

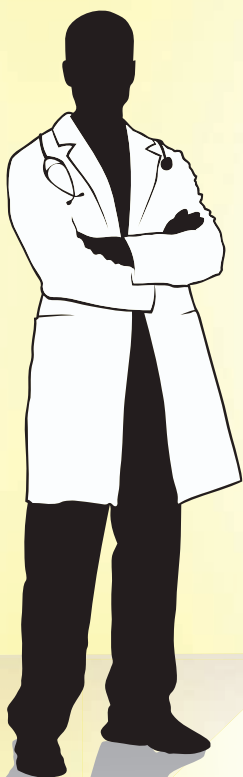
MARCH 2015

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

ENDOCRINETMnews

WHY ENDOCRINOLOGY?

We asked a variety of your colleagues why they chose endocrinology as a career. Their answers are thoughtful, enlightening, revealing, and even heartwarming.



DOUBLE JEOPARDY:
Links Between Breast Cancer & Obesity

2015 LAUREATE AWARDS:
The Latest Endocrine Society Award Recipients

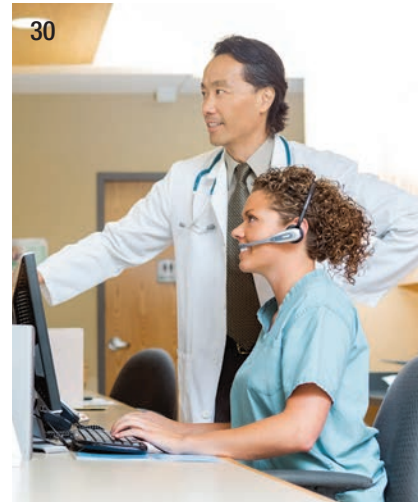
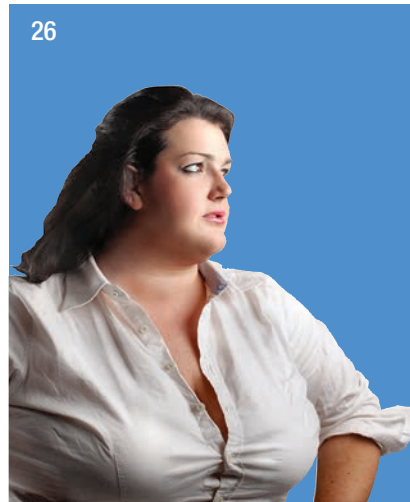
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Why Endocrinology? *By Mark A. Newman*
 The field of endocrinology is vast. *Endocrine News* talked to a cross section of Endocrine Society members and asked them, “What made you choose endocrinology?” From Society past-presidents, to veteran physicians, to young researchers just starting their careers, find out why your colleagues chose to go down the same path you did.
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A Record-Breaking Year of Accomplishments



Richard J. Santen, MD

As I write my last presidential letter, a few personal thoughts are appropriate here. I would like to begin by saying that it has been an honor to serve as the Endocrine Society's president this past year. For me, it has been a highlight of my career and a true pleasure to work with such outstanding colleagues and highly talented staff. The breadth and depth of the Society's activities create challenges that enrich one's experience. A focus on the Society's accomplishments over this past year highlights how truly impressive they have been. Now is clearly the appropriate time to focus on some of them.

enrich one's experience. A focus on the Society's accomplishments over this past year highlights how truly impressive they have been. Now is clearly the appropriate time to focus on some of them.

Record-Breaking Areas

The Society's membership exceeded 18,000 this year, attesting to the value that endocrinologists place on the excellent products and services that the Society provides to its diverse membership. Last June, we hosted the International Congress of Endocrinology in conjunction with ENDO in Chicago, which resulted in setting records in all aspects of the meeting. Coverage of the *Journal of Clinical Endocrinology & Metabolism*, *Endocrine Reviews*, and *Endocrinology* in 2014 included 5,135 news stories from top media outlets, surpassing the record-breaking numbers from the previous year. **ICE/ENDO 2014** was attended by more than 60 reporters, both on site and virtually. The Society hosted five news conferences and disseminated 50 news releases during the four-day meeting.

ENDO and Educational Programs

As you know, 2015 is the first year that ENDO will be held in March and as you can imagine, this has considerably compressed the timeline for planning and coordinating the Annual Meeting. Nevertheless, the Annual Meeting Steering Committee (AMSC) chairs Mathew Ringel (overall chair), Sue Moenter (basic chair), Marc-Andre Cornier (clinical science chair), and Carol Wysham (physician-in-practice chair) working closely together with staff, have developed an outstanding scientific program in record time. Other educational programs include the Type 1 Diabetes Fellows Program and the new Obesity Management Workshop, which are being presented at ENDO. The Prenatal Programming and Toxicity workshop was held in Boston earlier this year. Endocrine Essentials Live, a series of five regional educational meetings, was highly popular this fall. New products launched this year include ESAP-ITE and ESAP-Live, a new series of case review sessions throughout ENDO.

The Society has been involved in meetings and ongoing discussions with the American Board of Internal Medicine (ABIM) regarding concerns about Maintenance of Certification (MOC) issues. Our voice was

clearly heard. ABIM recently sent a memo indicating that ABIM's Board of Directors and staff leadership have listened and believe that their organization must be responsive to the concerns raised by practicing physicians and medical societies. The changes largely address the concerns voiced by the Society in July and detailed in an e-mail sent on February 4 to our members.

On the patient education side, the Hormone Health Network has revisited and re-launched its Menopause Map and developed an impressive list of educational materials and programs. The Network expanded its web and social media presence, all of which has considerably increased traffic to its website. Relationships have been developed with several patient advocacy groups, which will help the Network develop more distribution channels for its resources.

Advocacy and Policy

In September, we hosted a Diabetes Policy Summit, featuring talks from key officials at CDC, the Department of Health and Human Services, the U.S. Food and Drug Administration (FDA), and the National Institute of Diabetes and Digestive and Kidney Diseases on the current clinical, economic, and political landscape and ways in which the healthcare community can innovate change to reduce the burden of diabetes in America.

This past year we established the first Clinician's Hill Day, to complement the existing Hill Days that were focused on basic and clinical research. We influenced The National Institutes of Health and FDA policies concerning the inclusion of female subjects in all aspects of research in order to identify important sex differences. Last fall we scheduled working sessions with all the major NIH Institutes.

Our work in EDC's has positioned the Society as a global policy leader. In addition to the spring EU Parliament meetings and EU "Hill Day," in November the Society sponsored a briefing on EDCs for members of the European Parliament and their staff. In December, we held our first-ever media event in the EU, a Science Writers Conference on EDCs in Brussels.

International Outreach

As I mentioned in last month's letter, our international outreach efforts have expanded considerably in recent years. The year began with the International Clinical Update program in Endocrinology (ICUE) held in February in India, which was a collaborative effort between the Endocrine Society of India (ESI), International Society of Endocrinology (ISE), the Society for Endocrinology (UK), and the Endocrine Society. Also in February, we participated in the Emirates Diabetes and Endocrine Congress (EDEC) in partnership with the Emirates Diabetes Society. The three Highlights of ENDO meetings

this year, which were held in Korea, Brazil, and Argentina, were very successful. In August we had the 5th Endocrine Summit in India, and I was invited to speak at the Chinese Endocrine Society meeting as well. In October, we co-hosted the 2nd EndoBridge meeting held in conjunction with the Society of Metabolism and Endocrinology of Turkey and the European Society of Endocrinology. Several members represented the Society at the Egyptian Association of Endocrinology, Diabetes, and Atherosclerosis 19th Annual Meeting in Alexandria, Egypt. We ended the year with a "Frontiers in EDCs" symposium at the Mexican Endocrine Society Congress in Merida, Mexico, in December.

Publications

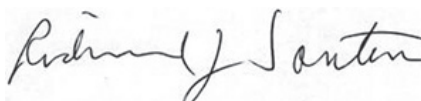
A major change this past year was the transition to an enhanced publications hosting platform to provide flexibility as we adapt to new dimensions of publishing. The integration of our journal content with the Society's website facilitates and optimizes your ability to search for needed information. Last year the Society published its first book, and this year two new books will be launching at ENDO. In order to position our publications for future growth and scientific impact, a working group has been established to review our publications strategy as a whole.

Next-Generation

As we look at the future of the field of endocrinology, we must look at opportunities to support and grow the next-generation. Our philosophy moving forward is to

keep the next-generation in mind as we develop new programs and services to support our members. This issue is critical to the vibrancy of our Society and our profession in the future. Leadership development at all stages of a member's career is and will continue to be one of the major focus areas in our horizon 3 planning model. The Trainee and Career Development Core Committee co-chairs have worked with the Next-Generation Task Force to discuss new strategies, opportunities, and enhancements that would support this group of members and is presenting its recommendations at the March Council meeting.

This is just a snapshot of the many accomplishments that we have achieved this year. I would like to thank our committee members for their time and commitment to the Society and our Council members for their thoughtful deliberations and for their dedication. I am very grateful to have served my term working closely with immediate past-president Teresa Woodruff and president-elect Lisa Fish, who have shared their wisdom and counsel throughout the year. And last but not least, the excellent Society staff who, working closely with our members, make it all happen. To them I express my sincere and deepest thanks and appreciation. **EN**



Richard J. Santen, MD
President, Endocrine Society

THE ENDOCRINE SOCIETY IS PLEASED TO ANNOUNCE THE

2015 LAUREATE AWARDS WINNERS

<p>FRED CONRAD KOCH LIFETIME ACHIEVEMENT AWARD Andrzej Bartke, PhD</p> <p>GERALD D. AURBACH AWARD FOR OUTSTANDING TRANSLATIONAL RESEARCH Robert M. Neer, MD</p> <p>INTERNATIONAL EXCELLENCE IN ENDOCRINOLOGY AWARD Susan R. Davis, MBBS, FRACP, PhD</p> <p>OUTSTANDING CLINICAL INVESTIGATOR AWARD Shalender Bhasin, MD</p> <p>OUTSTANDING CLINICAL PRACTITIONER Susan A. Sherman, MD</p> <p>OUTSTANDING EDUCATOR AWARD Anne M. Etgen, PhD</p> <p>OUTSTANDING INNOVATION AWARD Bert W. O'Malley, MD</p>	<p>OUTSTANDING LEADERSHIP IN ENDOCRINOLOGY AWARD Robert M. Carey, MD, MACP</p> <p>OUTSTANDING MENTOR AWARD Anne Klibanski, MD</p> <p>OUTSTANDING PUBLIC SERVICE AWARD Valeria Cunha Guimaraes, MD, PhD, FACE</p> <p>OUTSTANDING SCHOLARLY PHYSICIAN AWARD Douglas S. Ross, MD</p> <p>RICHARD E. WEITZMAN OUTSTANDING EARLY CAREER INVESTIGATOR AWARD Ajay Chawla, MD, PhD</p> <p>ROY O. GREEP AWARD FOR OUTSTANDING RESEARCH Gokhan S. Hotamisligil, MD, PhD</p> <p>SIDNEY H. INGBAR AWARD FOR DISTINGUISHED SERVICE Diane M. Robins, PhD</p>
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Awards will be presented at ENDO 2015: The 97th Annual Meeting & Expo in San Diego, CA | March 5 – 8, 2015.

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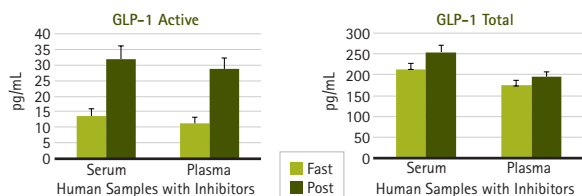
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MARCH 2015

ENDOCRINE NEWS

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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

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

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This month's issue is somewhat of a departure from what we typically cover in *Endocrine News*. In honor of ENDO 2015 being a bit early this year and so many thousands of you converging on San Diego for the annual conference, we thought we would use this issue to help you get to know some of your colleagues a little bit better.

First off, there's the cover story, "Why Endocrinology?" (p. 12), where I asked some of your colleagues why they chose this amazing, multi-faceted field. Many of the answers had similar themes, especially for those who were influenced by a mentor or found the study or practice of endocrinology utterly fascinating. I was fortunate in that I received comments from all across the vast spectrum of the Endocrine Society's membership in the U.S. as well as members from all over the world. From a scientist currently working toward his doctorate in the UK to one of the Society's past presidents, each of the interviewees has an interesting story to tell, all share one common theme: a passion for endocrinology. Syed Sufyan Hussain, PhD, from the Imperial College, in London, probably said it as well as anyone: "Endocrinology is a fascinating and challenging multi-dimensional specialty that opens the doors to an array of stimulating opportunities packaged into a family-friendly environment. So why would I choose anything else?"

Secondly, this issue is also prominently featuring the recipients of the Endocrine Society's 2015 Laureate Awards (p. 18). This is the first time that the awardees are being featured in the pages of *Endocrine News*, and we look at it as not only a tribute to these award recipients, but it also puts the magazine at the forefront since we are the first to report on these 14 worthy laureates. These people aren't just award recipients, they are legends in the field of endocrinology, and we are proud to be the first to herald them and their achievements to Society members as well as the public at large.

We also have an in-depth article on the links between obesity and breast cancer by Kelly Horvath. In "Double Jeopardy" (p. 26) Horvath talks to a number of researchers who have thoroughly studied the links between inflammation and dysregulated metabolism that induces a positive feed-on mechanism with aromatase-stimulating estrogen production, which, in turn, causes tumor proliferation. No doubt as obesity numbers see an increase so will the number of breast cancer diagnoses.

Hopefully this issue of *Endocrine News* not only will acquaint you with some of your colleagues, but also will inspire you by their stories. Who knows, maybe you'll find yourself in a future issue telling your story or receiving an award. **EN**

Mark A. Newman,
Editor, *Endocrine News*



Mark A. Newman

By Derek Bagley

Tachykinin-Kisspeptin System's Role in Reproduction Identified



Researchers may have identified a system that acts as a central coordinator for reproduction, according to a paper recently published in *Endocrinology*.

Investigators led by Victor M. Navarro, PhD, of Brigham and Women's Hospital and Harvard Medical School, noted that the mechanisms that control kisspeptin release have become a hot topic in reproductive endocrinology, but no one has quite been able to pin down "the precise neuroendocrine events that determine the action of Kiss1 neurons and translate their message into congruent GnRH secretion."

Kiss1 neurons were recently implicated in coexpressing neurokinin B (NKB) and dynorphin A, and NKB belongs to family of peptides, along with substance P (SP), and neurokinin A (NKA), called tachykinins. The authors wrote that NKB "has emerged as a regulator of kisspeptin release in the arcuate nucleus (ARC), whereas the roles of SP and NKA regulation remain unknown." So Navarro and his team set out to understand the roles of SP and NKA in the central regulation of GnRH release, "as well as to determine the

expression and regulation of Tac1 mRNA in the hypothalamus and localization of the tachykinin receptors, through a series of genetic, functional, and histological studies in the mouse."

