INNOVATION AND THE FUTURE
VISION STATEMENT

Gaining national and international recognition as the leading endocrine division in the treatment, prevention, and care of diabetes, endocrine, and metabolic disorders.

MISSION STATEMENT

To provide the highest quality care to our patients, and to improve the outcomes of patients with diabetes, endocrine, and metabolic disorders. To be at the forefront and cutting edge of research on endocrine diseases and diabetes and to excel in providing the best educational programs to trainees and patients. To develop innovative quality improvement programs to achieve the highest quality standards in patient care.
Dear friends and colleagues,

It gives me great pleasure and pride to present an overview of the Hilda & J. Lester Gabrilove Division of Endocrinology, Diabetes, and Bone Disease, one of the top ranked divisions in the nation. It was at Mount Sinai training as a fellow, at the bedside and at the bench-side, that I was first introduced to, and enchanted by, the wonders of endocrinology.

I began my lifelong work on the mechanisms leading to the development of autoimmune thyroiditis and type 1 diabetes under the astounding mentorship of former Division Chief Terry F. Davies, MD, FRCP. Under his leadership, the Division established outstanding research, clinical, and training programs. I am humbled by the fact that I will be leading the Division that is the home of my remarkable mentors and teachers.

I am particularly proud of our fellowship program, long regarded as one of the best. Like me, nearly 20 former Mount Sinai fellows are currently faculty members. The fellowship program continues to grow and attract the top graduates from the nation’s leading residency programs. As our program continues to flourish, our goal is to draw and train the future leaders in our field, both outstanding clinician-endocrinologists and physician-scientists.

I feel fortunate to step into the leadership role in the wake of Derek LeRoith, MD, PhD. Under his leadership, the Division gained national and international recognition, ranking No. 20 by U.S. News & World Report in 2010. Among his numerous achievements is the establishment of the Diabetes Center. During his tenure, Dr. LeRoith introduced and developed innovative approaches for preventing and managing the diabetes epidemic in East Harlem, New York, an area where approximately 20 percent of the population has type 2 diabetes. Dr. LeRoith also developed new approaches to monitor and manage blood glucose in hospitalized patients, an initiative that resulted in better outcomes for Mount Sinai’s patients.

In research, I am proud to announce that the Division received $3.1 million in research funds from the National Institutes of Health in 2010. We are continuing a legacy of leadership in diabetes, thyroid, and bone diseases research, among other endocrine conditions. (I encourage you to read the research highlights on pages 8-10 for a full picture of our ongoing initiatives.)

This report highlights many of our faculty’s scientific and clinical accomplishments attained during the leadership of my predecessors. Our solid foundation in clinical care, research, and education will help us build a great future. Mount Sinai faculty are recognized as world leaders in treating, preventing, and caring for diabetes, endocrine, and metabolic disorders. With the faculty, our trainees and administrative team are working together to fulfill our mission and achieve our vision.

Sincerely,

Yaron Tomer, MD
Few medical trends in the United States are as alarming as our growing obesity rate. Over the past 20 years, the prevalence of obesity among adults has increased from 12 percent to 34 percent, and among children and adolescents, the rate has nearly tripled, from 7 percent to 19 percent.

This growth parallels our nation’s increased consumption of sugar, much of it in the form of sweetened sodas, juices, sports drinks, flavored waters, and ready-to-go teas and coffees. Research shows that sugary beverages are the only dietary element to be strongly linked to increased rates of obesity among children and adults.

Health care costs for treating obesity-related illnesses approach $149 billion per year, according to a report released by the National Center for Chronic Disease Prevention and Health Promotion, a division of the Centers for Disease Control and Prevention. Annual Medicare disbursements for diabetes and related illnesses top $80 billion. Reversing such an entrenched and expensive trend cannot be handled on an individual basis; it must be addressed by state and national policies designed to encourage changes in consumption patterns.

Can a “sugar tax” on all high-sugar foods—including those with high-fructose corn syrup—help halt the obesity epidemic? Some believe it can. Using cigarette taxes as a model, we know that the the relationship between smoking and cancer is linear. If you smoke, you increase your risk of lung cancer by 1,000 percent. High taxes on cigarettes resulted in a decline in the number of cigarettes sold and a decline in cancer rates. Would it hold true for a sugar tax and obesity rates?

Soda taxes have already been implemented in 33 states, including the five states with the highest rates of obesity—Mississippi, Alabama, West Virginia, Tennessee, and Oklahoma. In contrast, three of the least obese states, the District of Columbia, Massachusetts, and Colorado, have no sugar taxes.

The possible impact on overall consumption rates and associated revenues varies across tax models, but it is estimated that in New York State, even a minimal penny-per-ounce tax on sugary beverages alone could exceed $900 million in revenue in one year. Sugar-tax revenues could be channeled into health-promoting initiatives and obesity prevention in neighborhoods that need them. Tax funds could be used to support green markets, such as the one established by The Mount Sinai Medical Center in East Harlem. Recent findings indicate that interventions such as diabetes education and weight reduction training can produce weight loss and improvements in diabetes control.

