Fellowship in Endocrinology, Diabetes, and Metabolism

Washington University’s Division of Endocrinology, Metabolism, and Lipid Research routinely ranks among the premier academic teaching, clinical, and research programs in the country. *U.S. News & World Report touts its clinical services among the top programs nationwide, and NIH has continuously supported its competitive research and training grants for many years.*

Endocrinologists in the division diagnose and treat patients with complex endocrine and metabolic disorders, including diabetes (Type 1, Type 2, monogenic diabetes and diabetes associated with organ transplantation and other conditions), hyperlipidemia (severe hypercholesterolemia, including many families with familial hypercholesterolemia, hypertriglyceridemia and other rare types of hyperlipidemia), thyroid disease, including thyroid cancer, metabolic bone disorders, multiple endocrine neoplasia syndromes, pituitary diseases and other neuroendocrine disorders, adrenal disease (such as pheochromocytomas, adrenal insufficiency, and adrenal cancers), metabolic syndrome, hirsutism, polycystic ovarian syndrome and male hypogonadism. *The division offers patients the very latest in diagnostic and treatment options.* For example, Washington University is the only site in our region using outpatient LDL apheresis to filter high levels of cholesterol from the blood and lower LDL by as much as 50 percent in patients unresponsive to conventional therapies.

*Endocrinologists at Washington University play a leading role in improving patient care through basic and clinical research.* Faculty direct clinical studies to evaluate the latest therapies and diagnostic procedures. Basic scientists conduct innovative molecular and translational research with the potential to pave the way for new treatments. Together this diverse faculty *provide an outstanding training environment for some of the nation’s best medical students, residents, physicians, and pre- and postdoctoral fellows.*

**Mission**

The mission of the *Division of Endocrinology, Metabolism and Lipid Research* is to conduct innovative research, to teach research and clinical medicine, and to provide exemplary care to patients with endocrine disorders. The Division provides unique patient care services to inpatients at Barnes-Jewish Hospital and to outpatients from the St. Louis community and beyond.

**Educational Goals**

The primary goal of the Washington University clinical fellowship program in endocrinology, diabetes and metabolism is to train academically oriented physicians in our discipline. While many of the graduates of the program will become primarily bench-oriented pre-clinical scientists, others will become patient-oriented clinical scientists and some will become clinical consultants/educators. It is our objective to provide each fellow with substantive experiences in biomedical research – bench-oriented, patient-oriented, or both, and in clinical endocrinology. The high quality training and clinical experience will prepare the fellow to function as an expert consultant in endocrinology and fulfills all ACGME and ABIM requirements.
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Educational Program – Research and Clinical Training

**Research training** is supervised by a faculty research mentor, who may be engaged in basic, translational or clinical research. Selection of a research mentor from the pool of qualified faculty members is primarily the responsibility of each fellow. This is coordinated with the Division Chief, Clay F. Semenkovich, M.D.

**Clinical training** is conducted by the faculty, staff and the trainees themselves through supervised patient-care, simulation exercises and our didactic teaching program. The clinical training program includes the care of adult inpatients with diabetes and endocrine disorders, and outpatients of all ages. It is designed to allow the fellow to become expert in the diagnosis and management of endocrine disorders and to promote teaching of endocrinology to medical students, residents, physicians in practice and other health care providers. Clinical training includes inpatient and outpatient consultations. Outpatient rotations include experiences in general endocrinology, diabetes, thyroid disease, pituitary tumors, bone disease, lipids, pediatric endocrinology and reproductive medicine. Locations include the Center for Advanced Medicine, Barnes West County, John Cochran VA Medical Center, Shriner’s Hospital for Children and the Reproductive Endocrinology clinic.

In general, clinical training is distributed over the first two years of the fellowship. Thus, fellows participate in both clinical and research training from the beginning. To complete research training, a third year of fellowship is available for fellows on the conventional track. Fellows on the research pathway will spend two years of combined clinical and research experience, followed by two years of mainly research. The outpatient clinics average four half days per week over the first year and two half days per week during the second year. The inpatient consultations average four months during the first year and two months during the second year. Fellows are expected to teach medical students and residents and to participate actively in conferences, seminars, and case presentations.
Endocrinology Certification Procedural Requirements

At its April 2013 meeting, the Endocrinology, Diabetes and Metabolism Specialty Board voted to revise the policy regarding procedural requirements for initial certification. Effective in academic year 2015-2016, all fellows will be required to achieve competency in the following:

- **Thyroid Ultrasound and Fine Needle Aspiration** – includes recognizing the indication for neck ultrasound, interpreting thyroid imaging, performing thyroid ultrasound, and performing ultrasound-guided fine needle aspiration of thyroid nodules.
- **Insulin Pump Core Therapy** – includes an understanding of the technology, risk and benefits of the delivery system, competency in determining glucose targets and insulin dosing calculations, and demonstrated competency in data interpretation of pump downloads.
- **Continuous Glucose Monitoring** – includes an understanding of the technology and evidence-based guidelines and indications for use, demonstrated competency in interpreting tracings and logbooks, and evaluating patients' current therapy and initiating appropriate changes based on CGM findings.
- **Dual Energy X-ray Absorptiometry (DXA)** – includes an understanding of the clinical indications for evaluating osteoporosis/metabolic bone disease, understanding of the basic science and operating principles of bone densitometry and assessment of fracture risk, reviewing and interpreting scan data and creating DXA reports, and indications and methodologies for longitudinal monitoring.

