of hydrocortisone, Richard developed a novel formulation, Chronocort, and tested this through Phase 1 – 3 clinical trials demonstrating that Chronocort could replace the cortisol circadian rhythm and improve the disease control of CAH patients. To develop Chronocort, Richard founded a company, Diurnal Plc, floated it on the London stock market, and the company has submitted a market authorization for Chronocort in Europe and opened an Investigational New Drug Application in the U.S.

Between 2010 and 2017, Richard led the TAIN (Treatment of Adrenal Insufficiency in Neonates) consortium, which surveyed clinicians and patients to understand the unmet need in pediatric adrenal insufficiency. Based on this work, the consortium developed a new pediatric hydrocortisone formulation, Infacort. The formulation was tested in innovative clinical trials in neonates, infants, and children with adrenal insufficiency.

In 2018, Diurnal, Plc, for which Richard is now chief scientific officer, was granted a Pediatric Use Market Authorization in Europe (brand name Alkindi^{*}) and is now the subject of an New Drug Application with the U.S. Food and Drug Administration. Richard is one of only a few clinical scientists who has founded an endocrine pharmaceutical company that has not only developed new therapies but also commercialized those therapies for patients.

CITATOR

PAUL M. STEWART, MD, FRCP, FMEDSCI, EXECUTIVE DEAN & PROFESSOR OF MEDICINE, UNIVERSITY OF LEEDS, LEEDS, U.K.

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

I attended my first Endocrine Society meeting in 1987, which inspired me to follow my career in endocrinology. The quality of the science, the intensity of debate, and the wonderful warm welcome of the Society has nourished me over the years. For me, there is no greater recognition than to present at the Endocrine Society.

2021 WINNERS

Outstanding Leadership in Endocrinology Award



Helena Teede, MBBS, FRACP, PhD, FAAHMS

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

The Endocrine Society has enabled my research career trajectory through opportunities to present my work, network internationally, and partner in guideline development and task force guideline activity. n Australia and internationally, Helena Teede, MBBS, FRACP. PhD, FAAHMS, brings longstanding passionate commitment and visionary leadership to endocrinology. Her current roles span endocrinology practice, research, healthcare, education, government, and not-for-profit sectors.

Under her leadership, Monash Health Diabetes Unit is one of four Australian National Diabetes Centres of Excellence. She founded the Monash Centre for Health Research and Implementation engaging stakeholders, generating and translating evidence with policy and practice impact in endocrinology and other disciplines. She leads Monash Partners, the largest Australian Academic Health Science Centre (AHSC), and by forming and chairing the National AHSC Alliance she is driving a paradigm shift toward strategic, prioritized, and impactful research. Building national alliances and international networks, bringing together clinicians, researchers, consumers, and policy makers with a single voice in women's health, she has led development of evidencebased international guidelines for Polycystic Ovary Syndrome (38 societies including the Endocrine Society) and pragmatic healthy lifestyle pregnancy interventions tackling obesity, implemented internationally. She currently leads the WHO Healthy Lifestyle in Preconception and Pregnancy International Alliance. A person of great achievements, she has 25 awards, 440 publications, and has \$30 million in research funds including international and national competitive grants with three Australian NHMRC Centres for Research Excellence, Horizons 2020, PCORI, IDF, and WHO.

Having raised a family and maintained an international competitive academic and successful clinical career, she is an inspiring role model for women. With 35 past and current PhD students, she fosters new careers and builds international collaborations, which earned her Monash University's Vice-Chancellor's Award for Excellence in Postgraduate Supervision. As a College supervisor, she has trained more than 40 endocrinologists and runs women's leadership programs for clinicians and early-career researchers, and she was the first female clinician president of the Endocrine Society of Australia.

CITATOR

AMANDA VINCENT, MBBS, BMEDSCI (HONS), PHD, FRACP, MONASH HEALTH, MONASH CENTRE FOR HEALTH RESEARCH AND IMPLEMENTATION, MONASH UNIVERSITY, VICTORIA, AUSTRALIA



LAUREATE AWARDS

Outstanding Mentor Award

James R. Gavin, III, MD, PhD

ames Raphael Gavin, III, MD, PhD, is a clinical professor of medicine at Emory University and Indiana University, the CEO and chief medical officer of Healing Our Village, Inc., and the national program director emeritus for the Robert Wood Johnson Foundation (RWJF) Harold Amos Medical Faculty Development Program (AMFDP).

Dr. Gavin was the first African American president of the American Diabetes Association (1993 – 1994) and is a past-president of Morehouse School of Medicine, one of three historically black medical schools in the U.S. (2002 – 2005). He has made unparalleled contributions to endocrinology through his pioneering research in diabetes, leadership, advocacy, and, most notably, his dedication to advancing the careers of students, trainees, and physician-scientists (both early career and established) through mentorship. Dr. Gavin's wisdom, warmth, and critical input at key moments in his mentees' careers have had a lasting impact.

Dr. Gavin has served as direct mentor to more than 50 early-stage physician-scientists and has touched the careers of countless others through his leadership of both the Howard Hughes Medical Institute – National Institutes of Health (NIH) Medical Research Scholars Program and the RWJF AMFDP. During his more than 35-year involvement with the RWJF AMFDP, both as a National Advisory Committee member (1983 – present) and national program director (1993 – 2013), he has contributed to the career development of over 300 minority physician-scientists.

Among these individuals are three current NIH institute directors (including the NIDDK), our Endocrine Society past-president, and over 90 full professors at leading medical schools, a considerable proportion of whom are division chiefs, department chairs, and deans.

Throughout his career, his tireless dedication to increasing the number of medical school faculty from underrepresented minority groups has made an indelible mark on the diversity of leaders in endocrinology at the highest level.

CITATOR

CAMILLE E. POWE, MD, ASSISTANT PROFESSOR, HARVARD MEDICAL SCHOOL, DIABETES UNIT, MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

Q&A WITH THE WINNER

As a Laureate Award recipient, do you have any advice for those just beginning their careers?

Be always mindful that over the course of your career, it will be just as important or even more important who you work with as what you work on! Strong mentorship and committed colleagues provide the surest pathway to career success.

2021 WINNERS

Outstanding Public Service Award

Anne L. Peters, MD



Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

Over the years, the Society has become increasingly invested in diabetes as a subset of endocrinology and has been instrumental in working on advocacy for people with diabetes. Through the Endocrine Society, I have been involved in multiple initiatives to improve the lives of people with diabetes, as well as participating on guideline writing committees to educate clinicians. I have been part of numerous programs to teach clinicians more about diabetes management. Finally, the Endocrine Society has strongly supported the role of women in the workplace and helped to combat some of the barriers women face.

nne Peters, MD, is nominated for decades-long service to the care of underprivileged populations, through both her professional activities as a physician, her writings, educational activities, and as a volunteer.

Anne has consistently sought to raise up all those around her, irrespective of their socioeconomic status. These endeavors have included the education and training of minority and disadvantaged students, devoting time to providing healthcare in specialized clinics devoted to treatment of at-risk marginal populations, and volunteering in family medicine clinics and for Big Brothers/Big Sisters in the community.

Anne has integrated her strong desire to help underserved populations by integrating this theme into her research priorities and focusing on community-based participatory research for children and adults with diabetes and obesity in underserved areas. As one recent example, her current funded research includes a study — Specialized Technology Education for Patients and Providers – Tools for Continuous Glucose Monitoring (STEPP-To-CGM) — that is designed to create a lower literacy, culturally and language appropriate approach to teach pediatric and adult patients considering or starting on insulin pens, pumps, and continuous glucose monitors to improve glycemic outcomes. Her funded research programs have consistently included grants and projects designed to understand how best to transfer technology and advances in care to underserved communities and socioeconomically disadvantaged populations with special needs and challenges. These research activities have spanned decades and extended to education, cooking, transportation, cross-cultural awareness, and implementation of new technologies in the face of multiple socioeconomic barriers.

Finally, Anne has bravely led much of the challenge to sexism in medicine, willingly describing her experiences battling abusive behavior in both the clinic and professional circles, and serving as a role model for all women who face barriers, from microaggression to blatant harassment, sexism, and discrimination, in the workplace.

CITATOR

DANIEL J. DRUCKER, MD, PROFESSOR OF MEDICINE, LUNENFELD TANENBAUM RESEARCH INSTITUTE OF MT. SINAI HOSPITAL, UNIVERSITY OF TORONTO, TORONTO, CANADA; EDITOR-IN-CHIEF, *THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*



LAUREATE AWARDS

Outstanding Scholarly Physician Award

Guillermo E. Umpierrez, MD, CDE

uillermo Umpierrez, MD, CDE, professor of medicine at Emory University School of Medicine, a renowned expert in the management of diabetes mellitus in the hospital setting, epitomizes the attributes of a physician scholar through his research, teaching, and lifelong learning.

Driven by his keen intellect, curiosity, and passion for knowledge, his work has shaped the approach to managing hyperglycemia in non-critically ill hospitalized patients. He was the first to note that hyperglycemia in hospitalized patients, with and without a history of diabetes, represents a marker of poor clinical outcome and mortality. His research evaluating therapeutic approaches for hyperglycemia in the hospital setting established the superiority of the basal-bolus insulin regimen over the longstanding approach of "sliding-scale insulin" for managing patients with type 2 diabetes hospitalized with a non-critical illness.

His extensive research and publications in altered glucose homeostasis in the hospital setting have made him a key opinion leader on the subject. He chaired the Endocrine Society Clinical Practice Guideline for the "Management of Hyperglycemia in Hospitalized Patients in Non-Critical Care Setting," the American Diabetes Association "Standards of Medical Care in Diabetes-Section on Diabetes Care in the Hospital," and the "Revised American Diabetes Association Position Statement: Hyperglycemic Crises in Patients with Diabetes Mellitus."

Countless medical students, residents, and fellows have benefited from his mentorship, knowledge, energy, and enthusiasm. His superb communications skills, expertise, insight, and teaching ability make him a popular speaker. He has lectured worldwide and has been frequently featured in the Endocrine Society's Meet the Professor sessions at the **ENDO** annual conference.