The authors presented a series of experiments: First, central infusion of specific agonists for the receptors of SP (neurokinin receptor 1, NK1R), NKA (NK2R), and NKB (NK3R) each induced gonadotropin release in adult male and ovariectomized, estradiol-replaced female mice, which was absent in Kiss1r^{-/-} mice, indicating a kisspeptin-dependent action. The NK2R agonist, however, decreased LH (luteinizing hormone) release in ovariectomized-sham replaced females, as documented for NK3R agonists but in contrast to the NK1R agonist, which further increased LH release. Second, *Tac1* (encoding SP and NKA) expression in the ARC and ventromedial nucleus was inhibited by circulating estradiol but did not colocalize with Kiss1 mRNA. Third, about half of isolated ARC Kiss1 neurons expressed *Tacr1* (NK1R) and 100% *Tacr3* (NK3R); for anteroventral-periventricular Kiss1 neurons and GnRH neurons, approximately one-fourth expressed *Tacr1* and one-tenth *Tacr3*; *Tacr2* (NK2R) expression was absent in all cases.

Based on these three sets of results, the researchers concluded that they had identified roles of tachykinins in the central control of GnRH release through SP and NKA, which activate Kiss1 and possibly GnRH, pointing to a better understanding of the roles of these substances in reproductive endocrinology.

Relaxin-3's Sex-Specific Role in Food Intake

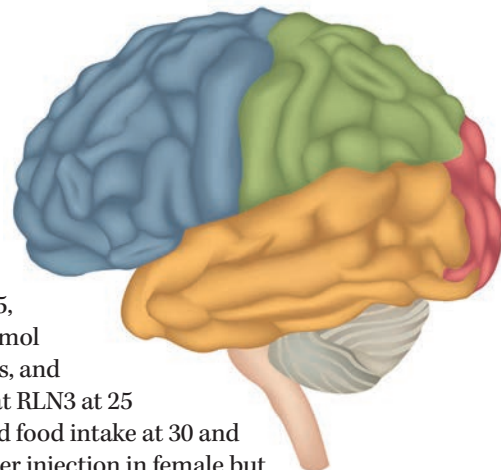
Relaxin-3 (RLN3) may play a different role in the different sexes when it comes to food intake, according to research recently published in *Endocrinology*.

RLN3 is mainly confined to the central nervous system, mostly in the forebrain in the parts that control food intake and stress response, and previous studies suggested that there may be sex-specific regulation of hypothalamic-pituitary-adrenal (HPA) axis activity by RLN3.

So investigators led by Elena Timofeeva, PhD, of the Centre de Recherche de l'Institut de Cardiologie et de Pneumologie de Québec, wanted to compare the acute effects of intracerebroventricular (icv) administration of RLN3 on food intake, body weight (BW) gain plasma corticosterone, and c-fos mRNA expression in the paraventricular hypothalamic nucleus (PVN) and corticotropin-releasing factor (CRF) mRNA expression in the PVN, central amygdala (CeA), hypothalamic medial preoptic area (MPOA), and bed nucleus of the stria terminalis (BST)

in male and female rats.

The team injected RLN3 into the rats' lateral ventricles at 25, 200, and 800 pmol concentrations, and they found that RLN3 at 25 pmol increased food intake at 30 and 60 minutes after injection in female but not male rats. They continued: "Female rats also showed higher increase in relative to BW food intake (mg/g BW) for all RLN3 concentrations at 30 minutes and for 800 pmol of RLN3 at 60 minutes. Moreover, RLN3 at 800 pmol significantly increased 24-hour BW gain in female but not male rats."



The female rats also showed significantly increased CRF mRNA expression in the BST but not PVN after 800 pmol of RLN3, and overall more sensitivity and stronger food intake increase in response to RLN3 than their male counterparts. The authors wrote that the results showed “higher sensitivity of female rats to the orexigenic effects of RLN3. In contrast, HPA axis activation in response to RLN3 was higher in male rats.” They concluded, “The differential effects of RLN3 on CRF expression in the PVN and bed nucleus of the stria terminalis may contribute to the sex-specific difference in the behavioral response.”

New Drug Approved to Treat Hypoparathyroidism

The FDA recently approved Natpara® (parathyroid hormone) as an adjunct to calcium and vitamin D to control hypocalcemia in patients with hypoparathyroidism. The drug is a bioengineered replica of human PTH and is expected to be available in the second quarter of 2015.

The FDA approval of Natpara was supported by 12 pharmacology studies and four company-sponsored efficacy and safety studies. The pivotal Phase 3 study, known as REPLACE, was a randomized, double-blind, placebo-controlled study and the largest clinical trial conducted to date in patients with hypoparathyroidism. The study results were published in *The Lancet Diabetes and Endocrinology*.

“Patients with hypoparathyroidism may benefit from having a replica of the actual human parathyroid hormone molecule that they are lacking,” Tamara Vokes, MD, professor of medicine at the University of Chicago, and program director of the University of Chicago Fellowship Training Program in Diabetes, Endocrinology, and Metabolism, said in a release. “In clinical studies, Natpara has been shown to control hypocalcemia in patients with hypoparathyroidism and reduce their need for oral calcium and active vitamin D.”

Because of the potential risk of osteosarcoma, Natpara is recommended only for patients who cannot be well-controlled on calcium supplements and active forms of vitamin D alone. The drug was not studied in patients with hypoparathyroidism caused by calcium-sensing receptor mutations or in patients with acute post-surgical hypoparathyroidism.



Women Diagnosed with PCOS Twice as Likely to be Hospitalized

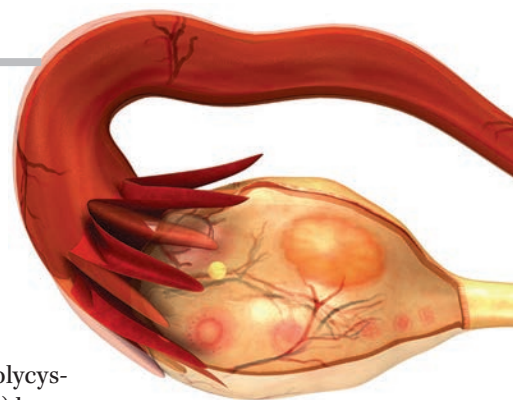
Women diagnosed with polycystic ovary syndrome (PCOS) have an increased risk of developing heart disease, diabetes, mental health conditions, reproductive disorders, and cancer of the lining of the uterus than healthy women, according to a new study published in the *Journal of Clinical Endocrinology & Metabolism*.

The population-based retrospective cohort study led by Roger Hart, MD, MRCOG, FRANZCOG, CREI, of the University of Western Australia and Fertility Specialists of Western Australia, in Perth, Australia, examined health records for 2,566 women ages 15 and older who were diagnosed with PCOS during a hospital visit in Western Australia between 1997 and 2011. This population's records were compared to hospitalization records for 25,660 women of similar ages, who were identified using voter registration records. Researchers tracked the participants' hospitalization records until the women reached a median age of 35.8 years.

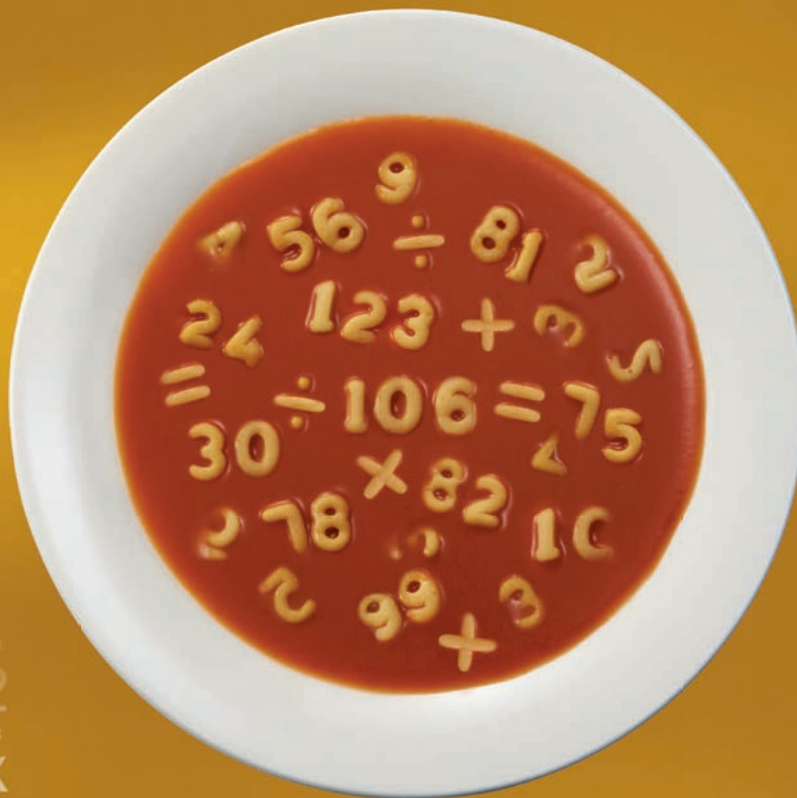
Researchers analyzing the data found women who were diagnosed with PCOS were more likely to be hospitalized for reasons unrelated to reproductive health or injury than their counterparts. Women who had PCOS were more likely to have miscarriages, ectopic pregnancies, or other gynecological conditions such as irregular menstrual periods and endometriosis. Women who had PCOS also had a higher rate of endometrial cancer or cancer of the lining of the uterus.

Women diagnosed with PCOS were hospitalized more often for mental health disorders such as depression, stress, and anxiety than other study participants. A PCOS diagnosis also was associated with a higher risk of late onset diabetes, high blood pressure, heart disease, asthma, and musculoskeletal disorders.

“We found women who have PCOS are particularly prone to developing metabolic and cardiovascular disease,” Hart says. “Since only 25 percent of the women we studied were older than 40, we anticipate the rate of diagnosis would rise as these women continue to age.” “PCOS has profound implications for a women's reproductive health as well as her long-term risk of chronic illness,” Hart continues. “Our study indicates women who have PCOS have twice as many hospital admissions as women without the condition. Additional health care resources should be directed to address the risks facing this population.”



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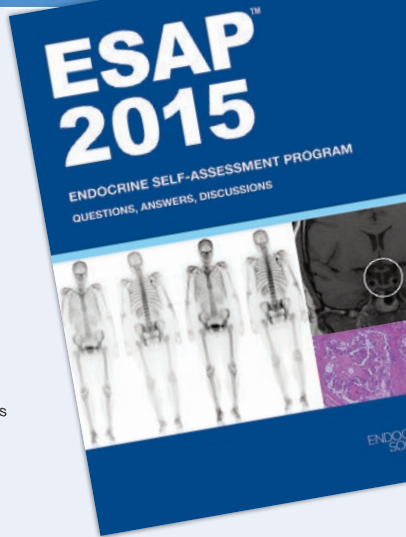
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DISCOVER THE THEORIES AND CONCEPTS BEHIND THIS EMERGING FIELD IN NUTRITIONAL SCIENCE.

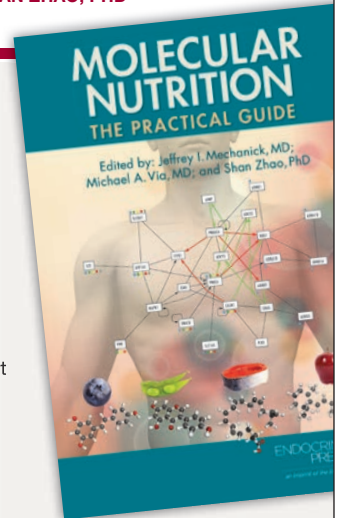
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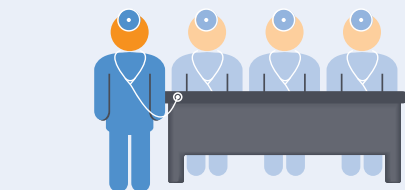
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Fast FACTS About Endocrinologists



Endocrinologists make an average of \$184,000 a year. 41% of both male and female endocrinologists report being satisfied with their income.



Only 22% of endocrinologists say they would choose the same practice setting again.

59% of U.S. endocrinologists take more than two weeks of vacation per year.



45% of endocrinologists report feeling "burned out."



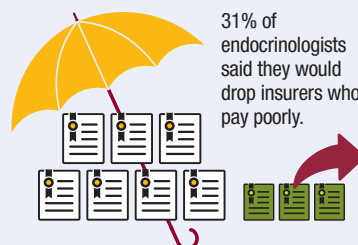
47% of endocrinologists 35 and younger report feeling burned out.



3% of burned out endocrinologists report using marijuana in the past year.



35% of burned out endocrinologists report not drinking alcohol at all.



31% of endocrinologists said they would drop insurers who pay poorly.



41% of endocrinologists said being good at what they do is the most rewarding part of the job.

WHY ENDOCRINOLOGY?



By Mark A. Newman

In the June issue of *Endocrine News*, our cover story was “The State of Endocrinology.” The overarching theme was that, yes, there are challenges to practicing this specialty, but those challenges pale in comparison to the rewards. Most of the time.

As was cited in that article, a 2013 Medscape survey showed that 27% of U.S. endocrinologists make between \$200,000 and \$250,000 a year, while 17% make \$100,000 or less. However, down the hall in the cardiology wing, the average cardiologist makes \$357,000, with 23% making \$500,000 or more. Since the typical medical school graduate gets a debt load of about \$174,500 along with his or her diploma, according to numbers from the Association of American Medical Colleges, obviously endocrinology is not the choice if you are “in it for the money.”

However, it is the obvious choice to a lot of practicing endocrinologists because progress in treating the human condition has been made year after year. In the research arena, new breakthroughs have been plentiful. Endocrine Society past-president Robert Vigersky, MD, director of the Diabetes Institute at the Walter Reed National Military Medical Center and professor of medicine at the Uniformed Services University of Health Sciences, Bethesda, Md., cites this progress as one reason why many enter the field in the first place.

“The research advances that have occurred over the last two decades have extended

We asked a variety of your colleagues why they chose endocrinology as a career. Their answers are thoughtful, enlightening, revealing, and even heartwarming.



endocrinology from a discipline that attempts to understand the physiology and pathophysiology of ‘internal secretions’ on all body systems to one that also seeks knowledge of the effect of cellular communications, genetics and gene expression, and receptor-ligand interactions on organ systems,” Vigersky says. “There are many examples of how the discoveries in these areas have directly improved patient diagnosis and treatment.” He is also one of the co-authors of the Society’s recent workforce analysis, *Endocrine Clinical Workforce: Supply and Demand Projections*, which was detailed in the January cover story, “Is There an Endocrinologist in the House?”