We must ask ... should we be petitioning for sugar taxes? We think we should. We should have a federal tax on all high-sugar foods and use the revenue for obesity prevention programs in our schools and communities. If we teach our children the importance of being active and eating healthy, we'll save billions in health care costs and, above all, we'll be guaranteeing the future health of our children.
It is estimated that as many as one in five adults in Harlem, New York, has diabetes and almost two-thirds of Harlem adults are overweight or obese, making East and Central Harlem epicenters of diabetes\textsuperscript{1,2}. Life in a mostly poor, urban environment presents many challenges for those living with diabetes, especially in Harlem. The residents of Harlem endure a much greater disease burden. They experience the highest rates of lower limb amputation and are twice as likely to die from diabetes, compared to other national averages\textsuperscript{3}.

Over the past decade, Mount Sinai researchers, led by Carol R. Horowitz, MD, MPH, Associate Professor of Health Evidence Policy and Medicine, pioneered community-based participatory research on diabetes in East Harlem, which included landmark work on food availability, often called “the bodega study”\textsuperscript{4}. Today, Mount Sinai is once again using innovative community-based participatory research to identify barriers to good diabetes care; they are looking at the role of visual impairment and how it impacts patients’ ability to live life to the fullest and care for themselves. Primary parameters under investigation focus on diabetes self-management, which includes medication adherence, food preparation, and physical activity.

Once we better understand the problems people with vision loss face, we can work with community members and Mount Sinai’s medical community to create thoughtful and relevant solutions.

Brett Ives, MSN, NP, CDE, Community Outreach Coordinator of the Mount Sinai Diabetes Center, is working with Dr. Horowitz and an extensive network of community leaders on a project called Vision Voice. They are recruiting patients to document through photography the challenges of living with visual impairment in East Harlem and neighboring South Bronx.

“Our first step is to use these visual records, literally through the eyes of our patients, to open the eyes of community leaders and health care providers,” says Ms. Ives. “Once we better understand the problems people with vision loss face, we can work with community members and Mount Sinai’s medical community to create thoughtful and relevant solutions.”

Dioris Jordan, patient at the Mount Sinai Diabetes Center, took photos to showcase how vision loss can affect diabetes self-management. Ms. Jordan notes, “Don’t let this happen to you. All the meds for diabetes, etc.—you have to SEE to use these things. If you use it incorrectly, you could be killing yourself.”

Leading the way in research linking metabolic disorders and cancer

Life, in a lot of ways, is like research. One event can change everything. One encounter can lead to a whole new world, a new discovery and completely change your way. For Derek LeRoith, MD, PhD, connecting with Dr. Bernard Pimstone, his mentor in Cape Town, South Africa, was the instance that changed everything. His mentor guided him to the field of endocrinology, the field to which Dr. LeRoith has made groundbreaking contributions for nearly four decades. His research has furthered our understanding of the physiology and pathophysiology of cancer, diabetes, obesity, and other metabolic disorders. In recognition of his pioneering work, Dr. LeRoith is the Endocrine Society’s recipient of the 2011 Gerald D. Aurbach Award Lecture.
When Dr. LeRoith was in medical school, most students specialized in surgery or cardiology. Dr. Bernard Pimstone and, later, Dr. Jesse Roth made endocrinology compelling. “I was enticed by the cognitive aspect [of endocrinology],” recalls Dr. LeRoith. “It kept you thinking. There are millions of symptoms which let you ask and answer a million questions.” Dr. LeRoith adds that endocrinology was a lively specialty. “When you are a young physician in training, new discoveries lead you to believe that you will influence the global population—the core of why so many of us become physicians in the first place.”

Influencing the global population? Absolutely. Dr. LeRoith’s body of work spans the fields of cellular and molecular biology, as well as transgenic and gene-deletion technology. He is internationally known for his research on insulin, the insulin-like growth factor-1 (IGF-1) and their family of receptors, and was one of the first researchers to demonstrate the link between IGF-1 (and insulin) and cancer. This groundbreaking discovery has helped to explain why individuals with obesity and type 2 diabetes may be more susceptible to developing cancer.

But more than his research and its clinical implications, Dr. LeRoith has changed the lives of young endocrinologists throughout the world. Having studied and practiced medicine on four continents, he has made it a priority to replicate the approach of his mentor and is revered by his mentees as a valuable and supporting adviser. “I have trained many scientists from Europe, Asia, Canada, and Israel. Whether they continue their careers in the United States, or go back to their home countries, I encourage them to take what they have learned from me and my lab group. Use the state-of-the-art facilities, use the resources, and when you move on, use what you learned as a stepping stone to do great things,” says Dr. LeRoith. “One of my greatest joys is watching a trainee succeed.”