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

I have been a member of the Endocrine Society since 1998 when I finished my fellowship training at Emory University. I have attended yearly meetings and participated in multiple educational programs with the Endocrine Society. I have received numerous opportunities to present our research work, invited to lectures as speaker, and to chair scientific sessions. In addition, I was honored to serve in multiple committees, chairman of Endocrine Society's Global Strategy Task

Force, and as a member of the National Endocrine Society Council. These opportunities have provided me with the opportunity to interact with physicians and researchers in the U.S. and around the world.

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CITATOR

R. ARGUELLO, MD, ASSOCIATE PROFESSOR OF MEDICINE, CLINIC DIRECTOR, DIVISION OF ENDOCRINOLOGY, DIABETES AND METABOLISM, UNIVERSITY OF ALABAMA AT BIRMINGHAM, BIRMINGHAM, ALA.

2021 WINNERS

Richard E. Weitzman Outstanding Early Career Investigator Award

Alexander S. Kauffman, PhD

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

My professional career has benefited greatly from the Endocrine Society, via stimulating personal interactions with colleagues and scientists at annual meetings to opportunities to share my lab's findings through posters, oral presentations, or publications in endocrinology. I have also benefited from invaluable mentoring from many respected leaders in the field.

lexander (Sasha) Kauffman, PhD, is an internationally recognized leader in researching the regulation of the neuroendocrine reproductive axis in development and adulthood, as well as the hormonal and neural mechanisms underlying sex differences in puberty and reproductive physiology. Kauffman has demonstrated a productive and successful track record of reproductive neuroendocrinology research, with more than 68 peer-reviewed publications, including 48 articles since joining the faculty at the University of California, San Diego, in 2009.

Kauffman's lab uses an array of physiological and transgenic mouse models and a combination of *in vivo*, physiological, molecular, and histological methods to study the role of kisspeptin and related neuropeptides (e.g., neurokinin B, GnRH, RFRP-3, dynorphin) in controlling puberty, reproductive hormone release, and fertility. He is also a leading expert on the development and function of sex differences in the brain and a world-recognized expert in single- and double-label histological analyses of mRNA and protein expression in the brain and how such neural expression changes under different developmental or hormonal conditions.

In recent years, his lab is among the first to measure changes in endogenous LH pulses in awake, freely moving mice. Kauffman has won several young investigator research awards, including the 2012 FABBS Early Career Investigator Award. He is an associate editor for the journal *Neuroendocrinology* and is on the editorial boards for *Endocrinology* and *Journal of Neuroendocrinology*. He has authored multiple reviews on kisspeptin and reproductive neuroendocrinology and edited the field's first and only kisspeptin textbook, which was downloaded (single chapters or in full) over 26,000 times in the first year of publication. He is consistently well-funded, with grants from both the NIH and NSF. He has also been an invited speaker at numerous national and international meetings, including conferences in Italy, France, the Czech Republic, Spain, Australia, Argentina, Chile, Japan, Canada, and Sweden.

CITATOR

PAMELA L. MELLON, PHD, RESEARCH, OBSTETRICS, GYNECOLOGY AND REPRODUCTIVE SCIENCES DEPARTMENT, CENTER FOR REPRODUCTIVE SCIENCE AND MEDICINE, UCSD SCHOOL OF MEDICINE, SAN DIEGO, CALIF.

LAUREATE AWARDS

Roy O. Greep Award for Outstanding Research

Takashi Kadowaki, MD, PhD

diponectin is an adipocyte hormone that is most abundantly expressed in white adipose tissue. Takashi Kadowaki, MD, PhD, discovered that adiponectin enhances insulin sensitivity and possesses anti-diabetic actions. He identified and cloned the receptors of adiponectin (AdipoR1 and AdipoR2), both of which are seven-transmembrane receptors. Remarkably, they were found to represent a new family of receptors with their N-terminals inside, and their C-terminals outside of the cells, with the reverse topology of G-protein-coupled receptors (GPCR).

Dr. Kadowaki showed that AdipoR1 activates the AMP kinase pathway and AdipoR2 activates the PPAR pathway, both of which regulate oxidation of glucose and fatty acids and enhance insulin sensitivity. In obese subjects, both adiponectin and AdipoR1/R2 levels are reduced, substantially contributing to the pathophysiology of type 2 diabetes, metabolic syndrome, cardiovascular disease, and reduced longevity.

He was the first to succeed in developing a small-molecule adiponectin receptor agonist (AdipoR Agonist: AdipoRon). Orally administered AdipoRon activates the same signaling pathway as caloric restriction and physical exercise, thereby improving obesity-related diseases as a whole, including type 2 diabetes. This proof of concept for an oral Adiponectin drug has fostered tremendous interest in adiponectin therapeutics, facilitated by his recent elucidation of the three-dimensional structure of adiponectin receptors.

Dr. Kadowaki has also led important genetic and clinical studies that have important impact for understanding, diagnosis, and treatment of metabolic disorders. His recent genetics have confirmed the importance of identifying genetic variation and diabetes susceptibility in Asian populations. Dr. Kadowaki's accomplishments have not only enabled essential understanding of the molecular mechanisms of adiponectin action but have re-invigorated adiponectin-based drug development programs for type 2 diabetes. Collectively, his body of work, broadly focused on insulin action in health and disease, exhibits both a high degree of novelty and immediate translational relevance.

DANIEL J. DRUCKER, MD, PROFESSOR OF MEDICINE, LUNENFELD TANENBAUM RESEARCH INSTITUTE OF MT. SINAI HOSPITAL, UNIVERSITY OF TORONTO, TORONTO, CANADA; EDITOR-IN-CHIEF, *THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM*

CITATOR

Q&A WITH THE WINNER

As a Laureate Award recipient, do you have any advice for those just beginning their careers?

Endocrine research is quite rewarding since it will reveal truth and secrets of health and disease after a certain amount of hard work, which you will enjoy with a sense of accomplishment.

2021 WINNERS

Sidney H. Ingbar Distinguished Service Award*



Sally A. Camper, PhD

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

The annual meeting of the Endocrine Society has been invaluable for my career and for that of my trainees. It provides opportunities to present research, network with collaborators and colleagues, and learn about advances that range from scientific discoveries to clinical challenges. The Society has provided leadership opportunities through service on committees, journal reviews, and participation in trainee forums.

ally Camper, PhD, is a professor in the Department of Human Genetics and Internal Medicine at the University of Michigan. She served as the James V. Neel Professor and chair of the Department of Human Genetics from 2005 to 2015, and from 2016 to present she is the Margery W. Shaw Distinguished University Professor of Human Genetics at the University of Michigan.

She is an exceptional basic scientist who has successfully applied innovative genetic technologies to understand the field of pituitary and hearing development. With friendly national and international collaborations, she has made major contributions to our understanding of the regulation of pituitary development.

Dr. Camper has been very active on a variety of Endocrine Society committees, serving on the Basic Science Task Force, the Annual Meeting Steering Committee, Scientific Statements Task Force, Scientific and Educational Programs Core Committee, the Nominating Committee, and the *Endocrine News* Advisory Board. She also served as ambassador on the International Endocrine Scholar Program that gave the opportunity for international members to find a laboratory in the U.S. so that they could increase their knowledge in the endocrinology field. She is a dedicated and skilled teacher and has mentored several trainees, both national and international. In the past 10 years, she has trained people from Brazil, Argentina, and France that are now back in their home countries but still collaborating with her on a variety of scientific projects.

She was the principal investigator of several grants and has been recognized with several distinguished awards from the Endocrine Society, as well as other professional associations. Due to her exceptional communication skills, Dr. Camper has been invited to speak at several national and international conferences. With such an outstanding record of distinguished service to the Endocrine Society, Dr. Camper is truly deserving of the Sidney H. Ingbar Distinguished Service Award.

*This award recognizes distinguished service to the Endocrine Society and the field of endocrinology. This year, the Society is honoring two members for contributions to basic science.

CITATOR

LUCIANI CARVALHO, MD, PHD, ASSISTANT DOCTOR, ENDOCRINOLOGY DISCIPLINE, INTERNAL MEDICINE DEPARTMENT, UNIVERSITY OF SAO PAULO MEDICAL SCHOOL, SAO PAULO, BRAZIL

LAUREATE AWARDS



Sidney H. Ingbar Distinguished Service Award*

Ursula B. Kaiser, MD

True and the student of the service involved in service to the Endocrine Society continuously since 1997. She has served as member or chair on the Student Affairs Committee, Publications Committee, Laureate Awards Committee, Annual Meeting Steering Committee, Research Affairs Committee, and Committee on Governance Affairs. She has also served on two ENDO Task Forces, the Laureate Awards Review Task Force, and currently the Governance Task Force. As vice president, Basic Science from 2011 to 2014, Ursula worked tirelessly to improve services for the basic science members of the Endocrine Society. She initiated and served as chair of the Basic Science Task Force to assess the overall needs of the basic science community and develop recommendations for enhancements to the Society's programs and services for basic scientists. Many concrete, practical, and sustainable recommendations arose from this task force and have since been implemented with great success.

Ursula has been active in editorial roles and activities. She was a member of the editorial board of *Endocrinology* and of *Molecular Endocrinology*. She served as an associate editor of *Molecular Endocrinology* and *Endocrinology*, facilitating the merger of the two journals.

Ursula has been active in Women in Endocrinology, serving as secretary-treasurer, on the Awards Committee, and as president. She has also served our endocrine community as a founding member and steering committee member of the Association of Endocrine Chiefs and Directors and as the Endocrine Society representative to the FASEB Board. She has been a permanent member of the NIH ICER Study Section as well as an ad hoc member of multiple NIH study sections and advisory panels. Lastly, it is worth noting that she continuously strives to expand the impact of the field of endocrinology through her role as chief of the Division of Endocrinology, Diabetes, and Hypertension at Brigham and Women's Hospital at Harvard Medical School.