In 2012, Medscape asked physicians the question “If you had to do it all over again, would you?” In 2011, almost 70% of endocrinologists would still choose a career in medicine, but that number fell to 57% in 2012. Moreover, only 38% of endocrinologists would choose endocrinology again, a discernable decline from 70% in 2011. Sadly, it appears that some in the field — physicians anyway — are suffering from “buyer’s remorse” in regards to their chosen discipline.

So taking all these issues into account, we decided to ask endocrinologists from around the world and from all three constituencies of the Endocrine Society membership — physicians in practice, clinical researchers, and basic scientists — a simple question: “Why did you choose endocrinology?” Their answers are thoughtful, enlightening, revealing, and even heartwarming.

Changes in Aptitudes

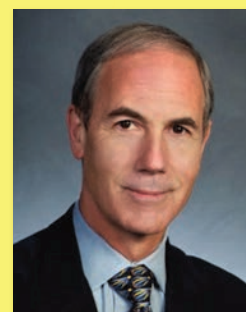
For the record, Vigersky says his chosen field was easy because he loves challenges. “I chose endocrinology because it was and still is the medical specialty that presents the ultimate challenge in putting an understanding of biochemistry, cell biology, and genetics directly into patient care.”

Similarly, Todd Frieze, MD, an endocrinologist with a practice in Biloxi, Miss., always considered himself a “thinker” in terms of doing puzzles, games, crosswords, etc. Therefore, he always had a penchant for in-depth analytical approaches to many parts of his life. “As I transitioned from medical school through residency, I found the thinking process for endocrinology to match this interest,” Frieze explains. “Since I have been in practice, I have found that the field of endocrinology places us as ‘medical detectives’ — taking the time to dig through records, arranging diagnostic testing via labs, imaging studies, dynamic endocrine testing. Thus, the practice of endocrinology distinctly matched my own personality.”

Glenn Matfin, MD, the editor of the Society’s first book published by Endocrine Press, *Endocrine and Metabolic Medical Emergencies*, says that the old adage “The pen is mightier than the sword” resonated with him when he was contemplating what direction to take early in his training. Should he choose the pen (i.e., prescribing) or the sword (i.e., scalpel)? “During the latter stages of my general (internal) medicine training, my career preference was further skewed toward more cognitive, nonprocedural specialties after doing a series of clinical rotations including rheumatology, neurology, and finally endocrinology.”

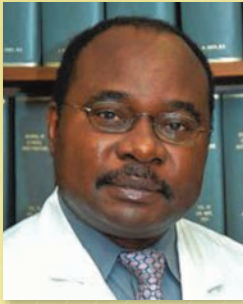
Under the Influence: Mentors, Professors, and ENDO

In a tale that is likely familiar to many endocrinologists, Matfin’s decision was further shaped by others. His endocrinology rotation working for the late Donald Munro, chair of medicine at the University of Sheffield, UK, was especially influential because it allowed Matfin to focus on



“I chose endocrinology because it was and still is the medical specialty that presents the **ultimate challenge in putting an understanding of biochemistry, cell biology, and genetics directly into patient care.**”

— Robert Vigersky, MD, director, Diabetes Institute at the Walter Reed National Military Medical Center; professor of medicine, Uniformed Services University of Health Sciences, Bethesda, Md.



“Endocrinology has always struck me as the queen of the cognitive specialties: a discipline that provides continuing intellectual stimulation, pragmatic satisfaction, and great promise of discovery.”

— Sam Dagogo-Jack, MD, A.C. Mullins Professor in Translational Research, director, Division of Endocrinology, Diabetes & Metabolism; director, General Clinical Research Center, University of Tennessee Health Science Center, Memphis, Tenn.



“In the course of training, I believe that many of us have had a specific mentor that has guided us or directed us in a career choice.”

— Todd Frieze, MD, endocrinologist, Biloxi, Miss.

endocrinology as his ideal career pathway. This position further enabled him to obtain a clinical fellowship with one of Munro’s former mentees — Pat Kendall-Taylor and her colleagues at the University of Newcastle, UK. “Apart from exposing me to a much broader range of secondary and tertiary endocrinology care — all embedded in an enriched and nurturing basic and clinical research environment — it also, for the first time, gave me a unique insight into diabetes and its management,” Matfin says, adding that additional training in London at the Royal Free and St. Bart’s was followed by an opportunity as NIH visiting-fellow studying diabetes in the Pima American Indians in Arizona.

Sam Dagogo-Jack, MD, the A.C. Mullins Professor in Translational Research, director of the Division of Endocrinology, Diabetes & Metabolism, and director of the General Clinical Research Center at the University of Tennessee Health Science Center in Memphis, not only shares a similar motivation to Matfin, the two also share a mentor: Kendall-Taylor. While at the University of Newcastle during his residency training in internal medicine, he found himself with a bench space at the Wellcome Research Labs where he was a part of Kendall-Taylor’s group and was allowed to pursue clinical and bench training in endocrinology simultaneously. “With additional training as a metabolism fellow at Washington University School of Medicine, my fate was sealed and my commitment to endocrinology became irreversible,” he says.

Frieze can also point to a specific professor who had a profound impact on him while he was in the midst of his education at Emory University School of Medicine. “In the course of training, I believe that many of us have had a specific mentor that has guided us or directed us in a career choice,” he explains. “For me, that person was Guillermo Umpierrez. During the second year of medical school in a pathophysiology course, Dr. Umpierrez presented quite a few of the lectures during the endocrine section. These lectures sparked my initial interest in endocrinology as I saw the flow diagrams and feedback pathways. In the fourth year of medical school, I was able to spend one of my elective months with Dr. Umpierrez, which further sparked my interest in pursuing endocrinology. His dynamic teaching style and interesting lectures really shined light on the positive aspects of endocrinology.”

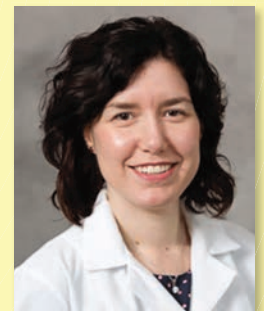
From the influence of a single mentor or professor during training to the influence of several, Joanna Spencer-Segal, MD, PhD, chose endocrinology after attending ENDO 2008. She was still a graduate student studying neuroendocrinology and was preparing to return to Weill Medical College of Cornell University to finish a combined MD/PhD program. However, she was conflicted by the many competing interests that can affect a trainee’s choice of scientific or medical specialty. Then came a fateful trip to San Francisco for ENDO 2008.

“I found that the meeting combined clinical and basic science very successfully, and felt this reflected a positive environment for physician-scientists in endocrinology,” she explains. “As a neuroscientist, I like that endocrinologists must consider the integration of all of the body’s systems including the brain, with hormones as messengers. To me this was preferable to a subspecialty focused on just one organ system.” Spencer-Segal is currently a second-year endocrine fellow at the University of Michigan where she is participating in a combined residency and fellowship training that follows the American Board of Medicine’s research pathway.

Excited About Endocrinology

According to Bulent O. Yildiz, MD, professor of medicine and endocrinology at Hacettepe University School of Medicine in Ankara, Turkey, the word “hormone” means “excite” in ancient Greek and that was his reaction to endocrinology after undergoing various internal medicine subspecialties during his residency. “Endocrinology got me excited in those days and I was drawn to it,” he says. “I ended up training in a rigorous program, and being an endocrinologist in academic medicine has been a truly rewarding career ever since.”

Yildiz says he was impressed how endocrinology is not an “organ specialty” and is unique since hormones control the entire body with effects on homeostasis, growth, development, metabolism, and reproduction. “As an endocrinologist, you are exposed to a huge variety of endocrine problems, some of which are not localized to a particular organ and present with subtle clinical features; some being



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— Joanna Spencer-Segal, MD, PhD, second-year endocrine fellow at the University of Michigan, Ann Arbor



“Sound clinical judgment for every patient walking through the door requires a broader perspective and knowledge.”

— *Bulent O. Yildiz, MD, professor of medicine and endocrinology at Hacettepe University School of Medicine in Ankara, Turkey*

common with huge impact both at individual and community levels; and some being quite rare with interesting presentations,” he says. “Sound clinical judgment for every patient walking through the door requires a broader perspective and knowledge.”

Performing dynamic endocrine tests and interpreting their results provide excellent integration of physiology, biochemistry, and clinical medicine, Yildiz continues, adding that overall, intellectual stimulation for diagnosis and management in endocrinology is just fascinating. “For me,” he says, “this is the most appealing feature of endocrinology.”

Nikolaos Nikolaou, a doctoral student at the Oxford Centre for Diabetes, Endocrinology & Metabolism, Churchill Hospital, University of Oxford, Headington, UK, shares Yildiz’s enthusiasm and excitement for the field. He realized that when he was contemplating which system to study, the endocrine system was one of the most exciting. “Its complexity as well as its contribution to many crucial steps of growth, development, and physiology forced me to focus on how hormones act, affect, and modulate body function,” he says. “That was the reason I chose a masters in science based on female reproduction and examined the impact of androgens on lipid metabolism for my thesis.”

Nikolaou explains that over time he decided to specialize on sex hormones and diabetes and is thoroughly excited by how challenging and rewarding the field has proven to be. “It is an area where both

basic science and clinical medicine run in parallel, and, as a basic scientist, I get thrilled by how my research can have such a great impact on patients’ quality of life,” he says. “The daily interaction with clinicians and patients as well as with people from similar, but not the same, endocrine field gives you a unique opportunity to broaden your knowledge and helps to better understand how other key endocrine tissues can also contribute to the metabolic disease.”

Nikolaou adds that due to the global escalation of metabolic disease, which has been shown to reduce life expectancy by more than 10 years in some cases, endocrinology research has become even more crucial than ever. “This is what makes you feel like your work is really worthwhile,” he adds.

This Time It Really Is Personal

Other times, the choice of a career can be extremely personal as it was for Syed Sufyan Hussain, PhD, Darzi Fellow in Clinical Leadership, Specialist Registrar, and honorary clinical lecturer in Diabetes, Endocrinology, and Metabolism at the Imperial College Healthcare NHS Trust and Imperial College, London, UK, who wanted to be a lawyer until he was 11. The turning point for him came when he was diagnosed with type 1 diabetes.

“The experience of going through the diagnosis, treatment, and day-to-day life with a condition that requires careful replacement of a hormone, necessary not just for optimum health but for survival, was a real eye-opener to the world and power of hormones,” he says. “Understanding why they go wrong, replacing them, blocking them, or even harnessing their potential for a different disease fascinated me. It’s this attraction that led me to work in this specialty with the hope of benefitting others by understanding hormones better.”

Like many of his colleagues, Hussain stresses the uniqueness of endocrinology and how unlike some other specialties, clinical endocrinology is a multi-systemic specialty and affects a range of different organs, which keeps things interesting. “This lends itself really nicely to teaching and medical education too,” he says. “Moreover, endocrine conditions tend to be chronic diseases. As endocrinologists we are very privileged to have long-term relationships in supporting our patients holistically through the various stages in their life journey — something I found immensely rewarding and allowed me to use my own life experiences as a patient in helping others.”



“It is always a pleasure and privilege to care for persons with endocrine disorders. Endocrinology is an evolving and fast-moving field, and it never ceases to stimulate or surprise.”

— *Glenn Matfin, MD, consulting physician, National Health Service, UK; editor, Endocrine and Metabolic Medical Emergencies*



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honorary clinical lecturer in
Diabetes, Endocrinology,
and Metabolism, Imperial
College Healthcare NHS
Trust, Imperial College,
London, UK

...And That's Why I Chose Endocrinology

Matfin, a consulting physician with the UK's National Health Service, says that he has never been disappointed with his career choice of endocrinology and diabetes. “The intellectual process of combining focused history, targeted physical exam, and diverse investigations culminating in correct diagnosis and appropriate treatment and monitoring is very satisfying and a great benefit for the patient whose condition has often not been diagnosed or managed optimally,” he says. “A career in endocrinology and diabetes has also personally benefited me in many ways including allowing me to travel and work internationally; meet and interact with basic and clinical thought-leaders; be engaged in experimental and translational research leading to novel diagnostic tools and therapies; and attempt to demystify and share endocrine and metabolic knowledge with undergraduates and clinicians alike. Last but not least, it is always a pleasure and privilege (no matter how fed-up we are feeling!) to care for persons (and families) with endocrine disorders. Endocrinology is an evolving and fast-moving field, and it never ceases to stimulate or surprise.”

“With hindsight, endocrinology has always struck me as the queen of the cognitive specialties: a discipline that provides continuing intellectual stimulation, pragmatic satisfaction, and great promise of discovery,” Dagogo-Jack explains. “The allure of endocrinology is the mastery of a much broader range of organs, glandular systems, and signaling pathways than is typical for the other subspecialties.”

According to Hussain, endocrine disorders bring in a range of other issues including public health, preventative medicine, policy, health economics, healthcare systems, medical informatics, cultural issues, clinical leadership, patient self-management, and engagement. “To sum it all up, endocrinology is a fascinating and challenging multi-dimensional specialty that opens the doors to an array of stimulating opportunities packaged into a family-friendly environment. So why would I choose anything else?” **EN**

— Newman is the editor of Endocrine News. He wrote about online communities for young adults with endocrine disorders in the November issue.



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The Endocrine Society 2015 Laureate Award Winners

For more than 70 years, the Endocrine Society has recognized the achievements of endocrinologists worldwide. Valued at more than \$66,000, 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.

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 history.

ANDRZEJ BARTKE, PHD Southern Illinois University School of Medicine



Fred Conrad Koch Lifetime Achievement Award

— the Society's highest honor — recognizes the lifetime achievements and exceptional contributions of an individual to the field of endocrinology. Fred Conrad Koch, PhD, the Society's 19th president, is best remembered for his elucidation of testicular function. In 1957, the late Elizabeth Koch bequeathed a substantial legacy to the Endocrine Society in memory of her late husband, Dr. Fred Conrad Koch.

Andrzej Bartke is a highly respected endocrinologist of international prominence who has been contributing to the field of endocrinology for over five decades. He currently is professor emeritus and director of Geriatric Medicine in the departments of Internal Medicine and Physiology at Southern Illinois University School of Medicine in Springfield, Ill. His early career was devoted to the reproductive role of growth hormone (GH) and prolactin on testicular physiology. During this time he became the founding editor of the *Journal of Andrology* and the president of the American Society of Andrology. He also served as both the director

and president of the Society for the Study of Reproduction. His studies were key in elucidating prolactin's role as a major component of the multi-hormone complex that controls testicular steroidogenesis. He pioneered the use of prolactin-defective mutants and showed how chronic elevation of prolactin affected pituitary and testicular function. He also made important contributions in elucidating the role of prolactin in female reproduction and the effects of cannabinoids, alcohol, testosterone, and photoperiod on reproductive systems.

The role of GH deficiency and GH overexpression has been a running theme in Dr. Bartke's work since 1964. Dwarf mice, particularly the Ames dwarf, have served a major role in the underlying discoveries of the somatotrophic and lactotropic regulation of reproduction. His discovery that these mice were long-lived initiated an in-depth study of the hormonal control of aging.