1st Year Rotations

- **Inpatient Endocrine Consult Service** – 2 months
- **Inpatient Diabetes Consult Service** – 2 months
- **Outpatient Continuity Clinic** – weekly
- **Bone Health Clinic** – 2 months
- **Diabetes Center Clinic** – 2 months
- **Lipid Clinic** – 2 months
- **Pituitary Clinic** – 1 month
- **Thyroid Nodule Clinic** – 2 months
- **VA Endocrinology and Metabolism Clinic** – 6-months
- **Pediatric Endocrinology and Metabolism Clinic** – 2 months
- **Reproductive/PCOS Endocrinology Clinic** – 4-6 clinics
- **Research Training** – continuous through 12 months
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2nd Year Rotations

- **Inpatient Endocrine Consult Service** – 1 month
- **Inpatient Diabetes Consult Service** – 1 month
- **Ambulatory Consultation Faculty Clinics** – 4 3-month rotations
- **Outpatient Continuity Clinic** – weekly
- **Pediatric Endocrinology and Metabolism Clinic** – 2 months
  
  (2015-2016 is final year as 2nd-year rotation)
- **Diabetic Retinopathy Clinic** – A hands-on training session and a 4-hour clinic
- **Thyroid Nodule Clinic** – 4 months
- **Bone Health Clinic** – 1 month
- **Research Training** – ongoing

Optional 3rd Year – Although a 3rd year of training is not required by the ACGME, the additional year is available given performance and interest in additional research training.

Electives Inpatient experience in nutrition is available as an elective. Outpatient electives include nutrition, high risk pregnancy, obesity, and others depending on the fellow’s interest.

Conferences

- **Rounds with Division Chief**– weekly, for those rotating on the Inpatient Consult Service
- **Medicine Grand Rounds**– weekly
- **Clinical Case Conference**– weekly
- **Metabolism, Obesity and Diabetes (MOD) Seminar**– weekly—September through May
- **Clinical Endocrine Course**– weekly—September through May
- **Bone Case Conference**– weekly—September through May
- **Endocrine Oncology Conference**– twice monthly
- **Pituitary Conference** once monthly—September through May
- **Endocrine Fellowship Interdisciplinary Training Sessions**– weekly—July & August
Special Seminars & Events

- **Dr. Alexander & Helena Schonfeld Lecture** – Honored Guest Lecturer
- **World Diabetes Day Seminar & Poster Session** – November/Annually; Honored Guest Lecturer
- **Philip E. Cryer Lecture** – Honored Guest Lecturer, Inaugural Lecture on September 3, 2015
- **Julio V. Santiago Memorial Lecture** – Annually; Honored Guest Lecturer
- **Fellows’ Research Presentations & Seminar** – twice yearly—December/May
- **Kilo Symposium** – once yearly—November
- **Fellows’ Research Presentations & Seminar** – twice yearly—December/May

Special Projects – ACGME requires that all fellows engage in and complete a Quality Assurance/Quality Initiative/Patient Safety Project with results to be presented to faculty and fellows in May of fellowship year 2.

Academic Portfolio – As each fellow will maintain an electronic compilation clinical requirements (thyroid ultrasound and thyroid biopsy reports, insulin pump downloads, CGM interpretations, DXA interpretations), certifications (CITI, GCP, others), ethics events attended, presentations, other scholarly activity such as abstracts, posters and manuscripts, and PSQI project report. A WU formatted curriculum vitae will be updated regularly and kept in the academic portfolio.

Institutional Resources

**Washington University Diabetes Center at Barnes-Jewish Hospital**

Founded in July 2006, the Washington University Diabetes Center at Barnes-Jewish Hospital offers a comprehensive and multidisciplinary outpatient and inpatient service for the prevention, diagnosis, treatment, and management of diabetes. Standardized inpatient protocols have been implemented to better manage inpatients, promote faster wound healing, hasten return to wellness, and facilitate faster discharge from the hospital.