*This award recognizes distinguished service to the Endocrine Society and the field of endocrinology. This year, the Society is honoring two members for contributions to basic science.

CITATOR

JINGJING KIPP, PHD, CHAIR, NOMINATING COMMITTEE, WOMEN IN ENDOCRINOLOGY

Q&A WITH THE WINNER

How has the Endocrine Society supported your professional development/career journey?

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The Endocrine Society has served as my primary professional 'home' for many years, beginning as an endocrine fellow. My involvement in the Endocrine Society has profoundly influenced my career development by providing opportunities to present and publish my research, learn about pioneering discoveries in endocrine research and new advances in clinical practice, and interact with expert scientists and clinicians from around the world. The Endocrine Society also gave me opportunities to learn how to be an effective committee member, how to be a committee chair, and how to lead a meeting effectively.

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Visiting the White House for an enjoyable chat with President Obama before heading to Stockholm for the Nobel festivities in 2012. PHOTO COURTESY OF ROBERT J. LEFKOWITZ

When Robert J. Lefkowitz, MD, received the Nobel **Prize for Chemistry** in 2012, that was only part of his storied career as a physician scientist. With a new book on the shelves, Lefkowitz talks to **Endocrine News** about misconceptions about scientists, what inspired him to write a book, and how it feels for a selfdescribed "accidental scientist" to receive a Nobel Prize.



by derek bagley Accologyothese

Talking with Nobel Laureate Robert J. Lefkowitz, MD

What do you do when you've reached the pinnacle of your field? Where do you go from there? For Robert J. Lefkowitz, MD, James B. Duke **Professor of Medicine** and investigator with Howard Hughes Medical Institute at Duke University — as well as Nobel Laureate — the next logical step is to publish a memoir, especially if you can tell a tale the way Lefkowitz does.

efkowitz's book, *A Funny Thing Happened on the Way to Stockholm: The Adrenaline-Fueled Adventures of an Accidental Scientist*, hit shelves in February and is a collection of stories that recounts Lefkowitz's journey from serving in the "Yellow Berets" to winning the 2012 Nobel Prize in Chemistry for — along with Brian Kobilka, MD, professor and chair of molecular and cellular physiology at the Stanford University School of Medicine — his work on G-coupled protein receptors, which about a third of all drugs now target.

Endocrine News will run an excerpt from A *Funny Thing Happened on the Way to Stockholm* as well as some of Lefkowitz's thoughts on the plight of physician-scientists on our website, but here, edited for length and clarity, is our conversation with Lefkowitz, about the path that led him from cardiologist to reluctant researcher to Nobel Prize winner, and how his memoir comes at a pivotal moment in medical science.

Endocrine News: Tell me a little about the experiences that led you to becoming an "accidental scientist."

Robert J. Lefkowitz: I used the term "accidental scientist" because I had no intention of being a scientist. I had decided by the time I was eight years old that I was going to be a doctor, and I never wavered from that. I went straight through Bronx High School of Science; my classmates wanted to be physicians. That was of course the middle-class Jewish dream, or stereotype, in the '50s, "My son the doctor." There had never been a doctor in my family. It was an immigrant family of relatively modest means.

I went through Columbia College, Columbia Medical School, and then house staff, internship, and residency at Columbia. I was always very interested in science. I loved my science courses, especially anything to do with biochemistry. But that said, I didn't envision myself actually practicing science. I just liked knowing it, and although I had many opportunities, especially in college and medical school, to do research electives I never availed myself of a single one.

In college, I would always use those periods to take things like philosophy and sociology. In medical school, I always did clinical rotations. So then, something happened, a cataclysmic event, which would alter the course of my entire life and career, and that of so many others: the Vietnam War.

The war was raging in the '60s. I graduated medical school in 1966. At that time, there was a lottery draft for all men over 18. That meant it was a lottery, but not for physicians — there was just a draft. You were drafted at the time of your graduation from medical school, and then you were given an automatic one- or two-year deferment to gain some clinical experience as an intern, or a resident, and then you went in, Army, Navy, Air Force, whatever.

Many felt the war was immoral, some felt it was illegal, but most of my colleagues and friends like myself did not want to support this war by serving in Vietnam. The problem was there were very few legal ways around it. One of the few was to gain a commission in the United States Public Health Service. The United States Public Health Service was then considered one of the military branches. Most of their members were officers serving within the United States, and in particular they had assignments available at the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and several other research institutions. But as you can imagine these commissions were extraordinarily competitive to get. I always had very high academic standing, good recommendations, top schools, so I got into the program, and was assigned for two years at the NIH, not because I specifically wanted to do research, but for the reasons that I explained.

My entire generation of academic physician scientists came out of that program. And to give you a sense of the remarkable success of that program, commonly known as the "Yellow Berets" [a derisive take on the Green Berets — yellow to imply cowardice], in my class, four of us went on to win the Nobel Prize: myself, Michael Brown, Joe Goldstein, and Harold Varmus. And there was one other guy in the group you may have heard of, who did okay for himself even though he didn't win a Nobel Prize, Tony Fauci. Tony was in our class. We all knew each other. We're all good friends to this day.

You can argue that for most of us we were accidental scientists. I'd have to talk to them to find out if that's true, but absent that experience who knows what any of us would've done.

EN: That's quite the pivot from cardiologist.

RJL: I served [at the NIH] from 1968 to 1970, and it did not initially go well, and that was difficult for me because I had never really failed at anything in my life, much less in a sustained way, but

here I was after a year of the hardest effort that I could put forth and I was nowhere with my project. That convinced me that by no stretch of the imagination was research something that I wanted to make part of my career, and so I made plans at that point, at the one-year mark, to finish my clinical training a year later at the Mass General Hospital (MGH) in Boston where I would do a final year of senior residency to be followed by two years of cardiology fellowship.

As luck would have it, during my second year at the NIH things began to click, and by the time I finished there I had been able to write with my mentors my first few papers. I'd gotten a taste of what success is like in research, and I was starting to like it, and I was importuned by my mentors to stay on for additional training. They said, "You have really got a hot project now." But I was not that convinced, and I went off to the MGH.

I threw myself with gusto into the clinical work, but at the sixmonth mark at the Mass General I had a real epiphany because I realized I had this feeling that something was missing from my life, and I realized it was the research, the day-to-day challenge of planning and doing experiments, making up hypotheses, the whole bit.

EN: The creativity you talk about.

RJL: I realized that I had this creative spark or instinct, which was just not being met by my clinical duties, and so I found a mentor, quite a noted scientist, and also chief of the cardiology division, and persuaded him to let me begin doing experiments in his lab part time while I finished my clinical training, and for the remaining two and a half years that I was there I continued to do just that.

EN: Your Nobel Prize work, the discovery of GPCRs, they're at the intersection of everything, especially in endocrinology.

RJL: When I went to the NIH, I was assigned to two mentors, Jesse Roth and Ira Pastan. They both were card-carrying endocrinologists, and I was assigned to the Clinical Endocrinology Branch. The funny thing about that is we split our time about 20% doing clinical work and 80% doing research. The clinical time was every bit the equivalent of an endocrine fellowship.

Jesse and Ira had it in their heads that hormones worked through mystical entities called receptors for which there was no proof at all, and in fact the idea was very controversial, but it was an idea right at the intersection as you say of pharmacology, cardiovascular medicine, endocrinology, etc.



(Above) Schmoozing in the lab with my trainees is a favorite pasttime. In this case from the 1980s, I'm deep in conversation with my post-doc John Regan. During this era, a sign was mysteriously affixed to my office door pronouncing me the "Sultan of Schmooze." (Middle, left) In 2008, I was honored to receive the National Medal of Science from President George W. Bush. (Middle, right) Senior residency and cardiology fellowship days at Massachusetts General Hospital, sneaking into the lab to do experiments instead of reporting to clinical rotations. PHOTOS COURTESY OF ROBERT J. LEFKOWITZ. (Bottom) Sharing the Nobel festivities with my family (left to right): Joshua Lefkowitz, David Lefkowitz, his wife Michelle, Lynn Lefkowitz, me, Mara Lefkowitz Mack, Cheryl Herbsman, Mara's boyfriend (now husband) Eric Mack, Maya Herbsman, Jonah Herbsman, Wade McCollum (Noah's husband), Oded Herbsman (Cheryl's husband), Noah Jordan, and my cousin Ellen Danziger. PHOTO COPYRIGHT © NOBEL MEDIA. PHOTO BY ALEXANDER MAHMOUD.





About THE BOOK

Lefkowitz's book *A Funny Thing Happened on the Way to Stockholm: The Adrenaline-Fueled Adventures of an Accidental Scientist* is out now from Pegasus Books. An excerpt is forthcoming on the *Endocrine News* website.

ROBERT LEFKOWITZ, M.D.



To pharmacologists, and I think to endocrinologists, receptors were just some general pattern of forces on a cell that allowed hormone and drug molecules to interact. I came to the conclusion really for two complimentary reasons to make the so-called beta adrenergic receptor the target of my studies. One, I was an aspiring young academic cardiologist. I wanted to work on something relevant to cardiovascular medicine, and two, I had certain technical requirements, lots of analogs to work with. Those things seemed to come together on the beta-adrenergic system, and so I opted to work on that, and here I am just 50 years later, and I still work on it.

EN: How big was the buzz around the lab when you found out you won the Nobel Prize in Chemistry?

RJL: It was amazing. I had been touted for the Nobel for up to 20 years. By touted I mean people were saying, "You know, Bob, you might win this thing," and it didn't happen, and it didn't happen, and it didn't happen.

So then, in 2012, it's Nobel announcement week, and as you know they give the prizes in a set order, Monday they announce medicine, Tuesday's physics, Wednesday's chemistry. Monday has come and gone, and they give the prize for induced pluripotent stem cells. I thought that was great. Then on Wednesday morning at five o'clock the phone rings, and I sleep with earplugs so I don't hear it, but my wife picks it up and gives me a poke in the ribs, and she says, "There's a call for you from Stockholm."