In recent years, Dr. Bartke has become a leader in the field of mammalian aging. His laboratory was the first to show that GH and IGF1 are major players in the regulation of lifespan in the mammal. He showed that GH deficiency delays aging, increases lifetime insulin sensitivity, significantly reduces cancer incidence, extends cognitive acuity, and increases overall health span. These and other discoveries clearly demonstrate that the GH/IGF1/insulin pathways are primary regulators of aging in rodents. Together, these breakthroughs are firmly supported in other species, indicative of the evolutionary importance of this endocrine mechanism. Importantly, his studies suggest that pathways

regulated by GH play an important role by which dietary restriction extends lifespan. Some of his long-living mutant mice earned him the famous 'Methuselah Prize' for the current world record for mammalian life extension.

Dr. Bartke's extraordinary scientific accomplishments have also brought him much deserved recognition. Recognition in the aging field is exemplified by his presidency in the American Aging Association and editorships and editorial board membership for multiple endocrine journals. In 2013, he received the Robert W. Kleemeier Award for Outstanding Research in the field of gerontology. He has

more than 700 publications and has had continuous NIH funding since 1972 for his research in endocrinology. He has trained numerous students and postdoctoral researchers in addition to many visiting scientists openly sharing his depth of knowledge and enthusiasm for endocrinology. He has a true international presence.

His contributions to the field of endocrinology are exceptional in depth, impact, and diversity, making him a highly deserving recipient of the Fred Conrad Koch Award of the Endocrine Society.

— Holly Brown-Borg

SHALENDER BHASIN, MD Brigham and Women's Hospital



The Outstanding Clinical Investigator Award

is presented to an internationally recognized clinical investigator for meritorious contributions to clinical research related to pathogenesis, pathophysiology, and therapy of endocrine diseases. *Supported by the Endocrine Society.*

Shalender Bhasin is a gifted translational investigator whose pioneering investigations have been notable for their bold study design, innovation, and their impact in bringing resolution to some of the most controversial issues in reproductive endocrinology. He has guided drug discovery efforts on androgens and selective androgen receptor modulators (SARMs) as function-promoting anabolic therapies. Dr. Bhasin's research provided the first evidence of the anabolic effects of androgens in humans, established testosterone's dose-response relationships, elucidated the mechanisms by which androgens increase skeletal muscle mass and strength, and uncovered novel signaling pathways that mediate the regulation of mesenchymal

multi-potent progenitor cell differentiation by testosterone.

Elucidation of the mechanistic pathways has provided important leads to the development of approaches to achieve selectivity of testosterone action on muscle while sparing the prostate. His research has clarified the role of steroid 5-alpha reductase type 2 in mediating the effects of testosterone in adult men and revealed that local amplification achieved by conversion of testosterone to DHT is important during sexual differentiation, but not in adult men. He elucidated the mechanisms by which testosterone stimulates erythropoiesis and demonstrated its role in regulating iron availability through hepcidin transcription.

Dr. Bhasin has led the efforts to rigorously define the androgen deficiency syndrome in men and to generate population-based reference ranges for testosterone. He has characterized testosterone's binding to SHBG and described a new multi-step allosteric model for estimation of free testosterone.

He has won numerous awards for excellence in teaching and patient-oriented research. He has served as: associate editor of *JCEM*, chair of the Clinical Guidelines Committee, chair of the Clinical Guidelines Panel that developed guidelines for testosterone therapy, and chair of the ABIM Endocrinology and Metabolism Board. Dr. Bhasin's numerous clinically relevant discoveries published in top-tier journals have spawned new biotechnology ventures that promise to shape the future practice of reproductive endocrinology.

— Ronald Swerdloff

ROBERT M. CAREY, MD University of Virginia Health System



The Outstanding Leadership in Endocrinology Award

is presented in recognition of outstanding leadership in fundamental or clinical endocrinology as exemplified by the recipient's contributions and those of his or her trainees and associates to teaching, research, and/or administration.

Robert M. Carey has had a long and remarkably distinguished medical career since graduating from Vanderbilt University School of Medicine in 1965. Dr. Carey completed medical residency at New York Hospital/Cornell and returned to Vanderbilt for an endocrinology fellowship under the pioneering investigator Grant W. Liddle. After a research fellowship in hypertension at Imperial College London, Dr. Carey joined the faculty at Virginia in 1973, where he quickly rose through the ranks, serving as associate director of the NIH-GCRC, division head of Endocrinology, professor of medicine, dean of the School of Medicine and James Carroll Flippin Professor of Medical Science at the University of Virginia Health System, Charlottesville (1986-2002), and since 2003, the David A. Harrison III Distinguished Professor

of Medicine and University Professor.

Dr. Carey received numerous honors including election to the American Society for Clinical Investigation, Association of American Physicians, and Institute of Medicine of the National Academy of Sciences. He has been honored with many invited lectureships across the world as well as the Page-Bradley Lifetime Achievement Award and the Excellence Award for Hypertension Research (Novartis Award) of the Council for High Blood Pressure Research of the American Heart Association. Dr. Carey's research on the renin-angiotensin system, hypertension, and cardiovascular endocrinology using cell and animal models and humans is reflected in more than 400 scientific publications and three books. Dr. Carey brought to his service for the Endocrine Society prodigious energy and dedication on committees (Finance,

Development, Research Advisory, Nominating, the Hormone Foundation), but most importantly, brought visionary and dynamic leadership to Council, as chair of Development and of Advocacy and Public Relations, and finally as the Society's President (2008-2009). He transformed the Annual Meeting, founded our Scientific Statements program (emphasizing our strengths in endocrine-disrupting chemicals, anabolic steroids, estrogen therapy, and vitamin D to name a few), revamped our advocacy efforts in Congress, and brought the public policy relevancy of endocrine research into the daily activities of our Society.

His transformative leadership of our Society and the field more than merit the honor of this Outstanding Leadership in Endocrinology Award to Dr. Carey.

— Dolores Shoback, MD

AJAY CHAWLA, MD, PHD University of California, San Francisco



The Richard E. Weitzman Memorial Outstanding Early Career Investigator Award

is presented to an exceptionally promising young clinical or basic investigator who has not reached the age of 50 by December 31 of the year in which the award

is presented. The award is based upon the contributions and achievements of the nominee's own independent scholarship performed after completion of formal training and on the recipient's entire body of work, rather than a single work. Established in 1982 through a generous gift by an anonymous donor, this award honors the memory of the late Richard E. Weitzman, who had a brief but outstanding career studying neurohypophysial hormone and cardiovascular-endocrine physiology. *Supported by the Richard E. Weitzman Memorial Fund.*

Ajay Chawla's work has established general principles by which innate immunity extends the homeostatic capacity of tissues, which has deepened our understanding of metabolic diseases.

Dr. Chawla received his BSc from Johns Hopkins University in Biomedical Engineering, and his MD and PhD degrees from the University of Pennsylvania. He completed his graduate work in my laboratory at the Perelman School of Medicine at the University of Pennsylvania, where he studied the functions of nuclear receptors in adipogenesis. After completing his clinical training in internal medicine and endocrinology, he joined the laboratory of Ron Evans, MD, at the Salk Institute for Biological Sciences. His postdoctoral work focused on the functions of PPARs in macrophage cholesterol and lipid homeostasis. Dr. Chawla joined the Department of Medicine of

Stanford University in 2002, and subsequently moved to the Cardiovascular Research Institute of the University of California-San Francisco in 2010, where he is an Associate Professor of Physiology and Medicine.

Over the past decade, Dr. Chawla's contributions have spanned the areas of physiological, regenerative, and circadian homeostasis. His work has uncovered new functions of type 2 innate immunity, which includes interleukin-4 and -13, eosinophils, and alternatively activated macrophages, in the regulation of metabolic homeostasis. Major findings include an ameliorative role for alternatively activated macrophages and eosinophils in diet-induced obesity and insulin resistance, as well as a novel role for type 2 immunity in adaptive thermogenesis. To this end, Dr. Chawla was first to demonstrate that catecholamine production by alternatively activated macrophages stimulates the browning of white adipose tissues in the response to cold temperature.

In the area of regenerative homeostasis, Dr. Chawla's laboratory has elucidated mechanisms by which type 2 innate immunity regulates stromal cell functionality to support muscle regeneration, providing a new paradigm to study how communication among immune, stromal, and stem cells instructs programs of tissue regeneration. His laboratory also discovered that the monocyte peripheral clock functions to limit host inflammatory responses and enhance organismal fitness, an important example of how physiologic outputs of peripheral clocks enhance organismal fitness.

The pioneering spirit of Dr. Chawla's work has been recognized by a number of awards, including election to the American Society for Clinical Investigation and the Association of American Physicians, and awards from the Rita Allen Foundation, Culpepper Medical Sciences, NIH Director's Pioneer Award program, and AHA Western States Affiliate Innovative Science Award. He is a most worthy recipient of the Richard E. Weitzman Outstanding Early Career Investigator Award.

— Mitch Lazar

SUSAN DAVIS, MBBS, FRACP, PHD
**The School of Public Health and Preventative
Medicine, Monash University**



**The International
Excellence in
Endocrinology Award**

is presented to an endocrinologist who resides outside of the United States, who has made exceptional contributions to the field of endocrinology in geographic

areas with underdeveloped resources for endocrine research, education, clinical practice, or administration. These may include non-traditional activities with substantial local impact to his/her own country and/or internationally. *Supported by the Endocrine Society.*

Susan Davis is recognized for her seminal contributions as a researcher, clinician, and educator to the understanding of androgen and estrogen action, deficiency, and replacement in women. She is internationally known for advancing the understanding of the role of androgens and estrogens in women, with research encompassing numerous aspects of women's health including breast cancer, cardiovascular function, obesity, cognitive function, mood, sexual function, and musculoskeletal health. Her groundbreaking research has had a significant impact globally on women's health.

In addition, Dr. Davis has played a leading role in education and made important contributions in service to the community. She co-established the Jean Hailes Foundation, Australia's leading women's health educational organization, and has written books and produced educational DVDs for the community. Furthermore, her work with the Australian Aboriginal community is notable and has garnered her awards, including the Glaxo Wellcome International Diabetes Education Award.

Dr. Davis is a National Health and Medical Research Council of Australia Principal Research Fellow, chair of Women's Health, and director of the Women's Health Research Program, School of Public Health and Preventive Medicine, Monash University, Australia, and head of the Women's Specialist Health Clinic at the Alfred Hospital in Melbourne. She has been a member of multiple national and international practice guideline committees, is past president of the Australasian Menopause Society, has served on the Monash University Council and Council Executive, a range of National Health and Medical Research Council of Australia committees, and the Annual Meeting Steering Committee of the Endocrine Society, and is currently a board member of the International Menopause Society.

It is for her impressive impact on women's health, both in her native Australia and internationally, with her research, clinical care, educational leadership, and community service that Dr. Davis is recognized with the International Excellence in Endocrinology Award.

— Karen Klahr Miller

ANNE ETGEN, PHD
Albert Einstein College of Medicine



**The Outstanding
Educator Award**

The Outstanding Educator Award is presented in recognition of exceptional achievement as an educator in the discipline of endocrinology and metabolism.

Supported by the Endocrine Society.

Anne Etgen has spent more than 30 impactful years as a dedicated educator, researcher, and mentor. Without pause she has generously used her intellectual capital to buttress the academic and professional success of a number of Endocrine Society members. Dr. Etgen's exceptional commitment to education and research make her the ideal recipient of the Endocrine Society 2015 Distinguished Educator Award.

Anyone who has had the good fortune to work with Dr. Etgen would agree that she is a passionate educator with palpable energy. She is an exemplary mentor and a staunch advocate for the recruitment, retention, education, and

advancement of women and underrepresented groups in the field of neuroendocrinology. Her infectious enthusiasm for neuroendocrinology has enticed a generation of high school through postdoctoral trainees into the field of steroid receptor biology and reproductive endocrinology. Her commitment to education and research is truly unparalleled.

She has had more than 30 years of NIH funding, including two NIH MERIT awards, published more than 150 original manuscripts, and has trained several dozen MDs, PhDs, and MD/PhDs. She was director of Graduate Studies at Albert Einstein College of Medicine, and she helped lead a highly successful, NIH-funded, diversity mentoring program for the Society for Neuroscience. Even in retirement her efforts continue to reverberate; she worked with colleagues to establish the American Psychological Foundation Racial/Ethnic Diversity in Neuroscience and Psychology Fund.

Dr. Etgen embodies all of the attributes that define the Endocrine Society Outstanding Educator Award. She is the consummate example of what it means to be a thought leader in education and mentoring. She is an outstanding role model. We should all strive to follow her lead. After considering her truly impressive achievements as an educator, mentor and researcher, it is difficult to imagine anyone more deserving of this distinguished award.

— Genevieve Neal-Perry

VALERIA GUIMARÃES, MD, PHD, FACE ENNE



Outstanding Public Service Award

Established in 2013, the Outstanding Public Service Award is presented to an individual who best demonstrates dedication to public awareness or public service in support of the field of endocrinology

and the patients who suffer from endocrine disorders.
Supported by the Endocrine Society.

It is an honor to introduce you the 2015 Outstanding Public Service Award Laureate, **Valeria Guimarães**.

Throughout the past 15 years, we have closely witnessed the beauty, ethics, and passion that she has stamped her personal and professional life with.

She has idealized, developed, led, and worked on outstanding local and national public awareness campaigns and services in support of endocrinology and patients in Brazil. Among many, we proudly cite:

- Implementation of public campaigns for patient education on thyroid diseases and early detection of thyroid cancer;

- Leadership in the fight against the worrying figures of childhood obesity, joining the efforts of The Endocrine and The Pediatric Brazilian Societies, the Brazilian National Congress and elementary and secondary schools for more efficient results;
- The mobilization of population, media, and Brazilian Medical Societies to push the Brazilian Government toward the assignment of the World Health Organization Global Strategy on Diet, Physical Activity, and Health; and
- Her unwearied work on one of the most important amendments to the Brazilian Constitution: the exclusion of the union monopoly for the production, commercialization, and utilization of short half-life isotopes for medical needs, which made possible the use of PET scan as a diagnostic tool in the whole country, making easier the lives of thousands of patients with cancer.

Undoubtedly, she is a singular person, but most of all she is plural: She uses WE instead of I.

It was with great joy that we, Brazilian endocrinologists and citizens, and certainly those from other countries as well, were informed that the Endocrine Society Awards Committee acknowledged Valeria Guimarães' work and selected her as the recipient of the 2015 Outstanding Public Service Award. She truly embodies the levels of accomplishment this Award stands for.