For his Gerald D. Aurbach Award Lecture at the Endocrine Society’s Annual Meeting in June, Dr. LeRoith is speaking on Obesity, Type 2 Diabetes & Cancer: The Insulin & IGF Connection. The topic covers his latest research, which explores the connection between metabolic disorders and breast cancer. Using mouse models of obesity and type 2 diabetes, Dr. LeRoith and his colleagues have been able to study the effects of such metabolic disorders on mammary tumor growth and metastases. Their findings suggest that hyperinsulinemia may be one of the major mechanisms that enhance tumor growth through activation of the insulin receptor, and possibly the IGF-1 receptor as well.

“Our mouse models of obesity and type 2 diabetes show enhanced cancer cell growth,” explains Dr. LeRoith. “This means there is a connection between metabolism and tumor cell growth. Such findings could have important implications for developing therapies that may one day help patients with breast cancer.”

Throughout his career, Dr. LeRoith has taken a creative approach to understanding the mechanisms of IGF function. He and his colleagues were among the first researchers to clone IGF-1 cDNA and show that it was expressed in a wide range of tissues, which established the presence of both endocrine and paracrine/autocrine forms of the hormone. He also led the way in cloning the IGF-1 receptor. These discoveries helped establish the relationship between the IGF-1R gene expression in cancer cells and determine that tumor suppressor gene products like p53, WT1, and PTEN controlled the expression of IGF-1R.
Dr. LeRoith’s research has resulted in several important clinical applications. His work has led to numerous therapeutic strategies for cancer that inhibit the IGF-1 receptor as adjunct therapy. In fact, his research was the basis for the concept of IGF-1 receptor inhibition, which is currently used to treat cancer patients. “One of the most promising efforts in cancer therapy research today focuses on trying to control the growth of tumors by inhibiting the protein kinases of the IGF-1 receptor,” says Dr. LeRoith.

Throughout his career, Dr. LeRoith has created several unique mouse models to study insulin-like growth factors. In one remarkable model, he generated mice with a tissue-specific liver deletion of the IGF-1 gene in an effort to study diseases like osteoporosis and growth hormone excess with resultant insulin resistance. His models have been used as a tool to understand diseases and have demonstrated the important role IGF-1 has in promoting cancer growth.

During his tenure at Mount Sinai, Dr. LeRoith has established a world-class Diabetes Center focused on basic research and clinical care and has helped grow the Division of Endocrinology and Diabetes into one of the highest ranked departments in the country. Prior to joining Mount Sinai, Dr. LeRoith spent nearly three decades at the NIH’s National Institute of Diabetes and Digestive and Kidney Diseases. He served as chief of the Diabetes Branch of the NIH from 1999 to 2005.
J. Lester Gabrilove, MD

J. Lester Gabrilove, MD, Professor of Medicine, and former Baumritter Professor, has been associated with Mount Sinai for over 70 years. He is one of the most beloved and outstanding physicians in the history of Mount Sinai School of Medicine. He is currently the division’s senior endocrinologist, having joined Mount Sinai as an intern in 1940.

For 20 years, Dr. Gabrilove was chief of the Endocrine Clinic at The Mount Sinai Hospital. He was instrumental in founding the Clinic and the Division of Endocrinology and graciously served as acting chief of the division in 1985. In 2007, 55 years after Dr. Gabrilove founded the Endocrine Clinic at Mount Sinai Hospital, The Mount Sinai Medical Center aptly renamed the division the Hilda and J. Lester Gabrilove Division of Endocrinology, Diabetes, and Bone Disease, after Dr. Gabrilove and his beloved wife of 56 years.

When asked about the status of endocrinology at Mount Sinai in the 1940s, Dr. Gabrilove remarked, “[i]t barely existed. But a lot of things had been done at Mount Sinai. Sol Silver and B.S. Oppenheimer reported on adrenal cortical carcinoma and Cushing’s syndrome. Investigators did work on thyroid, there was no specialization then, but people were doing work in endocrinology:”

“I encountered patients with feminization and when I investigated, I found that they had adrenal tumors. I looked into everything and wrote what was considered the definitive paper on feminizing adrenal cortical tumors. To this day, I think it is still the classical paper in the field. I continued to study everything about the adrenal. I wiped it clean!”

He collaborated with Dr. Louis Soffer and co-authored the Textbook of Endocrinology and Diseases of the Endocrine Glands. Dr. Gabrilove’s research has been reported in over 170 scientific publications and has been nationally and internationally recognized for more than half a century.

His passion for endocrinology is apparent when speaking with him. Faculty and trainees regard him as one of Mount Sinai’s great giants and a master clinician-educator. Dr. Gabrilove is recognized by his peers as a distinguished endocrinologist, and he has been a role model for generations of trainees. In recognition of his lifelong contributions to the art and science of endocrinology, in 1995, he received the Distinguished Endocrinologist Award of the American Association of Clinical Endocrinologists.