The day was absolutely nuts. I have five children spread across the country, and I was only able I think to personally inform two of them because I got the call at 5:00 a.m., and they said that they'll

make the announcement at 6:00, which is 11:00 Stockholm time, and they said you can't tell anybody, not even family until we make the announcement, and no sooner had they made that announcement at 6:00 that my phone went crazy. Newspapers were calling, and it was amazing. When I got to my office, it was filled with people, not just from my lab, but passers by, and anybody who was in the building stopped in. There were balloons. There was a big news conference.

It turned out to my surprise I was the very first Nobel Laureate ever to be at



Carmelo Milano holding a lab-created transgenic mouse with altered adrenergic receptor activity, flanked by Lee Allen (right) and myself in this 1994 newspaper photo. PHOTO COURTESY OF THE HERALD SUM.

Duke University. They really pulled things together, and by 4:00 that afternoon there was a beautiful catered reception at a big hotel across from the campus with hundreds of people there that they had organized in the course of basically eight hours.

In contrast, I shared the prize with one of my former trainees, Brian Kobilka, who now is a distinguished professor at Stanford. At Stanford, Nobel Prize winners are thick on the ground. In the history of the university, I think they've had 25 Nobel Prize winners compared to one at Duke, so they have a protocol in place, and within an hour of Brian getting the phone call there was a team from the public relations office at his home and they handled all the incoming calls, the press, and everything that was going on. *

EN: That's got to be an incredible feeling. Now to your book. What prompted you to write it? And tell me about the writing process.

RJL: It's a good story. As you have learned already during our short time we've known each other, I'm a bit of a raconteur. I especially love stories with a humorous aspect to them, and anybody who's trained with me knows that I love to tell stories, and for years people have been trying to get me to write a book with some of my stories. I don't think I ever would've done it. Just too much going on.

One day a couple of years ago one of my former postdocs, Randy Hall, had come up as he does every couple of years to attend a Duke basketball game with me. He's an ardent fan, and I have season tickets. We were having dinner before the game, and of course I was regaling him with stories, and he says, "Bob, you really have to

write these things up." I said, "Well, I'm not going to."

He says, "Look. Let me pitch you an idea. Do you know the book, *Surely You're Joking*, Mr. Feynman!? Why don't we model it on that? We'll start talking every week. I'll record it. You tell me your stories. I'll write them up. You edit them, and we'll put them into some sort of narrative framework, and let's see if we can come up with a book." Over the course of a year, I would say we spoke two hours a week, he recorded everything, so he had about 100 hours of my storytelling, and

*EDITOR'S NOTE: Currently, Stanford University is home to 19 Nobel Laureates, with an additional 15 who are deceased. Additionally, in 2015, Duke's Paul L. Modrich, PhD, a professor of biochemisty at Duke since 1976, received the Nobel Prize in Chemistry along with North Carolina's Aziz Sancar and the Francis Crick Institute's Tomas Lindahl, for mapping, at the molecular level, how cells repair damaged DNA and safeguard genetic information.



(Above) Sketching out a plan of action with medical student Erin Bressler in the lab, my favorite place to be. PHOTO COURTESY OF ROBERT J. LEFKOWITZ (Right) There is no shortage of pomp and circumstance during the Nobel festivities, as seen as I received the Nobel Medal from King Carl XVI Gustaf. PHOTO COPYRIGHT © NOBEL MEDIA, PHOTO BY ALEX LJUNGDAHL.

we went chronologically. I would prepare for each session by just trying to think of all the stories I'm always telling from childhood, teenage years, and just going through it.

And then we organized them, found ourselves a very good literary editor and a nice publisher, and the book was published [on February 2, 2021].

EN: One thing that stuck out to me is how you talk about your trepidation when you started as a researcher, and I wonder if you have any advice for young researchers who may feel the same way; that they had a calling to be a clinician, but now they might start whetting their appetite for research, or they have this hidden love for it. What kind of advice do you have for young researchers?

RJL: A number of years ago, I was in my office over the Christmas holiday break going through a ritual which I have done virtually throughout my career. During that week, Christmas and New Year, I'd sit for several hours by myself, and I'd think about all the projects going on in the lab.

I was working on that, and this young physician-scientist, good guy, comes in. He says, "What are you doing, Bob?" I told him, and he said, "Oh, that's not a bad idea." I said, "How was your past year?

I realize the whole 'publish or perish' thing, and you've got to get grants, but it's worth bearing in mind that if you really want to make important discoveries you have to work on challenging problems."



How are your projects doing?" He says, "Great." I said, "No kidding. What percentage of what you're working on is panning out?" He says, "Almost everything, at least 80%, maybe 90%."

"No kidding," I said, "That is a good year." He said, "What about you?" I said, "It's right around 20%, which is about where I'd like it to be."

He said, "What are you talking about?" I explained to him that reflexively if I get to the end of the year and anything 50% or more of what I've got listed seems to be working I conclude that I am dogging it, that I must be taking on things that are not as challenging as they should be, and I really think about that. So, if 20% of my projects are moving forward in some way or another, I'm quite happy."

He was initially surprised, but I can't tell you how many times over the last decade he has thanked me for that conversation. He told me it put his whole research program into a different orbit than he had been in, and to tell you the truth his research has really deepened and improved over these years. That's one thing I would talk to young aspiring scientist about. I realize the whole "publish or perish" thing, and you've got to get grants, but it's worth bearing in mind that if you really want to make important discoveries you have to work on challenging problems.



The subject of training physicianscientists is near and dear to my heart. It's sad, but today in surveys if you ask physicians, 'Does research play any role in your career? Do you do any research at all of any kind?' Only about 1.5% answered yes, so that means that 98% to 99% of all physicians do no science, no research, at all. And the problem with this is, where's the next Tony Fauci going to come from?"

As a member of the "Yellow Berets," I was able to serve my country while staying stateside rather than heading to Vietnam. In this 1968 U.S. Public Health Service photo of the staff of the National Institute of Arthritis and Metabolic Diseases (as it was then known), I'm in the third row, second from the left, and joined by two fellow Yellow Berets who would later go on to win Nobel Prizes: Harold Varmus (top row, third from left) and Mike Brown (second row, second from left). PHOTO COURTESY OF ROBERT J. LEFKOWITZ

EN: Don't be afraid to fail.

RJL: Absolutely. Failure is just an essential element in what we do.

EN: I'm given to understand that you have some prescriptions for this shortage of physician-scientists you're seeing. As you say, your career path was shaped by things that can't be repeated, like the Vietnam War.

RJL: The subject of training physician-scientists is near and dear to my heart. It's sad, but today in surveys if you ask physicians, "Does research play any role in your career? Do you do any research at all of any kind?" Only about 1.5% answer yes, so that means that 98% to 99% of all physicians do no science, no research, at all. And the problem with this is, where's the next Tony Fauci going to come from?

In a sense, it's a vicious cycle in that as the number of physicianscientists has declined, there are fewer and fewer role models for medical students to see. In my day, they would see people like myself, or the people I just mentioned, Mike Brown, Joe Goldstein, and Tony Fauci on rounds, people who knew one end of a stethoscope from another, but who could also talk to you about the biochemistry and physiology of the disease processes they were seeing before them. Today, there's this lack of role models, and to the extent that there's a lack of role models fewer and fewer people go in for this type of career. The training has gotten longer and more expensive, and it's hard to stick with it because obviously if you're going to do both it takes more years of training, so there are all sorts of problems. And so, we're hoping to counter this to a certain extent. A small group of us have formed a nonprofit organization called the Physician Scientist Support Foundation (PSSF). Right now, we're focusing our energies on trying to develop programs for medical students who'd like to take a year out of their medical school curriculum and spend it in a laboratory.

EN: What do you hope readers take away from your memoir? Why should they pick it up?

RJL: What I'm hoping people take away from the book is just what a joy it is to have a career as a physician-scientist in my case, or as a scientist. I think several people who have looked at the book talk about what comes through is the joy of discovery, and the joy of the hunt, for scientific knowledge. Also, I think for lay people, I hope it will humanize the people who are doing science. I think a lot of lay people look at scientists as being some stuffy, dry sort of characters, but if they get to know me at all, which I think they will through this book, they will see that I'm having a very good time, so it's infectious. People in my lab who look back on their experience often tell me, "I had more fun during the years I was in your lab than I've had at any point since," and I take a lot of pride in that.

- BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE FEBRUARY ISSUE, HE WROTE THE COVER STORY ON HOW ENDOCRINE NURSES HAVE BECOME MORE ESSENTIAL THAN EVER DURING THE COVID-19 PANDEMIC.



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ENDO 2021 saw the debut of a new virtual poster competition called the Rising Stars Power Talks where 15 trainees explained their research and took questions from a virtual audience. *Endocrine News* catches up with the winners to learn more about their research, their future plans, and more.

POWER:

TALKING TO THE WINNERS OF The 2021 Rising Stars Power Talks

hen ENDO 2021 took place last month, it became the first all-virtual annual conference in the Endocrine Society's history and took distance learning to new heights that will change the course of scientific conferences forever.

Aside from an **ENDO** that featured virtual versions of the elements attendees have come to expect — hot topics, energetic debates, world-renowned speakers, career guidance seminars, a virtual "information booth," and much, much more — there was also a brand-new feature that launched this year: the Rising Stars Power Talks.

This poster presentation functioned much like the highly popular Knock-Out Rounds from years past, but in a virtual environment. Fifteen trainees with one slide presentation were given three minutes to present their research and why it is significant, followed by a short Q & A session. This rapid round science communication competition highlighted the top-scored abstracts from the 2021 Outstanding Abstract Award winners and was hosted by the Endocrine Society's Trainee and Career Development Core Committee (TCDCC).

The event was moderated by Katja Kiseljak-Vassiliades, DO, University of Colorado Denver, Aurora, Colo., and Erik Russell Nelson, BSc, PhD, University of Illinois at UrbanaChampaign, Champaign, Ill., who both serve on the TCDCC. "This session provides a great opportunity for the early-stage researchers to present their latest science to the broader community in a fun format," Nelson says. "It also exposes established investigators to the creativity and cutting-edge approaches these rising stars are using."