— Luiz Claudio Castro

GÖKHAN S. HOTAMISLIGIL MD, PHD Harvard School of Public Health



Roy O. Greep Award for Outstanding Research

Roy O. Greep Award for Outstanding Research is presented for meritorious contributions to research in endocrinology. *Supported by the Roy O. Greep Memorial Fund*

Gökhan Hotamisligil received his MD from Ankara University and his PhD from Harvard University. He is currently the JS Simmons Professor of Genetics and Metabolism and chair of the Department of Genetics and Complex Diseases, at the Sabri Ülkler Center at Harvard University, School of Public Health.

Dr. Hotamisligil has been a pioneer in research efforts to elucidate the mechanistic basis of common chronic metabolic diseases, particularly obesity, diabetes, and heart disease. His work has led to the emergence of novel concepts that have altered our understanding of disease pathogenesis. Foremost among these is the recognition

that metabolism and immune responses are linked and that chronic metabolic inflammation plays an important role in the pathogenesis of obesity and related metabolic diseases. He has also discovered the role of lipid chaperones and lipokines that regulate lipid and glucose metabolism. He identified the endoplasmic reticulum as a key organelle regulating whole-body metabolic homeostasis and described the molecular mechanisms underlying this unique function. A key distinguishing feature of Dr. Hotamisligil's work is the attention devoted to human endocrine disease relevance and the development of therapeutic and preventive strategies.

Dr. Hotamisligil's work has been instrumental in opening a new field of study known as "immunometabolism" and has attracted many investigators from diverse fields to this new area. His discoveries are widely pursued in drug development programs. He has been recognized with many fellowships and awards, including Markey and Pew Fellowships, the Outstanding Scientific Accomplishment Award of American Diabetes Association, the Wertheimer Award, the Naomi Berrie Award from Columbia University, the Danone International Nutrition Prize, and the Science awards of TUBITAK and Vehbi Koç Foundation. Dr. Hotamisligil is an inspiring colleague and mentor and has trained many successful scientists who have now developed their own independent programs around the world.

— Peter Tontonoz

ANNE KLIBANSKI, MD
Massachusetts General Hospital



Outstanding Mentor Award

Established in 2013, the Outstanding Mentor Award is presented to an individual in recognition of a career commitment to mentoring, a significant positive impact on his/her mentees' education and career, and who, through his/her mentees, has

advanced research or patient care in the field of endocrinology. The key roles of a mentor include, but are not limited to, nurturing intellectual growth, career development, professional guidance, and positive role modeling. *Supported by the Endocrine Society.*

A graduate of Barnard College, **Anne Klibanski** attended New York University School of Medicine, where she completed her residency in internal medicine. She then did an endocrine fellowship at Massachusetts General Hospital (MGH) focusing on neuroendocrinology under the mentorship of Chip Ridgway. She was instrumental in establishing the Massachusetts General Hospital Neuroendocrine Unit, a prototype of a multi-disciplinary clinical and research

unit dedicated to pituitary disorders. Dr. Klibanski is currently the Chief of the Neuroendocrine Unit at MGH and the Chief Academic Officer at Partners Healthcare. She is the Laurie Carrol Guthart Professor of Medicine at Harvard Medical School.

Dr. Klibanski embodies the elements of the perfect mentor. She has mentored more than 50 trainees, many of whom have gone on to leadership roles at Harvard and other top institutions. As the first woman promoted to full Professor of Medicine at Harvard from Massachusetts General Hospital, Dr. Klibanski recognized the barriers women face for career advancement. She established and now oversees institutional offices for career development and mentoring for women faculty, researchers, and clinicians as the director of the Center for Faculty Development at MGH. She was instrumental in establishing the MGH Clafin Distinguished Scholar Awards to support junior faculty trying to balance an academic career with family responsibilities. In honor of her abilities as a mentor, she received the Harvard Medical School William Silen Lifetime Achievement in Mentoring Award in 2010.

Even though I left Massachusetts General Hospital 10 years ago, she remains my mentor, and I rarely make a decision without thinking 'what would Anne say?' The fact that her trainees remain staunchly loyal to Klibanski reflects her dedication to their careers and the sage advice and support she has given to so many.

— Laurence Katznelson

ROBERT NEER, MD
Massachusetts General Hospital



Gerald D. Aurbach Award for Outstanding Translational Research

The Gerald D. Aurbach Award for Outstanding Translational Research is presented in recognition of outstanding research that accelerates the transition

of scientific discoveries into clinical applications. Translational research supported with this award will typically involve expertise, collaboration, and engagement across disciplines. *Supported by the Gerald D. Aurbach Memorial Fund.*

Among **Bob Neer's** many achievements is his critical role in the work that led to the successful introduction of parathyroid hormone therapy for osteoporosis. With his colleagues, he was the first to test synthetic PTH 1-34 in clinical medicine. A special focus was on patients with osteoporosis. FDA requirements then were for metabolic

balance studies (calcium balance) and bone biopsies. Despite these challenging requirements, considerable scientific skepticism, and lack of NIH support, Bob persisted in his studies realizing their importance. He was able to stitch together sufficient funding to permit his studies through the 1970s. They were a core component of the 1980 report in the *British Medical Journal* indicating the potential benefit of PTH 1-34 in osteoporosis.

Bob was a pioneer in another area critical for his field, namely standardization and precision criteria for quantitative computed tomography and dual-energy x-ray absorptiometry. Critical papers from Dr. Neer and his colleagues on the use of PTH in osteoporosis in the late 1980s using these newly developed quantitative techniques showed impressive gains in bone mineral density. This work led the way for broader interest finally in the anabolic properties of PTH. Bob then was the lead investigator in the definitive international placebo-controlled double-blind fracture prevention trial reported in the *New England Journal of Medicine* in 2001, which demonstrated the remarkable efficacy of PTH. The rest is history. PTH was approved by the FDA in 2002 as the first and still only anabolic bone therapy. Bob's role was critical to this success.

— John Potts

BERT W. O'MALLEY, MD
Baylor College of Medicine



Outstanding Innovation Award

Established in 2013, the Outstanding Innovation Award is presented to recognize an individual or team of people who have demonstrated innovation and entrepreneurship to further endocrine research or practice in support of the field

of endocrinology, patients, and society at large. *Supported by the Endocrine Society.*

Bert O'Malley is an ideal first recipient of the Endocrine Society's inaugural Outstanding Innovation Award.

Dr. O'Malley's innovative discoveries of the molecular pathways underlying steroid hormone action have had an extraordinary impact on the field of endocrinology. His early pioneering discovery that the action of steroid hormones in endocrine tissues is a consequence of their ability to regulate gene selective transcriptional responses within the nucleus changed the field of steroid hormone action leading endocrine investigators toward hormonal control of gene transcription and served as a primary stimulus for creation of the field of molecular endocrinology.

In addition to the classic hormone-dependent pathway of nuclear receptor (NR) activation, he discovered an unsuspected "ligand-independent" pathway for NR activation that is now recognized as a critical escape pathway in antagonist-resistant breast and prostate cancers. Dr. O'Malley's subsequent discovery of the steroid receptor coactivator, SRC-1, provided the essential missing link between NRs and the transcriptional machinery and uncovered the first of a functionally diverse array of more than 450 NR coregulators that mediate all NR-dependent functions. Using the SRC subfamily (SRC-1, SRC-2, and SRC-3) Dr. O'Malley then discovered a vast array of unsuspected nuclear and extranuclear biological activities of coactivators and unraveled a complex series of posttranslational modification (PTM) codes that govern their ability to execute distinct physiological programs. Using mouse genetics, he firmly established coactivators as "master regulators" of endocrine physiology that are of critical medical relevance to a broad spectrum of endocrine disorders including endocrine development, reproduction, neurobehavior, metabolism, and cancer development.

Dr. O'Malley's pioneering and innovative work in each of these areas is documented in over 700 publications and has been internationally recognized with over 60 awards and honors including membership in the National Academy of Sciences and Institute of Medicine and the nation's highest scientific honor, the National Medal of Science.

— *Orla Conneely*

DIANE ROBINS, PHD
University of Michigan



Sidney H. Ingbar Award for Distinguished Service

The Sidney H. Ingbar Award for Distinguished Service is presented in recognition of distinguished service to the Endocrine Society and the field of endocrinology. *Supported by the Sidney H. Ingbar Memorial Fund.*

Diane (Didi) Robins is the recipient of the Endocrine Society 2015 Sidney Ingbar Distinguished Service Laureate Award in recognition of her remarkable service to the success and future of the Endocrine Society. Didi became a member of the Endocrine Society in 1992 and has tirelessly contributed to the Society. Over the years, she

volunteered to serve on more than 12 different committees and editorial boards. She has served with distinction, wit, and enthusiasm.

Didi is a creative and engaging consensus builder and an unflagging worker. It was for these reasons that she was asked to take on the most important Endocrine Society committee leadership role—chairing the Annual Meeting Steering Committee (AMSC) for ENDO 2013. When she was telephoned and asked to take on this role, she replied: "Who else have you asked?" She was informed that she was the number one pick and the first telephone call. She set the tone and led with distinction, authority, and, of course, humor. Didi recalls: "The duty that best utilized all my talents, and was by far the most fun, was serving on the AMSC, and being Basic Science Chair in 2010 and Overall Meeting Chair in 2013."

Didi has served (and continues to do so!) the Endocrine Society with excellence, and the Sidney Ingbar Distinguished Service Laureate Award is a fitting recognition for her tireless efforts on behalf of the Endocrine Society and its members.

— *William F. Young, Jr.*

DOUGLAS ROSS, MD
Massachusetts General Hospital and
Harvard Medical School



**2015 Outstanding Scholarly
Physician Award**

The Outstanding Scholarly Physician Award is presented in recognition of outstanding contributions to the practice of clinical endocrinology in an academic setting. *Supported by the Endocrine Society.*

Douglas Ross was born in Boston, went to M.I.T. and Harvard Medical School, and completed his internal medicine residency and endocrine fellowship at Massachusetts General Hospital. He presently is co-director of the Thyroid Associates practice at Massachusetts General Hospital and a professor of medicine at Harvard Medical School.

Early in his career, he was the first to report on the adverse effects of subclinical hyperthyroidism on bone density. He participated in the initial multicenter trials validating the diagnostic use of human recombinant TSH for the assessment of thyroid cancer. He has been an active participant in the National Thyroid Cancer Treatment Co-operative Study Group and was lead author on its

publication regarding micropapillary thyroid cancers.

He joined *UpToDate* in 1995 as thyroid editor, organized the thyroid section, and personally authored 41 of the topics, which have been viewed by more than 600,000 readers annually. *UpToDate's* patient information topics have also helped to educate patients.

He is a frequent speaker at the annual ENDO and American Thyroid Association (ATA) meetings, and has spoken at several international meetings including the World Congresses on Thyroid Cancer (Toronto), the Thyroid Cancer International Meeting (Sao Paulo), and the International Thyroid Congresses (Buenos Aires and Toronto), among others.

He has served three terms on the editorial board of the *Journal of Clinical Endocrinology & Metabolism*, and is currently on the editorial board of *Thyroid*. He served twice on the Endocrine Society's Clinical Affairs Committee, and the ATA's Hyperthyroidism Guidelines Task force, which he currently chairs.

He is a busy clinician and sees up to 60 patients a week at Massachusetts General Hospital, including weekly sessions with endocrine fellows, medical residents, and students.

In summary, Dr. Douglas Ross, a highly accomplished clinician, scholar, teacher, and educator, is an excellent choice for, and richly deserving of, the 2015 Outstanding Scholarly Physician Award of the Endocrine Society.

— *Hossein Gharib*

SUSAN SHERMAN, MD
Aurora Medical Associates, PC



**Outstanding Clinical
Practitioner Award**

Established in 2012, the Outstanding Clinical Practitioner Award is presented in recognition of extraordinary contributions by a practicing endocrinologist to the endocrine and/or medical community.

The recipient spends 75% or more of his/her time in a non-academic clinical endocrinology practice and income, and accomplishments are substantially independent of academia (i.e., paper submissions, conducting studies, teaching, research, etc.). *Supported by the Endocrine Society.*

Susan Sherman, a graduate of the University of North Carolina undergraduate and medical schools and the Northwestern endocrinology fellowship program, represents all that is wonderful about members of our specialty.

Dedicated to patient care, she has run a solo and highly respected private practice in Denver, Colo., for more than 35 years accepting patients from all socio-economic groups. Despite juggling the demands of this practice, she has enthusiastically volunteered her time to many Endocrine Society

activities. Her perspective as a solo practitioner has been and continues to be a valuable asset for the Society in being able to address the concerns of our clinician constituency.

Her passion for outstanding patient care is nearly matched by her enthusiastic and prodigious volunteering for the Endocrine Society activities. Over the years, she has served on several Society committees including chairing the Clinical Affairs Core Committee, represented the Physicians-in-Practice on the Society's Council, and continues to represent the Society at the American Medical Association as its delegate and alternate delegate. However, her activities are not confined to the Endocrine Society; she also has taken on numerous responsibilities in the American Thyroid Association, where she currently serves on the board, and at the University of Colorado, where she is clinical professor of Medicine. In her "spare time," she has organized the highly respected Snowmass Conference in Clinical Diabetes and Endocrinology for the past 20 years. In addition, she has run the Colorado Endocrine Club since 1981, facilitating local endocrinologists to have access to the outstanding members of our specialty in an informal setting.


To be able to carry all this off not only demonstrates excellent time-management skills but most importantly shows her dedication to her patients, the promotion of endocrinology, and the education of its practitioners. Dr. Sherman is richly deserving of the Society's Outstanding Clinical Practitioner Award.

— *Robert Vigersky*

DOUBLE JEOPARDY

As obesity numbers rise, diseases associated with dysregulated metabolism are sure to see their numbers rise as well. New research provides even more causal links between obesity and breast cancer.

By Kelly Horvath



With the epidemiological evidence accumulating that obesity not only causes all of the sequelae of metabolic syndrome but also increases the risk of several cancers, research into what links obesity and cancer has revealed startling discoveries and turned what was long held to be a foregone conclusion on its head. This research becomes all the more critical with the explosion of obesity incidence.

Two of the frontrunners of this research, Evan Simpson PhD, FAA, FRSE, and Kristy A. Brown, PhD, both of MIMR-PHI Institute of Medical Research, in Clayton, Australia, and Monash University in Melbourne, and their team have focused specifically on breast cancer in the context of obesity. “Our interest has been primarily the role of local estrogen production in breast cancer in postmenopausal women,” Simpson says. Most postmenopausal breast cancers are estrogen-receptor positive, despite the ovaries having ceased to function in menopause. Simpson and colleagues set out to determine whence the estrogen originates: “The answer is, it’s made in a lot of extraglandular sites, but by far the largest of these is the adipose tissue. Because obese people have more adipose tissue, this becomes a growing source of estrogens in postmenopausal women who have a body mass index greater than 30.”