In addition to his work in the division, he has been instrumental to the success of the School of Medicine, having held a host of distinguished posts at The Mount Sinai Hospital, including president of the Alumni Association. Each year, physicians exhibiting excellence in clinical or basic research are fittingly awarded the J. Lester Gabrilove Award, in honor of Dr. Gabrilove.

He has served on the NIH Special Committee on Research Centers in Diabetes Metabolism and Endocrinology and has shared his knowledge as a visiting professor in many countries, including Iran, Brazil, and Peru. His inquiring mind, combined with his practical grounding in the treatment of patients, has been a gift to the division and most importantly to his patients.

When asked about the advances in endocrinology and his current work, you can see the enthusiasm in Dr. Gabrilove’s eyes. “Now, I am interested in polycystic ovary syndrome. I published a paper in 2009, ‘The Polycystic Ovary Unraveled’ (Endocr Pract. 2009;15:386). I think I have delineated the main mechanism in polycystic ovary.”

In 1964, Dr. Gabrilove suggested that the pathophysiologic basis for polycystic ovary syndrome was a decreased conversion of androgen to estrogen. Today, he notes, “I believe that the basic mechanism is of aromatase dysfunction.” He continues, “I published the original manuscript 40 years ago, and if it comes true, it would be a nice thing. Glad I lived this long!”

We’re glad too, Dr. Gabrilove.
Researchers, led by Christoph Buettner, MD, Assistant Professor of Medicine, discovered a novel function of brain insulin which is to suppress adipose tissue lipolysis by dampening sympathetic nervous system outflow to fat and thereby the release of fatty acids. These findings suggest that impaired brain insulin action may be the cause of the unrestrained lipolysis that initiates and worsens type 2 diabetes and/or obesity in humans and were recently published in *Cell Metabolism*.

“We knew that insulin has this fundamentally important ability of suppressing lipolysis, but the finding that this is mediated in a large part by the brain is surprising. Our research raises the possibility that enhancing the brain’s signaling could have therapeutic benefits with minimal risk of hypoglycemia, the major complication of insulin therapy,” says Dr. Buettner.

Dr. Buettner’s team plans to further study the role of brain insulin in prediabetic and diabetic conditions. In a recent diabetes paper, they have identified the brain endocannabinoid system as one of the factors that impair brain insulin action, which may explain why inhibitors of the endocannabinoid system improve metabolism and improve diabetes. A major second goal will be to find ways of improving brain insulin function that could break the vicious cycle leading to restrained lipolysis and improved insulin resistance.

Long assumed to have no impact, neutral thyrotropin receptor (TSHR) antibodies are now being investigated as key contributors to inflammation in autoimmune thyroid disease thanks to the work of Terry Davies, MD, the Florence and Theodore Baumritter Professor of Medicine.

Dr. Davies and his team found that neutral TSHR antibodies can be found in the serum of patients with the autoimmune thyroid disorder known as Grave’s disease. They found these antibodies to have the ability to target a number of signaling cascades and their downstream effectors.

“We found that these antibodies were activating multiple oxidative stress markers that led to thyroid cell apoptosis,” remarks Dr. Davies. He continues, “The death of these cells may be exacerbating the autoimmune response in Grave’s disease. This may eventually help explain the inflammatory nature of this common disorder.”
Eliza Geer, MD, Assistant Professor of Medicine and Neurosurgery, along with Kalmon D. Post, MD, Leonard I. Malis, MD/Corinne and Joseph Graber Professor of Neurosurgery and Medicine, is investigating the mechanisms by which hypercortisolemia causes profound metabolic and phenotypic changes by studying patients with Cushing’s disease, before and after surgically induced remission. They used whole-body magnetic resonance imaging to examine lean and adipose tissue distribution, and conduct detailed metabolic studies in patients with Cushing’s disease.

Their studies revealed that the proportion of adipose tissue in the metabolically active visceral depot was greater, but the proportion in the subcutaneous depot was less in patients with Cushing’s disease compared to matched controls. Additionally, they observed that the mass of skeletal muscle was less but the intermuscular adipose tissue was not different. “Today, we are investigating patients before and after transsphenoidal surgery,” explains Dr. Geer, “in order to characterize the effects of hypercortisolemia on body composition, adipocytokines, appetite hormones, inflammatory markers, and the metabolic syndrome.”

Dr. Geer adds, “Our goal is to identify markers of metabolic risk which can be used to define treatment and help predict long-term outcomes for patients with Cushing’s disease, or any patient exposed to excess glucocorticoids. Our data will also hopefully contribute to the broader understanding of adverse body composition and the metabolic syndrome.”