The event gave the participants an opportunity to enhance their communication skills and showcase their research as well as receive invaluable feedback in a fast and fun competition. Since research presentations are fundamental to a scientist's development, participants were encouraged to present the substance of their research and its significance in such a way that can be understood by a broad scientific audience.

According to Kiseljak-Vassiliades, the idea of Rising Stars Power Talks really came from one of Endocrine Society favorite events, Knock-Out Rounds, but converted to a digital setting. "The event showcases a select group of outstanding poster award winners — Endocrine Society Rising Stars," she says. "Presenting a research project in three minutes is a challenge even for most seasoned scientists and our earlycareer presenters were up for the challenge. In the spirit of a challenge, there was also a competition and awards. It was a must-see event!"



Melissa G. Lechner, MD, PhD, UCLA David Geffen School of Medicine. Los Angeles. Calif.



Despite significant efforts to date, the cause of IrAE remains unknown. To design next generation immunotherapies with less toxicity but preserved anti-tumor effects, we must determine the cause of IrAE.

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Janet Chiang, MD, University of California, San Francisco, Calif.



In our clinical practice, we often encounter older males with osteoporosis who have sustained fragility fractures which are associated with increased morbidity and mortality. Osteoporosis in older males is often underrecognized and undertreated. We hope to improve the screening and treatment of osteoporosis in older men.

Maria Cristina Foss de Freitas, MD, PhD, University of Michigan, Ann Arbor, Mich.

Conducting studies in rare diseases is not always easy; the difficulties arise from the recruitment of affected individuals and clear delineation of possible side effects, as the natural history of the disease is not always completely known. However. it is always very rewarding and stimulating since new knowledge remains to be discovered.

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Presenting a research project in three minutes is a challenge even for most seasoned scientists and our early-career presenters were up for the challenge. In the spirit of a challenge, there was also a competition and awards. It was a must-see event! – Katja Kiseljak-Vassiliades, DO

The two people's choice winners were Janet Chiang, MD, University of California, San Francisco; San Francisco Veterans Affairs Health Care System, San Francisco, Calif., and Melissa G. Lechner, MD, PhD, UCLA Geffen School of Medicine, Los Angeles, Calif., and were chosen by the almost 200 attendees who tuned into the debut Rising Stars Power Talks.

The three winners scored by the judges from the TCDCC were: First Place: Rachel V. L. Gonzalez, BS, University of Illinois at Urbana-Champaign, Urbana, Ill.; Second Place: Maria Cristina Foss de Freitas, MD, PhD, University of Michigan, Ann Arbor, Mich.; and Third Place: Leticia M. de Souza Cordeiro, PhD, University of Rochester, Rochester, N.Y.

They all took time out of their **ENDO 2021** schedules to talk to *Endocrine News* about their research, why they chose it, and their future research plans.

Endocrine News: Tell us a little bit about the research that you presented at the session.

Melissa G. Lechner, MD, PhD: Our research evaluates the cause of thyroid immune-related adverse events (IrAE) occurring during immune checkpoint inhibitor cancer treatment using a newly developed mouse model and translational studies in cancer patients. We identified a population of T cells that contribute to the development of IrAE. Furthermore, by blocking a key cytokine produced by these cells, we were able to reduce the incidence of IrAE during ICI treatment in a preclinical model. This holds great promise for potential therapy to reduce endocrine IrEA in checkpoint inhibitortreated cancer patients.

Janet Chiang, MD: The aim of our study was to better diagnose and treat older men who have osteoporosis and are at high risk



of hip fractures. We used biomechanical computed tomography, (BCT), a technology that is applied to any hip-containing CT scans, such as abdominal CTs to give us two measurements: 1. A femoral bone strength estimated by finite element analysis (fragile bone strength has been shown to be independently associated with incident hip fractures in men) and 2. the DXAequivalent femoral neck bone mineral density T-score. We evaluated the use of BCT in men ages 65 and older with hipcontaining CT scans at the SF VA over a two-year period. We ultimately performed BCT analysis on 557 scans; we reviewed the electronic health records for each man; we then calculated the 10-year probability of hip fracture by FRAX using the clinical data from chart review and the femoral neck T-score from BCT. We then categorized men into high risk and low risk for hip fractures based on their FRAX scores. We found that of the men who had fragile bone found on BCT, around 40% are found to have a T-score of >-2.5. Of those who have a T-score of >-2.5, 30% have a low fracture risk by FRAX, and these men would typically not be offered pharmacological treatment despite having fragile bone.

Maria Cristina Foss de Freitas, MD, PhD: Familial partial lipodystrophy (FPLD) is a rare disease characterized by selective loss of peripheral subcutaneous fat, usually associated with dyslipidemia and diabetes mellitus. Currently, there are no approved specific therapies for this disease in the U.S. On the other hand, Angiopoietin-like 3 is a glycoprotein secreted by the liver that inhibits lipoprotein lipase and endothelial lipase activity, two key enzymes involved in the metabolism of triglyceride-rich lipoproteins and HDL leading to an increase in VLDL-triglyceride secretion. Individuals with homozygous loss-of-function mutations in angiopoietin-like 3 have



Rachel V. L. Gonzalez, BS, PhD candidate, Indiana University School of Medicine, Indianapolis, Ind.

I am passionate about research that considers the biological underpinnings of health contexts and ultimately, my hope is that pursuing such research can lead to improvements in human health.

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Leticia M. de Souza Cordeiro, PhD, University of Rochester, Rochester, N.Y.



My family has a history of diabetes, and as a nutritionist. I had the opportunity to consult a lot of patients with diabetes. My goal was always to help them to achieve the best control of blood glucose levels. I became more passionate about better understanding how molecular mechanisms are involved in the control of glucose homeostasis.

enhanced LPL activity and present with a hypolipidemic phenotype and render protection from atherosclerosis.

An ASO targeting ANGPTL3 mRNA, called Vupanorsen, has recently caused a significant reduction in ANGPTL3 and triglycerides levels in individuals with diabetes mellitus, hepatic steatosis and hypertriglyceridemia. Given all the data together, we hypothesized that the reduction of ANGPT3 levels could reduce hypertriglyceridemia and associated metabolic abnormalities in FPLD patients. Then we proposed this proofof-concept, phase 2, open-label study aiming to address the efficacy and safety of vupanorsen in patients with FPLD.

Our study showed that vupanorsen may have a beneficial impact on controlling hypertriglyceridemia and other metabolic abnormalities observed in patients with FPLD. "This session provides a great opportunity for the early-stage researchers to present their latest science to the broader community in a fun format. It also exposes established investigators to the creativity and cutting-edge approaches these rising stars are using." — Erik Russell Nelson, BSc, PhD

Rachel V. L. Gonzalez, BS: My study focuses on the consequences of exposure to a water disinfection byproduct (DBP), iodoacetic acid (IAA), on the hypothalamus and pituitary and, more specifically, on their roles in regulating reproduction. DBPs result from unintended reactions between chemicals used to disinfect water, such as are used in public water treatment plants, and substances present in the water. There is epidemiological evidence linking exposure to these byproducts with specific reproductive dysfunction, and prior in vitro rodent data show they can be cyto- and genotoxic in ovarian-derived cells, as well as can disrupt ovarian folliculogenesis and estradiol synthesis. These findings point to the potential for IAA to act as a reproductive toxicant. Despite the hypothalamus and pituitary being important components of reproductive regulation, there was previously very little information about how IAA would affect these tissues. We aimed to address that gap with our study.

Leticia M. de Souza Cordeiro, PhD: Our recently published research indicated that renal GLUT2, a major glucose transporter involved in glucose reabsorption, could be a potential target to treat diabetes by elevating glycosuria (De Souza Cordeiro, et al., *Diabetologia*, 2021). Based on these exciting data, we generated a new mouse model with loss of function of kidney-specific GLUT2 to unravel the role of this glucose transporter in systemic glucose homeostasis. The kidney-specific Glut2 KO mice exhibited massive glycosuria and improved glucose tolerance. Moreover, SGLT2 inhibition further increased glycosuria and improved glycemia in the kidney-specific Glut2 KO mice. In summary, our research indicates that blocking renal GLUT2 may reverse hyperglycemia in diabetes.

EN: What inspired you to undertake this specific research?

Lechner: Immune checkpoint inhibitor therapy has revolutionized the treatment of advanced cancers and is now first line for metastatic renal, bladder, head and neck, liver, and certain lung, colon, and breast cancers. However, the use and benefits of checkpoint inhibitors are limited by the frequent development of autoimmune toxicities in up to 60% of patients treated with combination anti-PD-1 and anti-CTLA-4 therapy and nearly 30% of patients treated with monotherapy. Endocrine organs are one of the most common tissues affected by these toxicities, termed immune related adverse events (iRAE) and lead to permanent organ dysfunction, interruptions in cancer treatment, and hospitalizations. Despite significant efforts to date, the cause of IrAE remains unknown. To design next generation immunotherapies with less toxicity but preserved anti-tumor effects, we must determine the cause of IrAE.

Chiang: Part of my clinical work has been with male veterans at the San Francisco VA Medical Center. In our clinical practice, we often encounter older males with osteoporosis who have sustained fragility fractures which are associated with increased morbidity and mortality. Osteoporosis in older males is often under-recognized and under-treated. We hope to improve the screening and treatment of osteoporosis in older men.

Foss de Freitas: My inspiration for this project was the possibility of being able to help bring some therapeutic alternatives for patients with FPLD. Conducting studies in rare diseases is not always easy; the difficulties arise from the

recruitment of affected individuals and clear delineation of possible side effects, as the natural history of the disease is not always completely known. However, it is always very rewarding and stimulating since new knowledge remains to be discovered.