AT-A-GLANCE

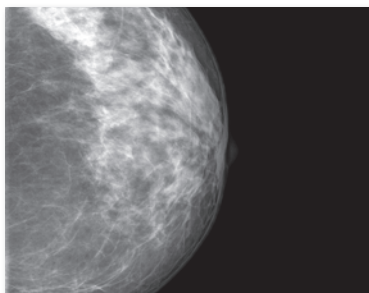
- Inflammation and dysregulated metabolism play key roles in carcinogenesis, particularly estrogen receptor–positive breast cancer in postmenopausal women.
- Obesity is the direct link between inflammation and dysregulated metabolism, inducing a positive feed-on mechanism with aromatase stimulating estrogen production, which, in turn, causes tumor proliferation.
- The adipokines leptin and adiponectin regulate AMPK in opposing fashion: Leptin downregulates AMPK activity, thereby increasing risk of carcinogenesis, whereas adiponectin upregulates AMPK activity, decreasing cancer risk.

Double Whammy

With local estrogen production within breast fat as a first clue to the relationship between obesity and breast cancer, the team started from the point of view that not only is obesity an example of dysregulated metabolism (in fact, the most prevalent example among humans), but it is also now recognized as a low-grade inflammatory condition. In *“Obesity and Breast Cancer: A Tale of Inflammation and Aromatase,”* published in *Molecular Endocrinology*, they uncovered how inflammatory mediators, such as prostaglandin E₂ (PGE₂), interleukin-6 (IL-6), and tumor necrosis factor- α (TNF α), etc., stimulate aromatase, the enzyme responsible for estrogen biosynthesis expression in fibroblast tissue. “The inflammation was one component; the other was the dysregulated metabolism,” Simpson says.

“Knowing that the anti-diabetic drug metformin has been shown in a number of epidemiological studies to be protective of a number of cancers including breast cancers, we asked ourselves, ‘how does metformin work?’” It acts by stimulating 5’ adenosine monophosphate–activate protein kinase (AMPK), which is both an important mediator of many metabolic conditions as well as a master regulator of energy homeostasis. “As we anticipated, we found that AMPK inhibits aromatase expression in the breast and, therefore, estrogen production within the breast,” he says.

They also found that AMPK is associated with other factors involved in obesity such as the adipokines leptin and adiponectin. Leptin, synthesized in adipocytes and, therefore, increased in obesity, stimulates aromatase expression (and consequently increases estrogen production within the breast). Although adiponectin is produced

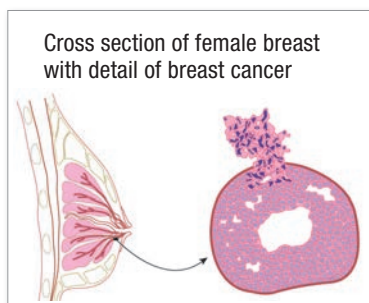


Mammogram film of female breast.

in the adipose tissue, paradoxically, its expression is inversely proportional to the degree of adiposity. Adiponectin levels also inversely correlate with breast cancer risk.

“Our work and that of others demonstrates that obesity leads to an increase in estrogen production in the breast fat. This is particularly relevant in older women who are at increased risk of developing hormone-dependent breast cancer in the absence of ovarian estrogens,” Brown says. Support for this explanation has come from studies by Dannenberg’s group at Weill Cornell Medical College and Memorial Sloan Kettering who showed that in the breast fat of obese women, aromatase expression correlates with the production of PGE₂, an inflammatory mediator (“Increased levels of COX-2 and prostaglandin E₂ contribute to elevated aromatase expression in inflamed breast tissue of obese women”). “So it all ties

in very nicely with the concept that this is a very important problem in postmenopausal women who are overweight,” Simpson says.



“...obesity leads to an increase in estrogen production in the breast fat.

This is particularly relevant in older women who are at increased risk of developing hormone-dependent breast cancer in the absence of ovarian estrogens.”

— Kristy A. Brown PhD,
MIMR-PHI Institute of Medical
Research, Clayton, Australia,
and Monash University,
Melbourne, Australia

Metabolism at the Wheel

Once the “big deal” in biochemistry, metabolism research lost ground to molecular biology and recombinant DNA technology about 20 years ago, Simpson explains. “But in the last decade or so, with the development of techniques to study the regulation of metabolism, suddenly it has leapt to the front again. It used to be thought that metabolism will follow from cell proliferation and cell growth because it is required to supply the other precursors for cell growth like amino acids, purines, pyrimidines, lipids, etc., but now we have realized that you have to turn it the other way around: Metabolism is actually recognized to be a driver of cell growth and proliferation,” he

says. In fact, in the article “*Hallmarks of Cancer: The Next Generation*” published in *Cell*, Hanahan and Weinberg reported that reprogramming of energy metabolism must be added to the list of the hallmarks of cancer, of which there are currently six as of 2011. “So obesity is one example of dysregulated metabolism in this context,” Simpson says.

The Bad News and the Good News

“With a dramatic rise in the prevalence of obesity over the last few decades, we can expect to see many more cases of breast cancer as this population ages,” Brown says. “But the identification of dysregulated metabolism as a key driver of estrogen biosynthesis within the breast also opens the door to new avenues of treatment for obese women.”

The obvious contender is metformin, which some evidence suggests could potentially be used as breast cancer treatment. “There are now many epidemiological studies being undertaken to determine whether metformin really is beneficial in the context of breast



“Metabolism is actually recognized to be a driver of cell growth and proliferation... So obesity is one example of dysregulated metabolism in this context.”

— *Evan Simpson PhD, FAA, FRSE, MIMR-PHI Institute of Medical Research, in Clayton, Australia, and Monash University, Melbourne, Australia*

cancer from both the preventative standpoint and the neoadjuvant and adjuvant standpoints. What we have done is point out a major mechanism whereby this applies, namely by stimulating AMPK, which inhibits expression of aromatase,” Simpson says. However, metformin stimulates AMPK via an indirect mechanism, and exactly how has not been fully elucidated. Developing specific agonists to stimulate AMPK is problematic because of its several isoforms and because it consists of a number of different subunits, which are expressed in a differential fashion in different tissues. “To actually nail

down one that would be stimulated by a particular drug for all purposes is proving to be a bit of a problem, but people are working on it,” Simpson says.

And for the really good news, studies of resveratrol have shown that it inhibits both breast cancer cell growth in an AMPK-dependent manner and aromatase expression.

Glass of red, anyone? **EN**

— *Horvath is a freelance writer based in Baltimore, Md. She wrote about erectile dysfunction in the December issue.*

Transitions of Care

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ENDOCRINE SOCIETY

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A Better Practice

By **Melissa Mapes**

A keystone of a successful practice is good customer service. Improving this component has become easier thanks to an array of technological advances.

All too often, medical professionals find themselves so overwhelmed with patient loads that they lose track of the administrative activities of their clinic. Ensuring quality care always comes first, but overlooking the other aspects of the “patient experience” may impact outcomes of both the health and economic variety.

Testing Patience

Imagine walking into a compact, windowless office with dull white walls. Fellow patients sit in a line of generic waiting room chairs. A coffee table is stacked with the proverbial old magazines and a lone bottle of instant hand sanitizer. The receptionist barely glances up as she points to the sign-in sheet on the counter. You fill in your name, appointment time, arrival time, and check the “yes” box next to “Are you a new patient?”

The next 15 minutes are spent filling out the ubiquitous insurance and medical history paperwork that you have encountered numerous times throughout your life. About 20 minutes after that, the medical assistant finally calls you back into an exam room. When she takes your blood pressure, you notice that the cuff is strapped on upside down, but you decide not to say anything since, after all, you are not the expert.

While certainly not a universal experience, worst-case scenarios such as this are not unusual in the U.S. healthcare system. Excessive waiting time, apathetic admins, and medical errors — even minor ones — may lead patients to seek another provider, launch a malpractice suit, or discontinue care altogether.

Foremost Grievances

Rudeness and indifference from both office staff and physicians comprised a combined 78.4% of patient complaints, according to a Vanguard Communications survey of over 3,600 negative online reviews of providers. That is more than triple the number of complaints about medical skills or errors, which made up 21.5% of the pie.

Although some may scoff at online reviews, they offer medical professionals unfiltered insight into the patient experience at their operation. This information can help identify both areas of improvement and areas of high achievement.

One school of thought encourages providers to think of patients as customers or “clients,” depending on one’s preference. People do not stop being consumers, nor do they drop their expectations of customer service, when it comes to their healthcare.

As a result, the model for providing medical care is evolving. New technology and policies are facilitating changes in day-to-day operations.

Digital Efficiency

Concerns about privacy with cloud data storage and Internet-based software make many providers squeamish. These worries are not unfounded, but the proliferation of digital data in healthcare is inevitable.

Reservations and appointments of all kinds can be made on the Internet, and people are coming to expect this service for healthcare as well. Scheduling appointments by phone can be tedious and become a barrier that stops some patients from seeking the care, especially if office staff is rude, fails to return calls, or places patients on an extended hold.

The relatively new online service, ZocDoc, allows patients to find providers of any specialty that are within their insurance network and view available appointment times. They can then easily book a time that works for them and have the option of filling out all insurance and medical history forms online in advance. ZocDoc emails multiple reminders to make sure patients remember their appointment.

After the visit, ZocDoc asks patients to send feedback and post a review about the experience. The service holds practices accountable for certain issues, such as cancelling or changing a patient's appointment without adequate notice and waiting times of inordinate length.

Another new venture is One Medical Group — a system of primary care providers that claims to offer “clinical excellence with a modern approach” through “customer-centered design, smart application of technology, and a team of talented primary care providers who have the time and tools to make the right decisions.”

Patients can make same-day appointments that are guaranteed to start on time. Additionally, they can book appointments and renew prescriptions through an app or the company's website, have their lab tests conducted on site, get treated for common medical issues through video visits, directly email their provider, and other convenient services.

One Medical Group operates on a membership business model that costs individuals \$199 per year, and treatment is covered by most insurance providers. The growing success of the company supports the idea of treating patients as clients.

No Train, No Gain

Both ZocDoc and One Medical work to ensure that their employees provide the kind of patient interactions that will keep people coming back. Complaints about rude office staff can be forestalled by following two rules: Hire individuals with strong people skills and organizational abilities, and make sure to provide regular training and oversight.

It is nearly as important for staff to exercise good

Rudeness and indifference from both office staff and physicians

comprised a combined 78.4% of patient complaints.

— Vanguard Communications survey of over 3,600 negative online reviews of providers

bedside manner as it is for providers. All sorts of personalities and attitudes come seeking medical care, and the person working at the front desk and answering phones needs to have the patience and empathy to make clients feel comfortable.

Once a staff of qualified employees is in place, they must receive regular training. A ZocDoc-like service will do no good if the administrative assistants do not know how to properly update appointment availability and process paperwork submitted online through the system.

Even traditional methods of communication require guidance. A script should be provided for phone calls both made and received on a variety of important topics, e.g., what to say and do when a distressed patient calls, how to respond to rude or uncooperative clients, and what information can and cannot be left on voice mail.

Small changes like these can yield large rewards. Though some may like the term “patient” better than “customer” or “client,” the goal of these groups is the same: Provide the best possible healthcare. Adaptation to new technology and sufficient training are key to achieving this noble ambition. **EN**

— Mapes is a Washington, D.C.-based freelance writer and a frequent contributor to Endocrine News. She wrote about the “Plan B” pill and overweight women in the August issue.



HOW EFFICIENT IS YOUR OFFICE?

According to the American Academy of Family Physicians, you can get an idea of the patient experience at your practice with several easy tests:

- Call your office in the morning on a weekday, and try to make an appointment.
- Dial into your automated phone system, and then try to speak to a human.
- Ask your clinical staff how much time they take looking for test results after the patient has been placed in the exam room.
- Check the time when you enter your office each morning and again when you enter your first patient room. Has the appointment started as scheduled?

For tips on making improvements to efficiency, go to www.aafp.org/fpm/2010/1100/p28.html.



MASS SPECTROMETER: THE MVP OF ENDOCRINE RESEARCH

Created at the end of the 19th century, the mass spectrometer has become the most valuable device in endocrine research.

By **Melissa Mapes**

Scientists have a lot of tools to choose from but generally rely on the same handful to complete the day-to-day tasks involved in their research. Few, if any, labs could function without pipets, centrifuges, and freezers. However, one type of instrument stands alone as arguably the most important technology for contemporary endocrinology: mass spectrometers.

Detailed Analysis

Kevin Yarasheski, PhD, professor and assistant director of the Biomedical Mass Spectrometry Research Facility at Washington University in St. Louis, sees spectrometry as the primary analytical platform for any endocrinology laboratory. “Gas chromatography-mass spectrometry and liquid chromatography-mass spectrometry are the most critical assets for my research,” he explains.

By providing the greatest sensitivity for identifying, characterizing, and quantifying the broad range of organic molecules involved in disease pathogenesis — including proteins, carbohydrates, lipids, nucleotides, and chemically modified forms of these biomolecules — mass spectrometers allow for a high level of accuracy in diagnosis and treatment monitoring.

For Yarasheski, this exactitude makes his work possible. His research focuses on identifying the pathogenesis and potential treatments for metabolic-endocrine

complications in HIV/AIDS, Alzheimer’s disease, obesity, diabetes, and advanced age.

He uses other state-of-the-art biotechnologies as well, such as magnetic resonance spectroscopy and positron emission-computed tomography. But mass spectrometry offers specific quantitation of the various hormones, signaling molecules, and metabolites that cannot be beat.

Origins of Discovery

Among the many inventions born from the Second Industrial Revolution came the mass spectrograph, an amalgamation of imaginative devices that began its evolution at the tail end of the 19th century with British physicist J.J. Thomson.

By directing ionized neon through both electric and magnetic fields and analyzing how far the particles were deflected, Thomson found that the particles behaved varyingly. He thus concluded that they must have differing masses.

It would be Thomson’s assistant, though, to bring to life the mass spectrograph 20 years later.

Francis W. Aston experimented with updates and improvements to Thomson’s instrument until finally devising a tool that would allow him to confirm the existence of isotopes — a discovery that ultimately won him the Nobel Prize in Chemistry in 1922.

As World War II neared, the mass spectrometer took on a new role. Only this device could answer questions about nuclear fission, and so it became a tool of the scientists in the Manhattan Project, which developed the first atomic bombs. Although the results of this research would lead to wartime devastation, the mass spectrometer gained greater recognition in the scientific community for its other potential uses, from testing petroleum samples for oil companies to drug discovery.

The latter half of the 20th century saw many refinements to mass spectrometer technology that expanded its applications for a wide range of scientific endeavors, especially medical research. In 2002, Koichi Tanaka and John Bennett Fenn each received one-quarter of the Nobel Prize in Chemistry for developing a new way to analyze biological macromolecules using mass spectrometry — demonstrating the enormous advantages of the new generations of the instrument.