Once prostate cancer metastasizes to bone, it becomes incurable and is associated with crippling complications including severe pain, fractures, spinal cord compression, and bone marrow suppression. Alice C. Levine, MD, Associate Professor of Medicine and Oncological Sciences, along with her team, is investigating the role of prostatic acid phosphatase (PAP), a protein secreted by prostate cancer cells, in the development and progression of bone metastases. Evidence leads the group to believe that PAP plays a causal role in this process and that inhibition of PAP with small molecule inhibitor can prevent and treat prostate cancer bone metastases.

“PAP is the oldest serum tumor marker described, for the first time, fittingly, at Mount Sinai by Dr. Alexander Gutman [former chairman of the Department of Medicine] in the 1930s. As a tumor marker, it has long been supplanted by prostate-specific antigen PSA, but we have evidence that it activates bone cells and plays an important role in bone metastases. Small molecules such as tartrate, found in food and wine, are known to inhibit PAP, but it is difficult to determine the amount of tartrate needed to get into the bone effectively,” says Dr. Levine.

Dr. Levine’s laboratory has developed new drugs that combine an orally active, FDA-approved osteoporosis drug, alendronate, with tartrate and other small molecule inhibitors of PAP, and are currently testing their efficacy in an animal model of prostate cancer bone metastases. Dr. Levine adds, “If effective, these drugs could rapidly be tested in patients and would represent a tremendous advance in the treatment of prostate cancer.”
Yaron Tomer, MD, FACP, Professor of Medicine, has discovered that a specific variant of human leukocyte antigen (HLA) protein is seen with increased frequency in individuals who suffer from both type 1 diabetes and autoimmune thyroiditis. Prior to his research, the specific factors that cause individuals to develop both of these disorders were not well understood. His studies show that type 1 diabetes and autoimmune thyroiditis share a genetic susceptibility, and help explain the mechanisms that cause them to frequently occur within the same individual and within the same family.

In their research, Dr. Tomer and his colleagues demonstrated that a specific HLA protein is a critical player in regulating the immune response. Both type 1 diabetes and autoimmune thyroiditis develop when lymphocytes infiltrate the gland (pancreatic beta-cells or the thyroid) and cause it to stop functioning. In a normal immune response, HLA captures proteins that come from invading pathogens like bacteria and viruses, inducing a strong immune response to the pathogen in order to clear the infection. However, in individuals that are predisposed to develop autoimmunity, the HLA will capture and present self-antigens to the lymphocytes. This triggers a strong immune response against self-proteins, and can cause an autoimmune disease to develop as a result.

“Genetic susceptibility is critical to the development of type 1 diabetes and autoimmune thyroiditis, as well as a number of other autoimmune diseases,” says Dr. Tomer. “Enhancing our understanding of the genetic causes of autoimmunity will help us design new treatment modalities that can prevent autoimmune diseases altogether.”

Shoshana Yakar, PhD, Associate Professor of Medicine, is one of the foremost experts on growth hormone signaling pathways that regulate the growth, development, and repair of bones. Her research focuses on growth hormone and the insulin-like growth factor 1 (IGF-1), which has several growth-promoting roles throughout the body. For the most part, IGF-1 is produced by the liver and is released into the serum; however, it can also be made within tissues. Dr. Yakar is trying to understand the differences between serum IGF-1 and tissue IGF-1 in an effort to yield new insights into disorders like osteoporosis, growth abnormalities, menopause-related bone loss, aging, obesity, and diabetes.

To accomplish that goal, Dr. Yakar has genetically engineered several mouse models with IGF-1 deficiency. For the first time, her models are allowing researchers to selectively control tissue IGF-1 production in a time-specific manner. In one particular line, she was able to demonstrate that IGF-1 regulates bone growth during development, and show how it can affect an individual’s risk of developing osteoporosis.

“Studies in animal models and in humans have established the critical role that IGF-1 has on skeletal growth and development,” says Dr. Yakar. “By studying IGF-1, we can understand how bones grow during puberty and the effect of bone growth on adult bone strength and osteoporosis.”
A vigorous fellowship program with a strong director is essential to fulfill the tripartite mission of any academic department of medicine. But as the practice of medicine continues to advance with health care reform, new uses of technology, and advances in genomics and other fields, coupled with an increasing obesity and diabetes epidemic, a fellowship program with a strong director is paramount to the future of our health care system.

In the last eight years, serving as program director of the Clinical Fellowship in Endocrinology, Robert T. Yanagisawa, MD, Associate Professor of Medicine, has developed a highly competitive program that matches among the top eight candidates among 200-plus applicants each year. He fosters vibrant careers in academic medicine and leads fellows to meet the challenges of the obesity and diabetes epidemic through education, research, and patient care.

“Now, more than ever, academic medical centers need to train the fellows who can serve as future leaders in an evolving model of academic medicine,” says Mark Babaytsky, Chairman of the Samuel L. Bronfman Department of Medicine and Professor of Medicine. “We need to develop new models of care in this era [of health care reform], design new approaches to training targeted to the increasingly varied career paths now available within endocrinology, and create new opportunities for collaborative, multidisciplinary translational science, while always ensuring the best in patient-centered care. With the varied paths our fellows can take, Dr. Yanagisawa has positioned Mount Sinai to be the leader in endocrinologist training.”

