Division of Endocrinology, Diabetes, and Metabolism

Obesity, diabetes, osteoporosis, and other endocrine diseases affect tens of millions of Americans and many more worldwide. The mission of the Division of Endocrinology, Diabetes, and Metabolism is to provide the highest quality out-patient and in-patient care in these areas, along with top quality medical education and research. With that in mind, the division has recruited ten new faculty members, merged operations with the Diabetes Research Institute (DRI) and now is leading the Eleanor and Joseph Kosow Diabetes Treatment Center and its new endocrine testing center. In addition, our clinical operations have expanded to the Miami Jewish Home and UHealth−Kendall. Recently, the division partnered with the DRI to run a fully-accredited clinical laboratory that is equipped to perform state-of-the-art diagnostic procedures assisting in the diagnosis and follow-up of patients with endocrine diseases.
To offer the highest quality of patient care, our faculty members work closely with other physicians at University of Miami, including endocrine surgeons, neurosurgeons, nuclear medicine specialists, radiologists, and pathologists. This comprehensive, integrated approach simplifies the patient experience and results in the high quality of care delivered by our physicians.

Education and research also have been a priority. The division has been reorganizing its fellowship program, which is now focused on “mentoring young physician scientists whose goals include using basic and clinical research to treat and cure patients with metabolic diseases," notes Antonio Bianco, M.D., Ph.D., division chief. The program offers an exciting training experience that promotes the development of focused clinical skills, critical thinking, and the ability to stay abreast of the newest knowledge in the field of endocrinology. These goals are achieved through the close interaction between the fellows and the division’s team of physician-scientists and basic scientists working on research projects spanning the breadth of the field.

**Division’s Clinical Operations Merge and Expand**

In January 2009, the clinical operations of the Division of Endocrinology, Diabetes, and Metabolism at the University of Miami Miller School of Medicine, merged with the clinical operations of the Diabetes Research Institute (DRI), to operate as one, cohesive unit. Today, the division’s clinical enterprise encompasses both diabetes and endocrine functions with affiliated clinics located throughout Miami-Dade County. The division is part of UHealth – the University of Miami Health System.

On the University of Miami/Jackson Memorial Medical Campus, clinics are located at the Eleanor and Joseph Kosow Diabetes Treatment Center as well as the University of Miami Hospital and Clinics (UMHC). The division also operates clinics at the UHealth-Kendall location and the Miami Jewish Home and Hospital for the Aged in Miami Beach. The division is also currently exploring collaborative opportunities with a large multi-specialty practice near Mount Sinai Medical Center in Miami Beach.

“We have patients coming from the tri-county area and beyond so it made sense to further branch out into the community,” notes Luigi Meneghini, M.D., M.B.A., director of the division’s clinical operations. “We first needed to optimize the clinical operations here within the medical campus, specifically at the Kosow Center, which is currently our largest clinical site. In coordination with the vision, mission, and the clinical objectives of the Department of Medicine, we plan on reaching out into the community and further expand the depth and breadth of our clinical operations for the benefit of patients, referring physicians, and our endocrine colleagues in the community.”

The division also continues to build its diabetes and endocrine consultation services in the inpatient setting. Currently, the division has ongoing inpatient activities at Jackson Memorial Hospital (Jackson), UMHC, Sylvester Comprehensive Cancer Center at the University of Miami Miller School of Medicine (Sylvester), and over the past year, has built up the inpatient activities at University of Miami Hospital (UMH).
New Endocrine Testing Center is Launched

The practice of endocrinology often requires the use of sophisticated, dynamic testing to confirm or exclude one of the many potential conditions and diagnoses. The division’s new Endocrine Testing Center (ETC), under the direction of Alejandro Ayala, M.D., has been created to facilitate such evaluations. He and his team are charged with handling all referrals to the center, carrying out appropriate patient tests and evaluations, such as ACTH or CRH stimulation, glucose or insulin tolerance, clonidine suppression, and water deprivation to name a few. The ETC represents a unique and invaluable resource to the practice of endocrinology for the academic faculty, as well as our endocrine colleagues in the community.