*Endorsed by the American Diabetes Association as an “Education Recognition Program,” the outpatient Diabetes Center provides advanced treatment and specializes in instructing patients.* Patients receive coordinated, comprehensive care from Washington University endocrinologists and specially trained nurses and dieticians, certified by the American Diabetes Association as “diabetic educators.” Physicians and staff treat both newly diagnosed and long-term patients with diabetes using a range of comprehensive services in one convenient setting: individualized teaching sessions on controlling diabetes, small group classes with certified educators, and formalized instruction for insulin self-management, carbohydrate counting, and initiating and maintaining insulin pump therapy. Registered dieticians provide nutrition counseling in individual or group sessions. Services also include
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on-site foot care, computerized 72-hour blood sugar monitoring, and access to clinical trials evaluating new drug therapies for diabetes and lipid disorders.

Career Pathways Post Fellowship Training

Following completion of postdoctoral training, the division offers both informal and structured resources to assist junior faculty with developing careers in academic medicine as clinicians, clinical researchers, or basic scientists. Whether seeking an academic career as a faculty clinician and teacher or as an independent investigator, a variety of career pathways are available, such as the medical school’s ICTS which offers a Master’s in Clinical Investigation and the division’s BIRCWH program. *The Building Interdisciplinary Research Careers in Women's Health* supports the career development of faculty members who show exceptional promise for an independent research career that will benefit the health of women.

These junior faculty members, known as *Interdisciplinary Women’s Health Research* (IWRH) Scholars are nurtured as they make the critical transition from inchoate junior faculty member to full independent investigator. The program targets individuals who have recently completed clinical training or postdoctoral fellowships, bridging the gap between this advanced training and research independence. It also bridges different scientific disciplines and areas of interest in women’s health through a mentor pool of independent scientists representing eight different departments in health.

Training faculty & related clinical and research activities

- **Ana Maria Arbelaez, MD**  
  Glucose counterregulation and hypoglycemia

- **Thomas J. Baranski, MD, PhD**  
  G-proteins, pathogenesis of diabetes

- **Carlos Bernal-Mizrachi, MD**  
  Vitamin D and diabetes

- **Kim A. Carmichael, MD, FACP**  
  Optimizing endocrine care

- **Joumana Chaiban, MD**  
  Expanding diabetes and endocrine care

- **Roberto Civitelli, MD**  
  Intercellular signaling in bone

- **William E. Clutter, MD**  
  Endocrinopathy management

- **Paulina Cruz Bravo, MD**  
  Expanding diabetes and endocrine care

- **Julia Dunn, MD**  
  General Endocrinology at VA

- **Anne C. Goldberg, MD, FACP, FAHA**  
  Novel agents for dyslipidemias

- **Charles A. Harris, MD, PhD**  
  Glucocorticoids in obesity and diabetes

- **Cynthia Herrick, MD**  
  Expanding diabetes and endocrine care

- **Andrea Grandos, MD**  
  Pediatric endocrinology

- **Abby Solomon Hollander, MD**  
  Growth hormone and diabetes
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- Jing Hughes, MD, PhD
  Islet cell interactions and diabetes modulation

- Paul Hruz, MD, PhD
  Glucose transport

- Marina Litvin, MD
  Expanding diabetes and endocrine care

- Irfan J. Lodhi, PhD
  Adipocyte biology and its role in obesity and diabetes

- Bess A. Marshall, MD
  Carbohydrate metabolism and insulin resistance

- Janet B. McGill, MD
  Novel agents for diabetes

- Jeffrey Millman, PhD
  Stem cell technology in treating diabetes

- Colin Nichols, PhD
  Pancreatic beta cell function and ion channels in diabetes

- Richard E. Ostlund, MD
  Cholesterol absorption

- Dominic Reeds, MD
  Nutrition and diabetes care

- Maria Remedi, PhD
  Altered metabolism and electrical activity in pancreas, muscle and brain

- Amy Riek, MD
  Vitamin D and cardiometabolic outcomes

- Clay F. Semenkovich, MD
  Diabetes and lipid metabolism

- Julie M. Silverstein, MD
  Improving pituitary treatments

- Jennifer Sprague, MD
  Pediatric endocrinology

- Garry S. Tobin, MD
  Expanding diabetes care

- R. Reid Townsend, MD, PhD
  Novel molecular analysis and proteomics

- John W. Turk, MD, PhD
  Phospholipases, diabetes and obesity

- Fumihiko Urano, MD, PhD
  Insulin biosynthesis and Wolfram syndrome

- Neil H. White, MD, CDE
  Diabetes complications

- Michael P. Whyte, MD
  Inherited disorders of bone

- Burton Wice, PhD
  Incretins and beta cell function

- Naga Yalla, MD
  Expanding diabetes care

- Kevin E. Yarasheski, PhD
  Metabolism in HIV infection

2016 Clinical Fellows
Kevin Bauerle, MD, PhD
Victoria Bouhairie (Adjovu), MD
Sarah Bou Malham, MD
Jacqueline Cartier, MD
Ann Malbas, MD
Brian Muegge, MD, PhD
Schola Nwachukwu, MD
Karin Sterl, MD