The program’s success is largely due to the dedication of our esteemed faculty. Not surprisingly, several faculty members graduated from the program and are actively involved in the training of our fellows today, including Donald A. Bergman, MD, MACE; Rhoda H. Cobin, MD, MACE; Walter Futterweit, MD; and Jeffrey I. Mechanick, MD.

Dr. Bergman has authored numerous papers and contributed to several books, including The Mount Sinai School of Medicine Complete Book of Nutrition. Dr. Cobin serves as co-chief of our Thyroid/Endocrinology Clinic. Both Drs. Bergman and Cobin have served as presidents of the American Association of Clinical Endocrinologists and presidents of the American College of Endocrinology. Dr. Futterweit is currently the president of the Androgen Excess and Polycystic Ovary Syndrome Society and previously served as co-chief of the Thyroid/Endocrinology Clinic. Dr. Mechanick was
appointed to the Science Board of the President’s Council on Fitness, Sports, and Nutrition. Our fellows are also fortunate to be mentored on female reproduction by Nathan Kase, MD, former Dean of Mount Sinai. Today, all serve as active mentors to our fellows, cultivating our fellows to be outstanding clinicians for all their future clinical plans.

Dr. Yanagisawa comments, “The strength of the program stems from our nationally recognized faculty. Furthermore, we can tailor the program to each individual fellow.” To best suit the needs of both clinical and academic endocrinology training, our fellowship program offers a two-year clinical fellowship training with an optional third year for further research.

The story of one of our fellows demonstrates the flexibility of the program to individual fellows’ needs. Dr. Yanagisawa and Derek LeRoith, MD, PhD, Professor of Medicine, saw exceptional academic potential in Emily Gallagher, MD, an aspiring future academic endocrinologist who applied to the program from Ireland. Since she trained in internal medicine in Ireland, Dr. Gallagher had been advised she would need to repeat her residency in internal medicine in the United States. To help her achieve her goals, Drs. Yanagisawa and LeRoith recommended her for the Research Pathway, and she is currently engaged in cutting-edge diabetes research at Dr. LeRoith’s lab.

With the Research Pathway, fellows are able to complete their internal medicine residency in two years, followed by a minimum of three years in endocrinology fellowship, given protected research time in the second year (70%) and third year (90%), while managing a continuity clinic.

“Our mission is to train outstanding future academic endocrinologists, both clinical endocrinologists who will serve the needs of the growing number of patients with diabetes and endocrine disorders, as well as physician-scientists who will help unravel the mechanisms of these diseases and develop novel therapies,” comments Dr. Tomer. “Tailoring our program to the individual fellows allows us to train them to achieve their full potential.”

Robert T. Yanagisawa, MD
Program Director of the Clinical Fellowship in Endocrinology
“I have no oomph. I don’t feel like a man,” Antoine,* a lean 39-year-old man reported when he presented to Ronald Tamler, MD, PhD, Assistant Professor of Medicine, at the Mount Sinai Men’s Health Program. Mild fatigue, paired with erectile dysfunction, kept Antoine from engaging in sexual activity with his wife and from exercising. He missed both activities and, after seeing four other doctors, he finally found his way to Mount Sinai.

Antoine had previously been prescribed transdermal testosterone and sildenafil, neither of which improved his condition. He discontinued both after experiencing blurred vision and palpitations with sildenafil. Dr. Tamler probed for signs and symptoms of hypogonadism. “Are you shaving every day?” he inquired. “More like every three weeks!” Antoine exclaimed and then proceeded to describe how, one cold winter, four years ago, his leg hair fell out. Dr. Tamler’s patient, standing tall at 6’3” and weighing 214 lbs., had emigrated from Nigeria five years prior to the visit. When asked about past medical history, surgical history, medication use, nutritional supplements, or drug allergies, he denied everything and offered no further information.

On physical exam, blood pressure was 110/70 and pulse 68. There was no gynecomastia. The exam was normal except for small testicular size and decreased body hair overall with particularly smooth legs. But above all else, an early morning testosterone level was reported very low at <15 ng/dl.

Dr. Tamler pondered the facts of the case. Antoine’s previous physicians had prescribed testosterone, to no avail. There had to be an underlying cause that had not been addressed. Even castrated patients usually have testosterone levels between 25 and 60 ng/dl (due to extra-testicular production). Dr. Tamler suspected adrenal insufficiency. However, other than mild fatigue, the patient had no signs or symptoms supporting that diagnosis.

Add-on labs showed LH and FSH at 0. As suspected, 8 a.m. cortisol was low at 2 mcg/dl, TSH was normal at 2.7 ulU/ml, but free T4 was low at 0.50 ng/dl and IGF-1 was also low at 89.00 ng/ml. Prolactin was normal, as were his electrolytes.