Gonzalez: My university has a very active and collaborative environment for toxicology research, and thanks to pioneering work from faculty here, we had a strong foundation to build from in trying to address this question. DBP exposure is understudied, yet highly relevant to the general public. Since the majority of citizens, at least in the U.S., get their water from a public supply, the risk of exposure is high. Given evidence DBPs may be harmful to health, we wanted to better understand the consequences of exposure at a basic science level and contribute to a body of research that could inform regulatory and personal health decisions about minimizing and mitigating risks. This topic was especially compelling to me because I am passionate about research that considers the biological underpinnings of health contexts and ultimately, my hope is that pursuing such research can lead to improvements in human health.

de Souza Cordeiro: My family has a history of diabetes and, as a nutritionist, I had the opportunity to consult a lot of patients with diabetes. My goal was always to help them to achieve the best control of blood glucose levels. However, I often saw the difficulty of regulating glucose levels. Therefore, I started reading articles in this specific research area, and I became more passionate about better understanding how molecular mechanisms are involved in the control of glucose homeostasis.

EN: How did it feel to present your work in a virtual environment?

Lechner: I was grateful to be able to present my work at the Endocrine Society meeting despite ongoing travel restrictions and infection concerns with SARS-CoV2. I look forward to a return to in-person meetings in the coming year.

Chiang: It was a novel experience that demonstrates the ability of the Endocrine Society to adapt in this pandemic. I've learned quite a bit how to prepare and practice a talk using Zoom, how to engage an audience without having live feedback, and how to best utilize audio/video to share our research.

Foss de Freitas: Presenting in a virtual environment was very challenging because you cannot see how people are receiving

RISING STARS CLASS OF 2021

Here are all the participants who presented their research at the debut of the Rising Stars Power Talk at **ENDO 2021**.

Duaa Abdallah, MBBS University of Nebraska Medical Center, Omaha, Neb.

Sydney Chang, MD Zucker School of Medicine at Hofstra/Northwell, New York, N.Y.

Maria Chang Villacreses, MD City of Hope National Medical Center, Duarte, Calif.

Janet Chiang, MD University of California, San Francisco; San Francisco Veterans Affairs Health Care System, San Francisco, Calif.

> Leticia M. de Souza Cordeiro, PhD University of Rochester, Rochester, N.Y.

Angela E. Dean, MS University of Illinois at Urbana-Champaign, Urbana, III.

Mercedes del Río-Moreno, PhD University of Illinois at Chicago; Jesse Brown Veterans Affairs Medical Center, Chicago, III.

Maria Cristina Foss de Freitas, MD, PhD University of Michigan, Ann Arbor, Mich.

Melissa G. Lechner, MD, PhD UCLA Geffen School of Medicine, Los Angeles, Calif.

Rachel V. L. Gonzalez, BS University of Illinois at Urbana-Champaign, Urbana, III.

Patricia Costa Henriques, MD Federal University of Minas Gerais, Belo Horizonte, Brazil

> Sonam Kumari, PhD National Institutes of Health, Bethesda, Md.

Yuta Tezuka, MD, PhD University of Michigan, Ann Arbor, Mich.

Tansit Saengkaew, MD William Harvey Research Institute, Queen Mary University of London, London, UK

Åse Bjorvatn Sævik, MD University of Bergen, Bergen, Norway

your message, and there is always the risk of having some technical problem. However, the organizers of the session were very friendly and helped make the presenters comfortable. Definitely, the hardest thing was making a 27-week study fit in a three-minute presentation.

Gonzalez: There were, of course, downsides; I miss meeting researchers in person and being able to have a dialogue with them about our work. During a non-virtual meeting, I may have been able to speak with someone who heard the talk afterwards, provide them more information, and hear their ideas and recommendations about the future of the project in a more naturalistic way. Plus, it is just nice from a social



At ENDO 2021, everything was virtual for the first time, even the debut of the Rising Stars Power Talks.

perspective; I missed out on spending time with my friends and science role models. However, there were also upsides. I found my nerves weren't quite as high as speaking in person because, in some ways, it was a lot like speaking I do more regularly, such as during a lab meeting or at a seminar for my program. Additionally, it was really helpful to be able to type answers to questions for which there wasn't time during the Q and A portion. Overall, I am glad in-person meetings are on the horizon, but I'm also grateful for the benefits the virtual environment provided.

de Souza Cordeiro: I felt excited and honored by the opportunity to present our research at **ENDO 2021** and show the clinical relevance of renal GLUT2 as a potential target to treat diabetes. It was my first experience presenting at a virtual conference and to be able to share this research with others during this difficult time was very special for me.

EN: What's next for you and your research? Where do you go from here?

Lechner: Over the next year, we will continue our research into the cause of endocrine IrAE in patients treated with checkpoint inhibitor therapy. This includes ongoing clinical trials at UCLA and our partner institution USC in patients and preclinical trials evaluating inhibitors of IrAE in the setting of ICI treatment in tumor models.

Chiang: We are interested in expanding our research to further explore the proportion of men who have fragile bone with normal or osteopenic bone density and low FRAX score. We would like to learn more about the clinical characteristics of these men, learn if they respond better to certain osteoporosis therapeutics, and learn if we can better prevent hip fractures in this population.

Foss de Freitas: The first step is to publish our data, and this is on the way. Second, we are planning on jumping in deeper and understanding the mechanism involved in the results we observed. After that, we expect that the new findings will open new avenues.

Gonzalez: The presented research is in the final stages of preparation to be submitted for publication. We intend to continue to pursue this topic, including looking at additional contexts for IAA exposure such as during development. There are also a number of mechanistic unknowns when it comes to IAA's influence that would be really interesting to better understand. Personally, I am in the end stages of my PhD and hope to defend in the coming months. After that, I plan to continue on to a postdoctoral position, though at this exact moment I am not certain where that will be!

de Souza Cordeiro: My career goal is to become an established researcher at a renowned research-intensive institution in the U.S. in the field of diabetes and obesity. For our research, the future goal is to use kidney-targeted carriers, such as (KKEEE)3K peptide, to deliver GLUT2 inhibitors specifically to the kidneys without affecting the transporter in other tissues and thereby minimizing side effects. This approach will significantly enhance the specificity and efficacy of blocking kidney-specific GLUT2 to treat diabetes.

This event was made possible with support from Radius Health, Inc., and Strongbridge Biopharma.

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BY DEREK BAGLEY



Joy Y. Wu, MD, PhD, of Stanford University

A B RELOCATION DURING A PANDEMIC

Moving is always stressful. Just imagine factoring in social distancing protocols, adhering to California's earthquake safety standards, and pausing your research to get it done. Joy Y. Wu, MD, PhD, talks to *Endocrine News* about moving her research lab at Stanford University under less-than-ideal circumstances and how she and her team got it done with a lot of perseverance, patience, and Post-it Notes!

 \mathbf{E} arly this year, the Joy Wu Lab at Stanford University got an upgrade when it moved to a new location — an opportunity for Wu and her colleagues to gain some more space for their lab, but more importantly, to co-locate with several other physician-scientist labs within Stanford's Department of Medicine.

Interestingly, the Joy Wu lab moved into facilities with a bit of a checkered history. The building is the former headquarters of Theranos — the company that claimed it could rapidly perform tests on very tiny amounts of blood, founded by Elizabeth Holmes. The company's claims were later found to be based on fraud, and Theranos's downfall was chronicled by John Carreyrou in the *Wall Street Journal* and later in his book Bad *Blood: Secrets and Lies in a Silicon Valley Startup*.

When Theranos collapsed, Stanford's School of Medicine took over the lease for the building and renovated it to house research labs. Joy Y. Wu, MD, PhD, vice chair, Basic and Translational Science, Department of Medicine, at Stanford University School of Medicine, Stanford, Calif., says she's optimistic that now a lot of amazing research is going to be accomplished in a building with a regrettable history. "But I







Everything in its right place: From sample bottles to lab equipment, each item is tagged and labeled so it gets to its proper destination.





The Joy Wu Lab's new facilities are in the former headquarters of Theranos, a building with a regrettable history, and now a place to foster some incredible research.

think it's important not to forget the history and what happens when you abandon scientific integrity," she says. "In fact, I gave a copy of *Bad Blood* to every lab member when we moved."

Impact on Research

Even though this is the fourth time the lab has moved at Stanford, Wu says it still took a lot of advanced planning, from laying out the floor plan to accommodate all the large pieces of equipment down to making sure the outlets are compatible. "Here in California, we have to also think about how and where we're going to seismically brace all our equipment," she says.

Wu says that as a group, her team agreed on how they wanted to lay out the lab equipment in the new space. "For example, we have a station for [polymerase chain reaction (PCR)]," she says. "We have another station for running gels, and then we use a lot of Post-it Notes in the process. Every piece of



Moving a laboratory is more complicated than just moving furniture from one space to another. Here are a few tips from lab relocation experts about what you need to do once the moving vans leave.

- Schedule time to unpack and ensure packing materials are removed promptly. The time required depends on the complexity and the scale of the move.
- Check equipment positioning. This involves more than physical fit or workflow optimization.
 Depending on the instrument, thermal heat from windows, or the cycling of heating or cooling vents may affect its performance.
- Place temperature monitoring systems on freezers and refrigerators, as well as for lab specimens waiting for those coolers to reach proper temperatures.
- Ensure vendors are on-hand to connect, recalibrate, and certify that equipment is operating optimally. This often requires coordinating with multiple vendors even when your logistics company has multivendor engineers on site.

- SOURCE: LAB MANAGER, MARCH 2021, VOL. 16 - ISSUE 2. "LAB RELOCATION: WHAT TO DO THE DAY AFTER THE MOVE" BY GAIL DUTTON



The new facilities provide the space to do some important work at the bench, as well as gather with fellow researchers in the common areas.

> Funding and staffing have been particularly challenging during this time. I think for the moment, the focus is very rightly on ending the pandemic and its devastation. But looking forward in the months and years to come, I think a lot of scientists are going to need help getting their careers back on track."

> > — JOY WU, MD, PHD, VICE CHAIR, BASIC AND TRANSLATIONAL SCIENCE, DEPARTMENT OF MEDICINE, STANFORD UNIVERSITY SCHOOL OF MEDICINE, STANFORD, CALIF.

equipment is tagged and gets a label for its destination. And then in the new space, we have Post-it Notes ahead of the move showing where everything is going to go."