Faculty List

**Antonio Bianco, M.D., Ph.D.**
Division Chief and Professor

**Professors**
Rodolfo Alejandro, M.D
Ronald Goldberg, M.D.
Paul Jellinger, M.D., M.A.C.E.
Silvina Levis, M.D.
Jennifer Marks, M.D.
Daniel H. Mintz, M.D.
Vania Nose, M.D.
Karl Muench, M.D.
Jay S. Skyler, M.D.
Jay M. Sosenko, M.D.

**Emeritus Professor**
Lawrence Fishman, M.D.

**Associate Professors**
Alejandro Ayala, M.D.
Hermes Florez, M.D., Ph.D.
Luigi Meneghini, M.D., M.B.A.

**Assistant Professors**
Brenda Acosta, M.D.
Angel R. Alejandro, M.D.
Denise Armellini, M.D.
Jennifer Glueck, M.D.
Atil Y. Kargi, M.D.
Brian Kim, M.D.
Bresta Miranda-Palma, M.D.
Luz Marina Prieto Sanchez, M.D.
Anup Sabharwal, M.D.
Maria del Pilar Solano, M.D.

**Research Professors**
John Brown Ph.D.
Luca Inverardi, M.D.
Ricardo Pastori, Ph.D.
Alberto Pugliese, M.D.

**Research Associate Professor**
Armando Mendez, Ph.D.

**Research Assistant Professor**
Alejandro Caicedo, Ph.D.
Miriam Gutt, Ph.D.
Lisa Rafkin-Mervis, M.S., R.D., C.D.E.
New Research Laboratory is Created

The division recently created a fully equipped 5,000-square-foot state-of-the-art research laboratory on the sixth floor of the Batchelor Children’s Research Institute. The lab will be used to study the fundamental aspects of thyroid hormone metabolism and action, as well as to understand how hormones control metabolism and energy expenditure.

This laboratory is also home to a Mouse Metabolic Profiling Program that specializes in the study of genetically modified animal models. Identifying and understanding the consequences of one or more genetic modifications require extensive physiological knowledge and sophisticated hardware to test such animals.

Created and directed by Antonio Bianco, M.D., Ph.D., division chief, the mouse metabolic phenotyping core facility is capable of animal acclimatization at a wide range of environmental temperature (4-32°C), determination of body composition by DEXA, continuous measurement of energy expenditure, respiratory quotient, food and water intake and mouse physical activity with a CLAMS equipment. Animals can also be probed for measurement of core temperature and for measurement of interscapular brown adipose tissue thermal response to infusion of different compounds.

In 2008, Bianco and Brian Kim, M.D., developed the concept and established a cell metabolic profiling core facility at the Brigham and Women’s Hospital, a teaching affiliate of Harvard Medical School. This was achieved while testing the first prototypes of “XF-24” technology from Seahorse Biologics (Billerica, MA) to monitor the physiological activity of cells over the course of an extended or multi-step experiment; this allows the profiling of cellular metabolism. In Miami, Kim then established a similar program equipped with a XF-96 (96-well platform) that provides physiologically relevant readouts of cellular behavior that are used to determine metabolic rate, i.e. oxygen consumption and the extracellular acidification rate that mirrors lactate production. Both scientists have accumulated experience with this technology and are able to study multiple cell systems, creating the necessary infrastructure to study how different molecules or hormones affect cellular metabolic parameters in a controlled cellular environment.

Caption needs names of fellows pictured above.
The strength of this approach relies on scientists who are able to correlate, in real time, mechanisms that take place at a molecular and cellular level with complex physiological parameters such as rate of metabolism and energy expenditure. Other important cellular measurements already available at the Miller School that are being incorporated in the same training setup include the study of insulin-stimulated glucose uptake, glycolytic flux, oxidative phosphorylation parameters, the activity of key rate-limiting metabolic enzymes or pathways, and the expression profiling of key metabolic genes by quantitative real time PCR. Programs such as these are being created in a number of centers in the United States and abroad. Here at the Miller School, they are critical in allowing our trainees and scientists to have the opportunity to learn the theory and its practical aspects.