These findings prompted the urgent recall of the

*To preserve privacy, we are using a fictitious name.
Dr. Tamler’s “Endocrine Case Challenges” are regularly featured in Endocrine Today. This medical mystery and others can be found at www.endocrinetoday.com.
patient. “Is there something you are not telling me?” Dr. Tamler pressed. All he got was a shrug. An MRI of the pituitary showed an empty sella.

Again, Dr. Tamler insisted that the symptoms could not have been caused by a cold New York winter. Finally, Antoine revealed his secret: he had had resection of a large pituitary tumor in his home country. In fear of jeopardizing his new life in the United States, or of being denied health care coverage due to a pre-existing condition, Antoine had been reluctant to divulge his medical past. “Were you concerned that you might be denied health insurance or get into trouble with immigration?” Dr. Tamler empathized. “This is a great country, and its laws protect you,” he smiled reassuringly, contemplating how this case reflected the ongoing health care reform debate. He then proceeded to sequentially start Antoine on prednisone, levothyroxine, and transdermal testosterone.

Three months later, the patient returned for follow-up, pointing to his regrown leg hair with a beaming smile. “Look!” he exclaimed, “I could not do this before,” while performing lunges in the exam room. Dr. Tamler made a mental note to adjust Antoine’s medication as he was catching the falling stadiometer.

Meet Gestational Diabetes Expert Carol Levy, MD, CDE

Gestational diabetes is a particularly big issue in New York City, where many women wait until they are older to get pregnant. Due to the potential serious complications of diabetes in pregnancy both to the mother and the baby (even with mildly elevated glucose values), diagnostic criteria for gestational diabetes have been revised. This has increased the proportion of women diagnosed with gestational diabetes. At Mount Sinai, we are fortunate to have in our division one of the nation’s premier gestational diabetes specialists, Carol Levy, MD, CDE. Indeed, Dr. Levy was selected for the Hall of Fame of Best Doctors in New York by New York Magazine.

During her fellowship at Joslin Clinic and Brigham and Women’s Hospital, Dr. Levy recalls working closely with many patients with diabetes planning pregnancy or diagnosed while pregnant. It became one of her passions—helping both mother and baby at the same time. Since then, she has provided care to well over 600 patients with diabetes in pregnancy, written book chapters, and lectured extensively on the topic.

Dr. Levy’s focus on diabetes has a personal aspect to it. She was diagnosed with type 1 diabetes as a child. With two pregnancies under her belt (her children are now ages 6 and 8), she notes, “It was a very eye-opening experience. I’ve taken care of hundreds of pregnant patients. But having been pregnant and realizing how challenging it is to manage your diabetes, your career, and your home life—I think it makes me a better doctor.” Patients are reassured by both her personal and professional expertise.

Over the next several years, Dr. Levy is focusing on educating patients and providers on the importance of care for pregnant diabetic patients—the treatment options for prior to pregnancy, during pregnancy, and post partum. She intends to coordinate this education with research to improve the outcomes of gestational diabetes.

Dr. Levy sees patients at Mount Sinai’s Endocrinology, Diabetes, and Bone Diseases Faculty Practice Associates and also serves as director of the Clinical Trials Office for the Department of Medicine.
CLINICAL FACULTY

DIABETES TEAM

Tracy Breen, MD
Associate Professor of Medicine

Christoph Buettner, MD
Assistant Professor of Medicine and Neuroscience

Shelly A. Im, MD
Instructor

Carol Levy, MD, CDE
Senior Faculty

Grishma Parikh, MD
Instructor

Orli Rosen, MD
Instructor

Maria Skamagas, MD
Assistant Professor of Medicine

Ronald Tamler, MD
Assistant Professor of Medicine

Barrie Weinstein, MD
Instructor

Cynthia Esrig, NP, CDE

Elaine Galan, RN

Brett Ives, NP, CDE

Anne Lai, NP, CDE

Alenka Ravnik-List, RD, CDE

THYROID/PARATHYROID TEAM

Tracy Breen, MD
Associate Professor of Medicine

Christoph Buettner, MD
Assistant Professor of Medicine and Neuroscience

Terry Davies, MD
Florence and Theodore Baumritter Professor of Medicine

Richard Haber, MD
Professor of Medicine

Shelly A. Im, MD
Instructor

Grishma Parikh, MD
Instructor

Orli Rosen, MD
Instructor

Maria Skamagas, MD
Assistant Professor of Medicine

Barrie Weinstein, MD
Instructor

Robert Yanagisawa, MD
Associate Professor of Medicine

METABOLIC BONE DISEASE TEAM

Terry Davies, MD
Florence and Theodore Baumritter Professor of Medicine

Richard Haber, MD
Professor of Medicine

Shelly A. Im, MD
Instructor

Grishma Parikh, MD
Instructor

Orli Rosen, MD
Instructor

Maria Skamagas, MD
Assistant Professor of Medicine

Barrie Weinstein, MD
Instructor
Esteemed Mount Sinai faculty, Rhoda Cobin, MD, MACE, and Donald Bergman, MD, MACE, along with Paul Jellinger, MD, MACE, former resident and endocrinology fellow of Mount Sinai, were among the founding board members of the American Association of Clinical Endocrinologists (AACE) in 1991 to serve as the active voice for clinical endocrinologists. All have served in AACE leadership roles over the last 20 years, each having become President of AACE and Presidents of the American College of Endocrinology. Today, AACE has over 6,000 members in the United States and 91 foreign countries.
RESEARCH FACULTY