Wu tells *Endocrine News* that there are a lot of things that have to happen to be able to start up in a new space, from certifying biosafety cabinets and hooking up incubators to CO2 and ordering liquid nitrogen tanks to thinking about things like whether the water purification system is up and running and cleaning and decommissioning the old space. "This time, we did not have to move our mouse colony, thank goodness," she says. "But when we have, that's another whole set of details that requires a lot of coordination with the veterinary staff."



(top) While in the midst of packing up the lab for the move, Wu questioned some of the decisions she made when starting her lab, namely, the need for so many three-corner beakers. (bottom) Researchers Hui Zhu, PhD (left) and Srilatha Swami, PhD, (seated), who did a huge share of the packing and unpacking in the lab move, according to Wu.



Even though there were no mice to relocate, Wu says the timing of the move did cost her team research time. They were slated to move a few weeks after a prolonged winter break, so they didn't try to reopen their lab in between the break and the move. "By the time we moved in and got everything set up, we were shut down for almost two months, so it was pretty costly in terms of productivity time," she says.

Raising the Stakes

The COVID-19 pandemic made the move even more stressful, Wu says, since all the people involved can make it difficult to safely distance. "There's just, in general, a lot more interaction with people because you have the movers, you have the inspectors, you have everybody coming by," she says. "It feels like it can raise the stakes a little bit."

Wu goes on to say that the pandemic has been difficult for researchers in general, and her lab is no exception. She says that the data are clear that women in academia have been disproportionately affected and that action will be needed to avoid a major setback. "Funding and staffing have been particularly challenging during this time," Wu says. "For the moment, the focus is very rightly on ending the pandemic itself and its devastation. But looking forward in the months and years to come, I think a lot of scientists are going to need help getting their careers back on track."

Trading Spaces

For now, Wu and her team are still under pandemic restrictions, so they're working from home as much as possible. However, when the restrictions lift, Wu says she's looking forward to gathering with her colleagues and lab members in some of the building's stunning common spaces. "There's also a very nice gym and yoga studio that I'm eager to use when we are allowed to," she says.

Once the lab is fully up and running, Wu says that she's thrilled at the prospect of broadening her laboratory's work studying bone biology and its impact on health in their new digs. "We're trying to figure out how to coax bone-forming osteoblasts into making more or stronger bones as an approach to treating osteoporosis," she says. "We've also been working for a few years on how to prevent bone metastases, for example, in breast cancer. As a breast cancer survivor myself, this is a very personally meaningful area. We now have some philanthropic funding, and we're really excited about the possibilities of expanding this work in our new space."

- BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE MARCH ISSUE, HE WROTE ABOUT THE **ENDO** 2021 SESSION, "TRANSGENDER CARE: A COMPREHENSIVE ASSESSMENT FOR A MULTI-FACETED CONDITION."



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Paying It Forward: A Legacy of Mentorship



From segregated Alabama to a celebrated career, James R. Gavin, III, MD, PhD, the Endocrine Society's 2021 Outstanding Mentor Laureate Award recipient, talks to *Endocrine News* about the importance of mentoring and how it can make a difference for generations of others.

n a career journey that began in segregated Alabama, James R. Gavin, III, MD, PhD, says he credits the many people "who were willing to invest in me during times when the broader community offered indifference or discouragement." Gavin thus made the commitment to "reach back" and do the same for others, and as recipient of the 2021 Laureate Outstanding Mentor Award, is recognized for impacting the lives of hundreds of minority physician-scientists.

Gavin is a clinical professor of medicine at the Emory University School of Medicine in Atlanta, Ga., and chief medical officer of Healing Our Village,

BY GLENDA FAUNTLEROY SHAW



a corporation that specializes in targeted education, disease management, and outreach for healthcare professionals and minority communities.

He has served as a direct mentor to more than 50 early-stage physicianscientists, and through his leadership of both the Howard Hughes Medical Institute-National Institutes of Health Medical Research Scholars Program and the Robert Wood Johnson Foundation (RWJF) Harold Amos Medical Faculty Development Program continues his promise to return the investment others made on him years ago.

Endocrine News asked Gavin more about why sharing his time and wisdom is such a major part of his career mission.

Endocrine News: What does the recognition as an Outstanding Mentor mean to you?

James R. Gavin: Upon hearing the news, I was at once humbled and exhilarated. It was an affirmation that someone felt that I had a sufficiently meaningful impact on their life and career development that they wanted the broader community to both know about and celebrate it. I was humbled that there were persons who felt strongly enough about this that they engaged the process of putting forth a formal nomination in a competition like this. My exhilaration stemmed from the fact that to be acknowledged as a mentor is truly a real honor. It means that you have been recognized for more than the offer of advice and guidance, as more than a counselor or even a coach.

All of these are important and meaningful roles. But these roles are by their very nature and timing transient or temporary. Not so for the mentor. The mentor's engagement and caring are more long term, more resilient. In fact, it has been said that the mentor does not truly rest until the mentee is successful! For me, to know that persons in whose lives and careers I have had the opportunity to interact in substantive ways have accorded such sentiments to me, leads me to be thrilled and excited.

EN: What motivates you to mentor young physician-scientists, and how impactful were mentors to you early in your career?

66 One of the most satisfying issues that I now encounter is to engage the mentees of my mentees. It is a delight to witness the emergence of the next generation of scholars and to see that those I have had the chance to mentor are, like me, following suit and repeating the behavior of mentorship."

66 I was blessed to have many wonderful and committed people care for me and who were willing to invest in me during times when the broader community offered indifference or discouragement. Indeed, some of us are blessed to have more than one mentor in the course of our career development."

Gavin: My academic and career journey that led from the segregated South in Mobile, Ala., to being the first African American terminal degree recipient in basic health sciences at Emory University in 1970, to having a paper from work done at the National Institue of Health (NIH) designated a "citation classic" before age 30, to becoming the first African American president of the American Diabetes Association, and having a portrait in the National Academy of Medicine, to name a few among many wonderful honors and tributes, all derive from the fruits of mentorship.

I was blessed to have many wonderful and committed people care for me and who were willing to invest in me during times when the broader community offered indifference or discouragement. Indeed, some of us are blessed to have more than one mentor in the course of our career development.

In many ways, I have looked upon the investment made in me as the incurrence of a debt that demands I do no less for someone else when given the opportunity. I have been afforded the opportunity to partially repay the debt I owe to mentors like Rev. Edgar N. French, Sr., of Livingstone College, Dr. Leo E. Reichert, Jr., of Emory University, who continues to be a close and valued colleague to this day, as well as to Drs. Jesse Roth and Phillip Gorden of the NIH (it seems fitting that Dr. Gorden is a richly deserving LaureateAward winner this year as well). [Editor's Note: Phillip Gorden, MD, is the recipient of the 2021 Fred Conrad Koch Lifetime Achievement Award. See page 33.]

EN: In a time when the number of medical school applications for minorities, especially Black men and women, has been stagnant for several decades, what do you see as the major goal for increasing the diversity and training more physicians of color?

Gavin: The major goal in my view is to break through the stagnation and inertia we have seen in the numbers of medical school applicants and in the numbers of minority students pursuing careers in science and medical research. The challenge is to interrupt the early barriers that continue to discourage and divert promising minority students, especially males, away from a focus on STEM curricula, and which fail to engage curiosity about the kinds of questions that lead to the pursuit of investigation and discovery.

One of the most satisfying issues that I now encounter is to engage the mentees of my mentees. It is a delight to witness the emergence of the next generation of scholars, and to see that those I have had the chance to mentor are, like me, following suit and repeating the behavior of mentorship. This is the type of commitment and energy that we constantly encourage to have a community outreach and "reach-back" dimension. It is so important that our young, emerging leaders extend assistance to promote oncoming young scholars who need inspiration, guidance, and support.

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

NAVIGATING AN ADRENOCORTICAL CARCINOMA DIAGNOSIS



GLANDS

CORTEX

Adrenal glands produce hormones. The inner adrenal medulla make catecholamines (noradrenaline and adrenaline) and the outer adrenal cortex make steroid hormones that regulate salt (MINERALocorticoids or aldosterone) sugar (GLUCOcorticoid or cortisol) and sex hormones (androgen or DHEAS). Adrenocortical Carcinoma (ACC) is a term specifically referring to a cancer of the adrenal cortex.

HORMONES

Approximately 50% of ACCs produce excessive symptomatic steroid hormones, or more than normal. In these cases, signs or symptoms of hormone excess will be present.

May also experience worsening high blood pressure, diabetes, weight gain, menstrual irregularities, hirsutism, or erectile dysfunction.

ACC is also associated with an inherited cancer syndrome requiring genetic testing and counseling.

DIAGNOSIS

Adrenocortical carcinoma (ACC) is rare. It is a malignant tumor, meaning it has the potential to spread (metastasize) to other organs in the body.

In more than 50% of cases, ACC is diagnosed by chance during imaging studies for other reasons.

Alternatively, the diagnosis is made during evaluation for potential hormone excess.

SYMPTOMS

The symptoms of ACC may vary depending on the extent of the disease (size and metastasis) and hormone excess.

- Asymptomatic: without symptoms
- Rarely abdominal discomfort associated with tumor "burden weight"
- Hormone excess: high blood pressure, diabetes, weight gain, menstrual irregularities, hirsutism, and/or libidinal/ erectile dysfunction

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TREATMENT OPTIONS

Π

Treatment varies based on the stage.

LOCAL OPTIONS

- Surgery
- Radiation therapy
- Radiofrequency ablation

SYSTEMIC OPTIONS

- Mitotane
- Chemotherapy
- Emerging target agents

ASSEMBLE YOUR HEALTH CARE TEAM!

ACC requires treatment from a multidisciplinary team of providers with high levels of expertise. This may include an endocrinologist, adrenal surgeon, radiation oncologist, endocrine pathologist, cancer geneticist, and a medical oncologist.