Spectrum of Findings

Today, the mass spectrometer is ubiquitous in healthcare laboratories. It sequences oligonucleotides for genomic tests, finds disease biomarkers for clinical diagnoses, monitors enzyme reactions for proteomic analysis, and outlines the structures of metabolites and drugs. In the complex field of endocrinology, such activities have proven invaluable.

The advances that have occurred in medicine with the help of mass spectrometry are so far-reaching that the entirety would take ages to list. Endocrine researchers are coming to depend on this technology more and more to pursue growing areas of interest.

According to an article in the *American Journal of Clinical Pathology* titled “Current and Future Applications of Mass Spectrometry to the Clinical Laboratory,” one of these major areas is vitamin D.

“The increase in testing for vitamin D has resulted in a dramatic amplification in interest and implementation of clinical mass spectrometry,” it states. Immunoassays cannot accomplish some of the tasks that mass spectrometry can, such as separating out vitamin D2 from vitamin D3.

The authors go on to describe how “a lack of specificity and accuracy at low concentrations in many steroid immunoassays has contributed to mounting frustration in the diagnosis of endocrine disorders and has led several medical groups to recommend mass spectrometry as the preferred method of analysis.”

The growing demand for mass spectrometry in endocrine research does not come without certain obstacles, however. “The application of mass spectrometry to steroid analysis has not been free of challenges and requires a high degree of technical competence, skill, and experience to provide the needed improvement for measures of endocrine function,” the authors explain.

The Next Generation

Mass spectrometry includes increasingly complicated machinery that requires more and more training for experts to operate. The equipment has come a long way from the rudimentary mass spectrograph that Aston

Eight Types of MASS SPECTROMETERS

1. **Agilent (HP) 7890/5975 single quadrupole GC-MS:** Offers standard methods for analyzing samples using open access software (ChemStation).
2. **Bruker micrOTOF-Q II hybrid quadrupole-time of flight, Agilent 1260 UPLC-MS:** Has a variety of applications like “small molecule accurate mass determination, intact protein analysis, peptide mapping,” and more.
3. **Bruker Scion TQ triple quadrupole GC-MS:** Offers trace-level analysis of metabolites and other small molecules with “outstanding selectivity.”
4. **Maldi Microflex LRF:** “Specialized for protein, peptide, and polymer analysis,” and can provide “high mass accuracy characterization” and increased resolution.
5. **Micromass Quattro Premier triple quadrupole, Agilent 1100 HPLC-MS:** Best for “quantitative work and selective of targeted analytes” from complex matrices like serum, tissue, and cell culture.
6. **Thermo Exactive benchtop Orbitrap, Waters Acquity UPLC-MS:** “Generates high resolution, high mass accuracy full MS data” and offers chromatography and ionization.
7. **Thermo LTQ XL ion trap, Agilent 1100 HPLC-MS:** Used for a variety of tests and can be configured for either electrospray ionization or atmospheric pressure chemical ionization.
8. **Thermo LTQ-Orbitrap Velos, Eksigent nanoLC-2D, Michrom/Bruker CaptiveSpray source:** Performs proteomic tests, including binding partners, post-translational modifications, and quantitative work using proteolytic digests and database searches.

created nearly a century ago.

Today, scientists like Yarasheski rely on newer renditions like gas chromatography mass spectrometers and liquid chromatography mass spectrometers to analyze complex gas and liquid samples. Stanford University, for example, has 11 varying types of mass spectrometers in its laboratories, each capable of different tests.

Thanks to these devices, diagnoses of endocrine disorders in newborns have greatly advanced, and future therapies for diseases like Alzheimer’s seem to be on the horizon. Although the knowledge and skill required to use modern spectrometers may intimidate some, the accuracy they provide has rocketed them to the forefront of medicine.

Yarasheski anticipates that research publications will soon cease to accept certain types of research that excludes the technology.

“In the near future, peer-reviewed endocrine journals will demand that manuscripts report protein/peptide hormone and biomolecule concentrations quantified using mass spectrometry platforms,” he says. “Manuscripts will be rejected if they don’t adhere to this analytical demand.”

As a result, according to Yarasheski, mass spectrometrists are scrambling to develop and validate quantitative mass spectrometry-based assays for all protein/peptide hormones and biomolecules of interest so that they can duly serve their endocrine clients.

If this prediction comes to fruition, soon endocrinologists worldwide will rely on mass spectrometers in their laboratories more than ever before. **EN**

— *Mapes is a Washington, D.C.-based freelance writer and a frequent contributor to Endocrine News. She wrote about the “Plan B” pill and overweight women in the August issue.*



Congress Must Act on Medicare Physician Payment by March 31; Cost of SGR Repeal Increases Making Permanent Fix Unlikely in the Coming Year

The Congress has until March 31 to pass legislation to avert a 21% Medicare physician payment cut. As Congress moves forward in considering options to replace the sustainable growth rate (SGR) formula, a \$30.5 billion increase in the cost of repeal may make a temporary patch the only option for the coming year. Last November, the Congressional Budget Office estimated that the cost of repealing the SGR would be \$144 billion; however, revised projects now indicate that this cost has risen to almost \$175 billion. While there is much agreement on an alternative payment system with which to replace the SGR, the lack of agreement on how to pay for such repeal will likely preclude Congress from passing a permanent fix in the coming year.

The continued delay of a permanent fix to the SGR results in increased cost for repeal each year. The Endocrine Society and other medical societies are urging Congress to pass a permanent solution to this ongoing and increasingly problematic payment system. However, if Congress cannot agree on how to pay for a permanent repeal, the Society would approve of a temporary patch as long as there was meaningful work toward a permanent solution.

TAKE ACTION: Join the Endocrine Society's online advocacy campaign at www.endocrine.org/advocacy to tell your Congressman to pass a permanent solution to the SGR before March 31.

President Obama Proposes FY 2016 Budget, Precision Medicine Initiative

On February 2, President Barack Obama released his fiscal year (FY) 2016 budget, providing more detail about his policy priorities.

The president's budget proposes to reverse the pending sequestration cuts for defense and nondefense programs. A summary of the Obama request notes that "in the absence of congressional action, nondefense discretionary funding in 2016 will be at its lowest level since 2006, adjusted for inflation." The president replaces sequestration with alternative spending cuts,

tax increases, and enhanced efforts to reduce waste, fraud, and abuse in government programs.

Under the Obama proposal, the National Institutes of Health (NIH) would receive \$31.3 billion, a \$1 billion or 3.3% increase over FY 2015. All of the federal science agencies would receive funding increases as well. A summary of the NIH budget notes that "in establishing funding priorities, NIH must maintain strong, diverse investments in basic science; the development of effective diagnostics, treatments, and preventative measures for common and rare diseases; and the need to sustain a vital and cutting-edge workforce and scientific infrastructure."

The agency also states that a "significant portion of the \$1 billion increase will be devoted to raising the number of new and competing research project grants (RPG)." The NIH estimates that the FY 2016 budget will support:

- 10,303 competing RPGs, an increase of 1,227 above the projected FY 2015 total;
- A total of 35,447 RPGs, an increase of 1,241 above the projected FY 2015 total;
- An average cost of \$461,000 for new and competing RPGs, similar to the FY 2015 level.

Obama's request expands funding for several other areas of the NIH budget, including:

- A \$23 million increase for research and training to support an additional 204 full-time training positions;
- A 2% increase above the FY 2015 level for trainee stipends;
- A \$95 million increase for intramural research.

As outlined in the State of the Union speech, the NIH will also receive a total of \$215 million to implement the new Precision Medicine Initiative. This includes \$130 million to launch a national research cohort of more than one million individuals who will voluntarily share their genetic information to improve the understanding of health and disease. Another \$70 million will be directed to the National Cancer Institute to expand ongoing cancer genomics research and develop more effective treatments for specific types of tumors.

President Obama's proposal is just a starting point for the congressional debate over the budget and appropriations. The Society is pleased that the administration's FY 2016 budget request restores the harmful cuts to nondefense discretionary programs, including



the NIH. By replacing sequestration with a balanced approach to deficit reduction, the President provides \$37 billion to make new strategic investments in education, public health, science, and infrastructure. Importantly, the President's budget also recognizes that both defense and nondefense programs contribute equally to the American way of life, and that each deserves equal relief from sequestration. However, the Society remains concerned that funding for biomedical research and other important discretionary health programs remains too low under the Budget Control Act.

TAKE ACTION: Join the Society's on-line advocacy campaign at www.endocrine.org/advocacy to urge your congressional delegation to support NIH.

Members of Congress Introduce Various Bills to Support NIH Funding

As the Congress begins debate on the budget, several champions of medical research have introduced legislative proposals to bolster funding for the National Institutes of Health (NIH).

Senator Dick Durbin (D-IL) introduced the American Cures Act to support the future of research at the NIH, the Centers for Disease Control (CDC), the Department of Defense Health Program (DHP), and the Veterans Medical & Prosthetics Research Program. Senator Durbin first introduced this legislation during the previous Congress last year after meeting with former Society President Teresa K. Woodruff. Senator Durbin attended ICE/ENDO last June to receive the Society's Champion of Biomedical Research Award. He urged Society members to advocate for research funding.

The American Cures Act would reverse the decline in grant funding by setting a steady growth rate in federal appropriations for biomedical research conducted at the NIH, CDC, DHP, and the Veterans Medical & Prosthetics Research Program. Each year, the bill would increase funding for each agency and program at a rate of GDP-indexed inflation plus 5%.

The American Cures Act is co-sponsored by Senators: Sherrod Brown (D-OH), Amy Klobuchar (D-MN), Barbara Boxer (D-CA), Edward J. Markey (D-MA), Ben Cardin (D-MD), Al Franken (D-MN), and Bob Casey (D-PA).

In addition, Senators Elizabeth Warren (D-MA), Ben Cardin (D-MD), Sherrod Brown (D-OH), and Tammy

Baldwin (D-WI) introduced the Medical Innovation Act, a bill that would boost funding for critical medical research. Congressman Chris Van Hollen (D-MD) plans to introduce the Medical Innovation Act in the House of Representatives with Representatives Jan Schakowsky (D-IL), Peter Welch (D-VT), and Kathy Castor (D-FL). The legislation would require large pharmaceutical companies that break the law and settle with the federal government to reinvest a small percentage of their profits into the NIH. If the policy had been in place, over the past five years, the NIH would have had nearly \$6 billion more every year to fund thousands of new grants to scientists and universities and research centers around the country — almost a 20% increase in NIH funding.

The Society will continue to monitor this legislation and apprise the membership of developments.

Meet the Guideline Experts Sessions to be Launched at ENDO 2015

Attendees at **ENDO 2015** will have the opportunity to meet and talk with the authors of the Society's newest clinical practice guidelines. Come to the Endocrine Society booth from 1:30 to 2:30 pm each day to have your questions answered by those that know the guidelines the best.

- Thursday: Treatment of the Symptoms of Menopause — 1:30 to 2:30 pm
- Friday: Acromegaly — 1:30 to 2:30 pm
- Saturday: Pharmacological Management of Obesity — 1:30 to 2:30 pm



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Doc,
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and my genomics
work together, they
tell a very compelling
story.

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References: **1.** Alexander EK, Kennedy GC, Baloch ZW, Cibas ES, Chudova D, Diggans J, et al. Preoperative diagnosis of benign thyroid nodules with indeterminate cytology. *N Engl J Med.* 2012;367:705-715; **2.** Alexander, Schorr M, Klopper J, Kim C, Sapos J, Nabhan F, Parker C, Steward DL, Mandel SJ, Haugen BR. Multi-center experience with the Afirma Gene Expression Classifier. *J Clin Endocrinol Metab.* 2014; 99(1):119-25; **3.** Duick DS, Klopper J, Diggans JC, et al. The impact of benign gene expression classifier test results on the endocrinologist-patient decision to operate on patients with thyroid nodules with indeterminate FNA cytopathology. *Thyroid.* 2012;10:996-1001.

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as qualified to perform high-complexity clinical testing.



Endocrine Society Releases Two New Books at ENDO 2015

Following the success of the Endocrine Society's first book— *Endocrine and Metabolic Medical Emergencies* — released last year at ICE/ENDO 2014 in Chicago, **ENDO 2015** will see the release of two new titles, *Molecular Nutrition: A Practical Guide* and *A Clinical Approach to Endocrine & Metabolic Diseases Volume 3*.

Molecular Nutrition: A Practical Guide, edited by Jeffrey I. Mechanick, MD; Michael A. Via, MD; and Shan Zhao, PhD, addresses the discrepancy between increased prevalence rates of chronic disease and improved knowledge regarding the interactions between the foodome and nutri-epigenome/metabolome.

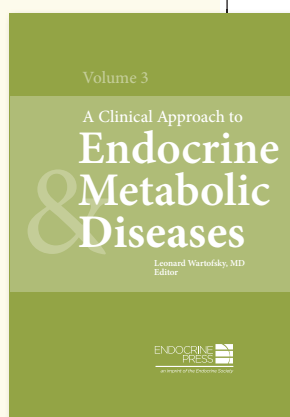
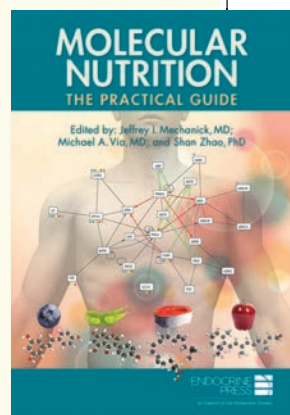
The text provides a practical, step-by-step approach to molecular nutrition by outlining the fundamentals of nutritional medicine, providing examples of healthy eating patterns, and introducing target molecules in the metabolome and nutrient molecules in the foodome. The main objective is to present this new paradigm of clinical nutrition as a novel protocol for easy implementation and success by healthcare practitioners in routine patient care settings. *Molecular Nutrition: The Practical Guide* presents nutritional medicine in a brand-new way, one that not only offers a great deal of information for the clinician, but also one that inspires and causes one to ponder deeper questions about physiology and how clinicians can optimize care of patients.

A Clinical Approach to Endocrine & Metabolic Diseases, Volume 3,

edited by Leonard Wartofsky, MD, is the third in a series of compilations of timely articles describing recommended clinical approaches to the diagnosis and management of patients with a variety of challenging endocrine problems. These up-to-date review articles have been selected from *The Journal of Clinical Endocrinology & Metabolism (JCEM)*, and they address everyday issues facing the endocrinologist in clinical practice.

"The topics selected reflect thorny clinical problems in both adult and pediatric endocrinology that clinicians face every day in their practice," Wartofsky writes. The authors share their own personal approaches to covering a number of controversial and difficult topics, from the adolescent patient seeking contraception and the approach to treating a transgender patient, to navigating a number of difficult issues in reproduction and treating thyroid cancer.

Look for these two new texts at **ENDO 2015**, both of which should provide valuable insight to the ever-changing world of clinical care. **EN**



Virtual Press Conference Generates Interest in **Obesity Guideline**

The Endocrine Society held its first-ever virtual press conference to introduce the Clinical Practice Guideline on the pharmacological management of obesity on January 15.