**METABOLISM AND DIABETES**

Christoph Buettner, MD  
*Assistant Professor of Medicine and Neuroscience*

**AUTOIMMUNE THYROID DISEASE**

Terry Davies, MD  
*Florence and Theodore Baumritter Professor of Medicine*

Rauf Latif, PhD  
*Associate Professor of Medicine*

Risheng Ma, PhD  
*Instructor*

Xiaoming Yin, PhD  
*Assistant Professor of Medicine*

Syed Morshed, PhD  
*Adjunct Instructor*

**HORMONES AND PROSTATE CANCER**

Alice Levine, MD  
*Associate Professor of Medicine and Oncological Sciences*

**ENDOCRINE AUTOIMMUNITY: GENETICS AND EPIGENETICS**

Mihaela Stefan, PhD  
*Assistant Professor of Medicine*

Yaron Tomer, MD  
*Irene and Dr. Arthur Fishberg Professor of Medicine*

**BONE GROWTH**

Hayden-William Courtland, MS, PhD  
*Instructor*

Shoshana Yakar, PhD  
*Associate Professor of Medicine*

**METABOLIC MECHANISMS OF DIABETES AND CANCER**

Derek LeRoith, MD, PhD  
*Lillian and Henry M. Stratton Professor of Molecular Medicine*

Ying-Jie Wu, PhD  
*Associate Professor of Medicine*

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**Former Chair of the Department of Medicine, Solomon Berson, MD, and Rosalyn Yalow, MD, Distinguished Service Professor, revolutionized endocrinology with the development of the radioimmunoassay in 1957. For the first time, scientists could measure the amounts of specific hormones in the blood. Dr. Yalow accepted the Nobel Prize for their work in 1977, five years after Dr. Berson’s death.**
Voluntary and Affiliated Faculty of the James J. Peters VA Medical Center and Elmhurst Hospital Center

William Bauman, MD
Professor of Medicine and Rehabilitation Medicine

Donald Bergman, MD, MACE
Clinical Professor of Medicine

Zachary Bloomgarden, MD
Clinical Professor of Medicine

Neal Breit, MD
Clinical Instructor

Elise Brett, MD
Associate Clinical Professor of Medicine

Himani Chandra, MD
Clinical Instructor of Medicine

Rhoda Cobin, MD, MACE
Clinical Professor of Medicine

Robert Fiedler, MD
Associate Clinical Professor of Medicine

Walter Futterweit, MD
Clinical Professor of Medicine

Pietra Greenberg, MD
Assistant Clinical Professor of Medicine

Michael Goldberg, MD
Adjunct Instructor

Adam Kelman, MD
Assistant Clinical Professor of Medicine

Robert Matz, MD
Professor of Medicine

Jeffrey Mechanick, MD
Clinical Professor of Medicine

Edward Merker, MD
Associate Clinical Professor of Medicine and Geriatrics and Palliative Medicine

Stanley Mirsky, MD
Associate Clinical Professor of Medicine

Rachel Pessah-Pollack, MD
Clinical Instructor

Matthew Potenza, MD
Clinical Instructor

Philip Rabito, MD, FACE
Assistant Clinical Professor of Medicine

Elliot Rayfield, MD
Clinical Professor of Medicine

Lester Salans, MD
Clinical Professor of Medicine

Arnold Schonfeld, MD
Assistant Clinical Professor of Medicine

Atara Schultz, MD
Clinical Instructor

Robert Segal, MD
Honorary Lecturer

Sharon Selinger, MD
Associate Clinical Professor of Medicine

David Sirota, MD
Honorary Lecturer

Donald Smith, MD
Associate Professor of Medicine and Preventive Medicine

Joshua Tannenbaum, MD
Clinical Instructor

Andrew Werner, MD
Assistant Clinical Professor of Medicine
AN UPDATE ON
DIABETES and
ENDOCRINE
Disorders
FOR THE PRACTICING PHYSICIAN

Goldwurm Auditorium
Mount Sinai School of Medicine

The overall goal of this educational program is to update the participants regarding certain very common disorders and how this new information will affect their practice. These disorders include obesity and diabetes and, in addition, will cover osteoporosis, thyroid, and hormone therapy.

For more information, please call the Office of CME at 212-731-7950.
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