Research activities in the division are rapidly expanding with the recruitment of key faculty such as Alejandro Caicedo, Ph.D. A physiologist, initially trained in sensory neuroscience, Dr. Caicedo is applying his expertise to study the physiology of human islet cells, specifically the structural and functional properties of islet cells that lead to highly regulated hormone release. His results indicate that the human islets of Langerhans have a unique cytoarchitecture that facilitates paracrine signaling. In collaboration with colleagues at the Diabetes Research Institute, Dr. Caicedo is identifying paracrine, autocrine, and neural signals that contribute to coordinate hormone secretion in human islets. He also is studying the biology of islets in the living organism using a new technological platform, namely islet transplantation into the anterior chamber of the eye. Dr. Caicedo’s research is expected to impact current models about the regulation of hormone secretion by the endocrine pancreas. Furthermore, the identification of signaling molecules will open new avenues for pharmacological intervention.

Current Division Endocrine, Diabetes and Metabolism Fellows

Caption needs names of fellows pictured above.
Message from Program Director

Our Fellowship program provides a diversified, cutting edge, training program that encompasses the breadth of endocrinology, diabetes and metabolism while providing in-depth experience in all endocrine subspecialty areas in a congenial setting that is conducive to learning and work. Our primary mission is to train Fellows for academic careers in endocrinology and diabetes, and to this end our program also requires the completion of a research project under expert faculty supervision. Almost 50% of our trainees enter academic institutions with the remainder opting for clinical practice in Florida and beyond. Our expanding, highly trained faculty include nationally and internationally renowned clinicians and scientists thus ensuring both clinical and research training at the highest level. The patient population at our three principal medical facilities - Jackson Memorial Hospital, the Miami Veterans Affairs Medical Center and the University of Miami Hospital and Clinics - provides Fellows with a challenging wealth of opportunities in a unique clinical environment. The research level our faculty provides a wide range of training opportunities in epidemiologic, clinical and laboratory-based research. With guidance, mentoring and teaching from our outstanding faculty, we believe our Fellows achieve their full potential.

Different Subspecialty Rotations

- Thyroid
- Adrenal
- Metabolic Bone Disease, Vitamin D Deficiency Osteoporosis
- Type 1 and type 2 diabetes and diabetes in adolescents
- Genetic Diseases and Counseling
- Lipid Disorders
- Neuroendocrinology
- Obesity and Metabolic Syndrome
- Reproductive Endocrinology

Research Themes

**Theme 1**
Diabetes cure and prevention

**Theme 2**
Mineral metabolism and biology of bone (stem) cells

**Theme 3**
Hormone signaling, metabolism and cell control
Research Mentors
Rodolfo Alejandro, MD
Antonio C. Bianco, MD, Ph.D
John Brown, Ph.D
Kerry Burnstein, Ph.D
Alan Delamater, Ph.D
Ronald Goldberg, MD
Marks Jennifer, M.D.
Zafar Nawaz, Ph.D
Ricardo L. Pastori, Ph.D
Alberto Pugliese, MD
Camillo Ricordi, MD
Bernard Roos, MD
Guy Howard, Ph.D
Barry Hurwitz, Ph.D
Luca Inverardi, MD
Silvina Levis, MD
Jay Skyler, MD
Vladlen Z. Slepak, Ph.D
Bruce Troen, MD
Myles S. Wolf, MD, MMSc

Educational Conferences

Journal Club
1st Wednesday of the month

Case Presentations
Thursday at 12:30 p.m. prior to Endocrine Grand Rounds

Medical Grand Rounds
Wednesdays from 12 to 1 p.m.

Endocrine Grand Rounds
Thursdays from 1 to 2 p.m

Thyroid Tumor Board
1st Thursday of each month at 4:00pm

Thyroid Clinical Case Conference
2nd Thursday of each month 4:00 p.m

Neuroendocrine Clinical Case Conference
3rd Thursday of each month 4:00 p.m

Bone Clinical Case Conference
4th Thursday of each month 4:00 p.m

Clinics
- Jackson Memorial Hospital
- Veteran Affairs Medical Center
- University of Miami Hospital Clinics
- Diabetes Research Institute Kosow Clinic

Fellowship Program Accreditation
Accredited by ACGME until 2011
Fellowship Coordinator
Angie Saint Jean
asaint-jean@med.miami.edu
Division of Endocrinology, Diabetes & Metabolism

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