WHAT CAN I EXPECT

Your healthcare provider will request several follow-up visits to monitor how well the treatments are working.



THE STAGE OF ACC INFLUENCES THE MOST APPROPRIATE THERAPY FOR CARE

Stage 1 Tumors: smaller than 5 cm and have not affected lymph nodes or other parts of the body

Stage 2 Tumors: larger than 5 cm and have not affected lymph nodes or other parts of the body

Stage 3 Tumors: any size that has spread to surrounding tissue, but have not affected lymph nodes or other parts of the body

Stage 4 Tumors: metastatic and has spread outside the adrenal glands to other organs and tissue

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Editors: Irina Bancos, MD, Fady Hannah-Shmouni, MD, FRCPC, and Gary Hammer, MD, PhD





ADVOCACY

Endocrine Society Members Advocate for Increased Federal Funding for Research

> Virtual advocacy for increased NIH funding: (top) Endocrine Society member Lori Raetzman and Endocrine Society director of advocacy Rob Goldsmith meet with Rep. Rodney Davis (R-IL) and his staff while Society member (bottom) Kayla-Titiallii-Torres and Society staff member Grace Kranstover meet with Rep. Andy Barr (R-KY) and his staff.



n March 16, the Endocrine Society conducted a "virtual" Research Hill Day where Endocrine Society members from across the U.S. met with their congressional representatives and their staffs through Zoom, Skype, conference lines, and other electronic meeting platforms while the Capitol complex is closed for the pandemic and security reasons.

During these meetings, Endocrine Society members urged Congress to provide an increase of \$3.2 billion for the National Institutes of Health (NIH) in fiscal year (FY) 2022, resulting in a total of \$46.1 billion. Members discussed the importance of steady sustained increased funding for the NIH and the positive impact federal funding has on research discoveries in their own districts and states.

Society members also advocated for an additional \$10 billion in supplemental emergency research funding for the NIH to support new COVID-19 research priorities and to assist researchers whose labs and work were impacted by the pandemic. COVID-19 has forced laboratory and institutional closures that have complicated or prevented research from continuing during the pandemic. As labs have reopened, additional costs and other barriers have further stretched grant budgets. Supplemental funds are still needed to restart research programs, support early-stage investigators who have lost valuable training opportunities due to the pandemic, provide support so critical research staff can be retained, and address increasing research costs. Endocrine





Society members were able to give firsthand accounts of the effects the pandemic has had on their own research and directly make the case for additional emergency support.

In addition to our funding requests for the NIH, we talked with congressional offices about the value of endocrine research and asked them to include language in the accompanying report to the final appropriations bill encouraging cross-NIH collaboration to support research that studies how sex as a biological variable (SABV) impacts short- and longterm outcomes of COVID-19. We developed this language to call attention to research showing that sex and gender differences can affect the severity and duration of disease due to COVID-19 infection and to encourage current and future studies to take these differences into account.

Recently, the Endocrine Society co-hosted a congressional briefing with the Society for Women's Health Research on

ADVOCACY

the NIH's SABV policy "Women's Health Research: Understanding the Roles of Sex and Gender" (recording available at: https://bit. ly/3saaleR) to commemorate the five-year anniversary of the NIH's policy requiring investigators to account for SABV in research studies

> **66** Endocrine Society members were able to give first-hand accounts of the effects the pandemic has had on their own research and directly make the case for additional emergency support.



and to identify further questions on how exactly biological sex and gender influence COVID-19 outcomes.

As Congress continues to deliberate on FY2022 appropriations, we will continue to engage with lawmakers to advocate for research funding and the value of endocrine research. Endocrine Society members who were unable to participate in our virtual Hill Day but still want to support research funding can do so by joining our online campaign at: endocrine.org/takeaction. Our software will provide you with an email message that you can personalize and will direct the message to your representative and senators' offices.



Society Releases "Obesity Playbook" Guide for Congress

n coordination with Obesity Care Week during the first week of March, the Endocrine Society released an "Obesity Playbook" educational resource for members of Congress and their staffs.

The playbook provides "go to" information to congressional offices about obesity and health. Obesity continues to be very common in the U.S. with approximately 42.4% of adults and 19.3% of children having obesity. The COVID-19 pandemic also puts people with obesity at additional risk because they are more likely to be hospitalized and placed in intensive care if they get the virus. Given the importance of this critical issue, the Society wanted to share its resources with congressional offices, particularly the new offices and their staffs who may be looking for educational materials on this topic.

The Playbook provides an array of information including stateby-state prevalence data on obesity, information about the cost burden of obesity, the impacts of obesity on other chronic diseases, and the connection between obesity and COVID-19.

"



The Playbook provides an array of information including state-by-state prevalence data on obesity, information about the cost burden of obesity, the impacts of obesity on other chronic diseases, and the connection between obesity and COVID-19. The Playbook highlights the Society's scientific statements and journal articles on this topic. It also includes policy options for congressional offices to consider, recently introduced legislation addressing obesity, and a list of offices and initiatives within the federal government that address obesity. Finally, the Playbook includes a list of Endocrine Society members who are experts on obesity.

The Playbook has received a positive response from congressional offices and sets up the opportunity for additional dialogue with members and staff during the 117th Congress. Later this year, the Society is planning to host a congressional briefing on obesity.

Biden Signs \$1.9 Trillion COVID-19 Rescue Plan Act into Law

Congress Begins Work on Second Relief Bill Aimed at Public Health Recovery



President Joe Biden signed the \$1.9 trillion COVID-19 aid package known as the "American Rescue Plan Act of 2021" into law March 11, one year to the day that the pandemic forced the U.S. economy to largely shut down.

The legislation focuses on economic assistance and includes \$1,400 direct payments to millions of U.S. households, an extension of enhanced unemployment benefits, aid to state and local governments and school systems, nutrition and rental assistance, money for restaurants, airlines, transit agencies, and more. This legislation is an important step in addressing the economic impacts of the pandemic; however, Democrats in Congress are now beginning to consider developing another large COVID-19 relief measure focused on recovery. This provides an opportunity for the Endocrine Society to work with Congress and the Biden administration on measures to provide supplemental funding to the National Institutes of Health, expand telehealth, and address health disparities.





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Bedside Manners T

Endocrine News talks to 2021 Vigersky Outstanding Clinical Practitioner Laureate Award recipient, Frances Hayes, MBBCh, who discusses her award, standards for the best patient care, and the challenges she faced treating patients in 2020. he familiar term is "bedside manner." Having a good bedside manner often describes physicians whose medical skills are coupled with strong personal connections, respect, and caring for every patient. This couldn't be truer of Frances Hayes, MB BCh, recipient of the 2021 Laureate Outstanding Clinical Practitioner Award.

Hayes has been recognized throughout her career for outstanding contributions to the endocrine community and the personal care she provides her patients. As the associate clinic chief of endocrinology at Massachusetts General Hospital in Boston, Mass., Hayes has been instrumental in establishing several multidisciplinary clinics for patients with Turner syndrome, Klinefelter syndrome, and the transgender population.

BY GLENDA FAUNTLEROY SHAW

Endocrine News spoke with Hayes to learn more about her continued aim to create the best patient experience.

Endocrine News: What did news of the Outstanding Clinical Practitioner Award mean to you?

Frances Hayes: When I got the phone call, I felt honored, surprised, and delighted. Once I'd had the opportunity to review the list of previous recipients, I realized what a real privilege it is to join such an illustrious group. I was also very grateful to my nominators, Bill Crowley and Hank Kronenberg, themselves exceptional physicians and role models. Bill has been an extraordinarily supportive mentor to me and critical to any success I have achieved.

EN: What do you think makes for an excellent clinician?

Hayes: In my opinion, an excellent clinician is someone who is passionate about taking care of patients and has the knowledge, experience, and judgement to do so at the highest level. This means approaching a patient encounter with the same rigor and commitment to excellence as the basic scientist devising their next experiment or the clinician teacher preparing a lecture. I was fortunate to have been exposed to some truly outstanding clinicians early in my career, especially my mentor in Dublin, Joe McKenna. From Joe, I learned that being given the opportunity to take care of patients is not only a privilege and responsibility but also an immensely satisfying career.

EN: What's most important for you to know when a patient leaves your office that he/she feels satisfied?

Hayes: I hope that any patient leaving my office feels that they have received my undivided attention and respect, that their questions have been answered to the best of my knowledge, and that they have confidence in our mutually agreed plan of action. I would also like them to leave with the reassurance that they were viewed not just as another patient with PCOS or hypogonadism but as an individual with their own unique story and needs.



66 I think it's also very important for patients to feel that I am their advocate and that I am prepared to go to bat for them so that if their insurance turns down the initial submission for prior authorization for a drug, that I will be ready to write that letter of appeal."

> - FRANCES HAYES, MBBCH, ASSOCIATE CLINIC CHIEF OF ENDOCRINOLOGY, MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.

An excellent clinician is someone who is passionate about taking care of patients and has the knowledge, experience, and judgement to do so at the highest level.
This means approaching a patient encounter with the same rigor and commitment to excellence as the basic scientist devising their next experiment or the clinician teacher preparing a lecture."

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EN: I know 2020 was a challenging year in healthcare. What are you looking forward to for 2021?

Hayes: It certainly [was] a challenging year. Endocrinology is largely an ambulatory specialty, so in March and April, we had to make a complete transition from in-person care to telehealth, which was a huge challenge. But our division was one of the top providers of telehealth within our hospital, so it was very gratifying to see how everyone got on board so quickly.

Going forward, we know COVID-19 is not going to go away for the foreseeable future, even with vaccination, so we have to try and make sure that our patients stay engaged through virtual visits. I enjoyed [ENDO 2021] in March, and having the opportunity to connect, albeit virtually, with the many friends and colleagues that I only get to see at the meeting. Hopefully, by summer, we will begin to see some semblance of return to normality. The opportunity to have dinner with a group of friends outside my "bubble" would be wonderful!

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

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