Caroline M. Apovian, MD, the chair of the Pharmacological Management of Obesity Clinical Practice Guideline task force, presented the recommendations to journalists. The Society used a webinar format to make it convenient for reporters from a variety of outlets to participate.

Nine journalists from outlets such as *Medscape*, *MedPage Today*, *Endocrine Today*, *Scientific American White Papers*, and diabetes blog *Close Concerns* attended the press conference. Additional outlets including the wire service HealthDay covered the guideline's release.

The event marked the first time the Society used webinar technology to deliver a breaking news announcement. The Society previously held media webinars to educate reporters on key topics such as endocrine-disrupting chemicals and childhood obesity. To view recordings of the Society's webinars, visit www.endocrine.org/news-room/media-webinars.

The Society's Ailene Cantelmi Recognized by ACGME & ABMS



Ailene Cantelmi, associate director, accreditation, assessment, and online learning for the Endocrine Society, was recognized by a special commendation for her work on the ACGME Next Accreditation System (NAS) Reporting Milestones Project.

A joint initiative by the Accreditation Council for Graduate Medical Education (ACGME), the American Board of Internal Medicine (ABIM), and the Alliance for Academic Internal Medicine (AAIM), Reporting Milestones were developed to assess measurable outcomes for fellowship training programs.

Over the course of the past three years, milestones have been developed for every specialty accredited by ACGME; most recently, this has extended to the subspecialties of internal medicine, which began using the Reporting Milestones in 2014. For her part, Cantelmi was instrumental to support the society members who were there as well as provide input on the continuum of medical training.

La'Pelusa Named Hopps Defense Research Scholar



Society associate/in-training member Andrew La'Pelusa, a senior biology major, has been named a Dr. John H. Hopps Jr. Research Defense Scholar at Morehouse College in Atlanta.

La'Pelusa is currently serving in multiple capacities during his senior year at Morehouse, including as the president of the Morehouse College Health Careers

Society and Cadet Battalion Executive Officer for the Army ROTC Panther Battalion. La'Pelusa, who aspires to obtain an MD/PhD and work in neuroendocrinology and behavioral endocrinology, says his dream is to “develop new treatments and systems to treat PTSD [post-traumatic stress disorder].”

As a budding young physician scientist, the Hopps Scholarship will allow La'Pelusa to build a strong foundation of entrepreneurship and innovation by doing meaningful research every semester and summer. “They also allow students to travel to poor communities to study health disparities alongside trips to top universities across the United States,” he says, adding that he has “been given the chance to mentor several classes of scholars that enrolled after me, an experience that will help me grow as a man as much as it will help the mentees. Hopps develops students holistically, and I am grateful to be a part of it.”

La'Pelusa credits the Endocrine Society with helping him in his career path by providing essential professional development activities and training in top-notch endocrine research labs. “I have found the Endocrine Society faculty and staff to be more than a Society but more like a family,” he says. “Opportunities such as the Minority Access Program are filled with people both welcoming and ready with insightful and helpful advice. The mentorship I receive in the

Endocrine Society has motivated me to become a leader within my own class. Mentors such as Dr. Mark Lawson, Dr. Robert Virgersky, and Dr. Steven Anderson are undoubtedly exceptional individuals that have shaped my character and determination to continue towards my dream.”

Named after Dr. John H. Hopps, Jr., a former provost, senior vice president for academic affairs, and professor of physics at Morehouse, and a former under-secretary of defense, the Hopps Defense Research Scholars Program was founded in 2006 to increase minority participation in scientific research, in math and science education, and in emerging technological fields. **EN**

— Mark A. Newman

Society Praises ABIM's Overhaul of MOC Requirements

The Endocrine Society commended the American Board of Internal Medicine (ABIM) for revamping its Maintenance of Certification (MOC) program in response to widespread outcry from the physician community.

ABIM announced in February that it would suspend some aspects of the MOC program and substantially change others. The Society and other organizations representing nearly all internal medicine subspecialties had raised concerns about unintended consequences of changes made to the program in the past year.

“We are satisfied that the ABIM has heard our concerns and is responding with appropriate changes to the MOC program,” says Society president Richard J. Santen, MD. “We fully support the concepts of continuous learning, improvement, and self-regulation that the ABIM espouses and recognize that the changes outlined are designed to enhance these processes.”

ABIM incorporated many of the changes the Society called for, including adjustments to the MOC program's fee structure, exam structure, and approved activities. These changes will relieve bureaucratic burdens on physicians and allow them to devote more time to providing patient care.

“While ABIM is making key strides in improving the program, the Society continues to call for an evidence-based approach to determine how the MOC system can best support the delivery of quality patient care,” Santen says. “The Society is looking forward to continuing our collaboration with the internal medicine community and the ABIM to ensure the MOC program and the secure exam evolve in a way that is meaningful, supports physician learning, and improves patient care.” **EN**

Newsweek Highlights Society's Policy Position on EDCs

Newsweek featured the Society's policy stance on endocrine-disrupting chemicals (EDCs) in an article published January 23.

The Society has called on the U.S. Food and Drug Administration (FDA) and other agencies to take endocrine principles into account when regulating EDCs. The Newsweek article noted that the Society was disappointed with the FDA's recent safety assessment that found BPA in food does not present a significant health threat.

"While conclusive evidence is lacking, sound scientific studies indicate a strong possibility for adverse health effects," *Endocrinology* Editor-in-Chief Andrea Gore, PhD, commented on behalf of the Society. "It is the responsibility of the government to adopt measures

that protect people from the risk of exposure to certain chemicals."

Society members Niels Skakkebaek, MD, MDSc, and Frederick vom Saal, PhD, also were quoted in the story, which discussed a *PLoS Genetics* study on BPA and male fertility.

Society staff began building a relationship with the Newsweek journalist on Twitter and then reached out to offer assistance with future articles on EDCs. The outreach effort led to an opportunity to comment on the study as well as the FDA report.

Newsweek has more than 2 million monthly visitors to its website and a print circulation of 70,000. The complete article can be accessed at: <http://www.newsweek.com/bpa-disrupts-sperm-development-linked-declining-male-fertility-301509>

HHN to Debut New Interactive Tool at ENDO 2015

Members attending **ENDO 2015** in San Diego will be able to get a firsthand look at the Hormone Health Network's (HHN) new interactive Journey Through the Endocrine System.

Journey Through the Endocrine System is an interactive, fly-through animation of the glands and organs of the endocrine system that is more than simply a "point and click" interactive map; it enables the user to travel through the body with the hormone (i.e., insulin, estrogen, testosterone, etc.) and see the effect it has on the human body.

"This is one platform with endless applications for visualizing anatomy, disease, treatments, and health

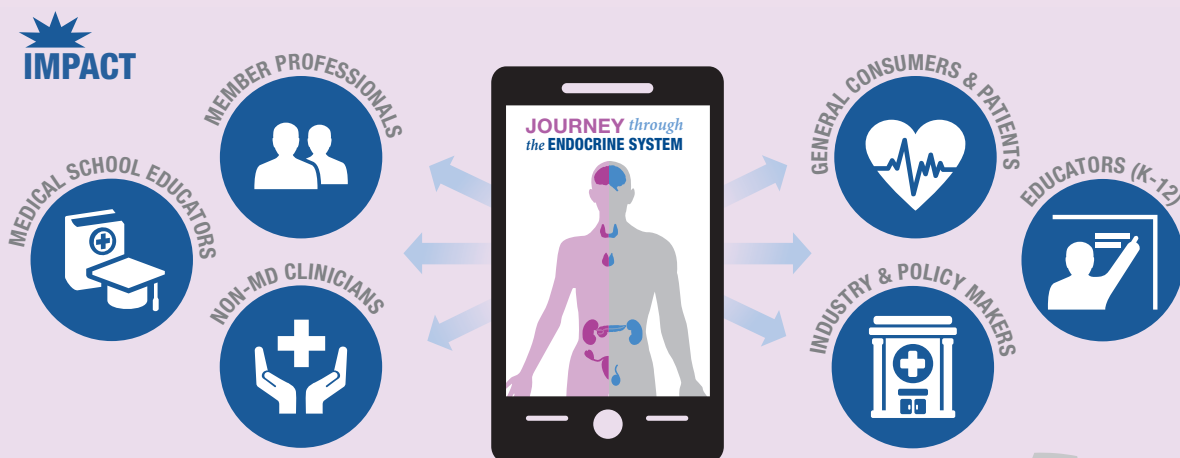
information—all in an interactive 3D format," says Cheretta Clerkley, director of the Hormone Health Network. "This award-winning technology positions the Society to reach new audiences and more importantly is a tool that allows us to communicate what the endocrine system does, which ultimately raises the profile of endocrinologists."

This 3-D concept came to fruition in 2014 after HHN received approval from the Society's Council to develop an interactive 21st-century solution to enhance the understanding of the intricacies of the endocrine system. Through the use of contemporary technology, it is easier to tell a comprehensive story of the endocrine system and

its related conditions.

In addition to offering a web-based version, there will also be a mobile app to make it easy for healthcare providers to communicate with their patients and for patients to understand their conditions. These apps can also be used in educational settings to teach and inform students about the importance of the endocrine system and the pivotal role it plays in the body.

Members will have the opportunity to see a sneak peak of the tool, provide feedback, and recommendations at **ENDO 2015** to help staff get a baseline of how to create a tool that meets the needs of providers before the summer of 2015 launch.




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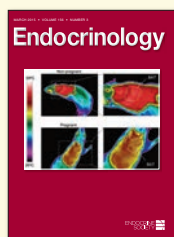
The following studies, among others, will be published in Endocrine Society journals. Before print, they are edited and posted online in each journal's Early Release section. You can access the journals at www.endocrine.org.



Random Blood Glucose: A Robust Risk Factor for Type 2 Diabetes • Michael E. Bowen, Lei Xuan, Ildiko Lingvay, and Ethan A. Halm • *A single RBG ≥ 100 mg/dL is more strongly associated with undiagnosed diabetes than traditional risk factors. Abnormal RBG values are a risk factor for diabetes and should be considered in screening guidelines.*

Arterialized Venous Bicarbonate Is Associated with Lower Bone Mineral Density and an Increased Rate of Bone Loss in Older Men and Women • L.S. Tabatabai, S.R. Cummings, F.A. Tylavsky, D.C. Bauer, J.A. Cauley, S.B. Kritchevsky, A. Newman, E.M. Simonsick, T.B. Harris, A. Sebastian, and D.E. Sellmeyer • *Arterialized plasma HCO_3^- was associated positively with cross-sectional BMD and inversely with the rate of bone loss, implying that systemic acid-base status is an important determinant of skeletal health during aging. Ongoing bone loss was linearly related to arterialized HCO_3^- even after adjustment for age and renal function. Further research in this area may have major public health implications, as reducing dietary net acid load is possible through dietary intervention or through supplementation with alkaline potassium compounds.*

Two-Year Changes in Bone Density after Roux-En-Y Gastric Bypass Surgery • Elaine W. Yu, Mary L. Bouxsein, Melissa S. Putman, Elizabeth L. Monis, Adam E. Roy, Janey S.A. Pratt, W. Scott Butsch, and Joel S. Finkelstein • *Substantial bone loss occurs throughout the 24 months after gastric bypass despite weight stability in the second year. Though the benefits of gastric bypass surgery are well established, the potential for adverse effects on skeletal integrity remains an important concern.*



Metabolic Changes Induced by the Biliopancreatic Diversion in Diet-Induced Obesity in Male Rats: The Contributions of Sleeve Gastrectomy and Duodenal Switch • Elena-Dana Baraboi, Wei Li, Sébastien M. Labbé, Marie-Claude Roy, Pierre Samson, Frédéric-Simon Hould, Stéphane Lebel, Simon Marceau, Laurent Biertho, and

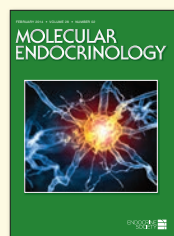
Denis Richard • *Altogether the results of this study suggest that the DS component of the BPD/DS, which led to a reduction in digestible energy intake while sustaining energy expenditure, plays a key role in the improvement in the metabolic profile led by BPD/DS in rats fed a HF diet.*

Brain Innate Immunity Regulates Hypothalamic Arcuate Neuronal Activity and Feeding Behavior • Wagner L. Reis,

Chun-Xia Yi, Yuanqing Gao, Mathias H. Tschöp, and Javier E. Stern • *These studies support a major role for a TLR4-mediated microglia signaling pathway in the control of ARC neuronal activity and feeding behavior.*

Androgens Regulate Bone Marrow B Lymphopoiesis in Male Mice by Targeting Osteoblast-Lineage Cells • Anna S. Wilhelmson, Alexandra Stubelius, Anna E. Börjesson, Jianyao Wu, Anna Stern, Stephen Malin, Inga-Lill Mårtensson, Claes Ohlsson, Hans Carlsten, and Åsa Tivesten • *Androgens exert inhibitory effects on bone marrow B lymphopoiesis in males by targeting the AR in osteoblast-lineage cells. The identification of the likely target cell for androgen-mediated regulation of bone marrow B lymphopoiesis will contribute to elucidation of the mechanisms by which androgens modulate immune-related disorders.*

Novel Three Dimensional Human Endocervix Cultures Respond to 28-Day Hormone Treatment • Sevim Yildiz Arslan, Yanni Yu, Joanne E. Burdette, Mary Ellen Pavone, Thomas J. Hope, Teresa K. Woodruff, and J. Julie Kim • *In summary, a robust, novel 3D endocervical culture was developed and physiologic responses to the menstrual cycle mimic of estradiol and progesterone levels for a period of 28 days were identified.*



Nuclear Receptor Coregulators of the p160 Family: Insights into Inflammation and Metabolism • David A. Rollins, Maddalena Coppo, and Inez Rogatsky • *Here, the authors review the evolving and, at times, contradictory, literature on the pleiotropic functions of NCOA1/2/3 in inflammation and metabolism as related to*

nuclear receptor actions and beyond. They then briefly discuss the potential utility of NCOAs as predictive markers for disease and/or possible therapeutic targets once a better understanding of their molecular and physiological actions is achieved. Nuclear receptor signaling in inflammation and metabolism.

Inflammation and ER Stress Regulate Branched Chain Amino Acid Uptake and Metabolism in Adipocytes • Joel S. Burrill, Eric K. Long, Brian Reilly, Yingfeng Deng, Ian M. Armitage, Philipp E. Scherer, and David A. Bernlohr • *These results indicate that inflammation and ER stress attenuate lipogenesis in visceral adipose depots by down regulating the BCAA/TCA metabolism pathway and are consistent with a model whereby the accumulation of serum BCAA in the obese insulin-resistant state is linked to adipose inflammation.*

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