SCHOOL OF MEDICINE
John T. Milliken Department of Medicine
Division of Endocrinology, Metabolism & Lipid Research

GOALS AND OBJECTIVES
Pediatric Endocrinology and Metabolism

St. Louis Children’s Hospital, 2nd floor / 2-Month Rotation for 1st-Year Fellows
Mondays 1:00 – 5:00 p.m. / Wednesdays 8:00 am – 12:30 pm / Friday mornings, TBD
(Includes mandatory inpatient rounds on Wednesday afternoons for at least 2 of the 4 weeks)

Consultants: Ana Maria Arbelaez, MD (Mondays); Jennifer Sprague, MD (Wednesdays)
Contact: Kathy Corey (314) 286-2725 / kathy.corey@wustl.edu

Educational Goals:
• To develop an understanding of endocrine disorders which develop in childhood.
• To gain insight into genetic and developmental contributions to hormonal disorders.
• To learn to diagnose and treat endocrine disorders which occur in adolescents.
• To understand the management difficulties which occur during adolescence.

Description of the Rotation: Adult fellows in endocrinology, diabetes and metabolism attend Pediatric Endocrinology and Metabolism Clinic one half day per week for 2 months at St. Louis Children’s Hospital. Adult fellows see children and adolescents with endocrine-metabolic disorders, typically in their first year, during individual rotations. This is a comprehensive pediatric endocrinology clinic that serves the St. Louis community and beyond. It includes patients referred for consultation and those receiving long-term care. Fellows are supervised by board certified pediatric endocrinologists.

Educational purpose (curriculum): All of the competency milestones are pertinent to this rotation. The educational purpose for internist fellows in this rotation is to gain an understanding of the unique presentations of endocrine-metabolic disorders in childhood and to be able to diagnose and treat pediatric endocrine-metabolic disorders in adolescents. The internist fellow should learn the diagnostic tests (stimulatory or inhibitory challenges, steroid panels, pituitary tests and genetic studies) used to diagnose disorders of growth and development, delayed or precocious puberty, primary or secondary thyroid diseases, congenital and acquired adrenal disorders, and rare inborn errors of metabolism. Fellows should learn the basics of treatment of hormonal disorders in infants and children while developing competency in the treatment of these disorders in adolescents. Internist fellows should become familiar with gender identity disorders and management of transgendered individuals – problems with direct carryover into adulthood. In addition, internist fellows should be able to diagnose and treat type 1 and type 2 diabetes in adolescents, appreciating the influence of the environment, social support and family structure on management issues in this age group.

Patient Care: Fellows will be expected to obtain a thorough history from the patient or family member that begins with birth and includes developmental milestones and problems, signs and symptoms of illness, family and social history and a targeted review of systems. Fellows should be
able to examine children and adolescents effectively, which includes accurate height and weight measurements, Tanner staging and the identifying signs of congenital disease. Fellows will be able to synthesize data from many sources, including records of growth and development, radiologic and laboratory studies, and interpretation of complex family histories to make diagnoses and treatment recommendations.

**Medical knowledge:** Fellows will demonstrate knowledge of common pediatric endocrine disorders, including the pathogenesis, diagnosis and treatment of problems with growth and development, puberty and specific problems with pituitary malignancies, thyroid diseases, adrenal disease and inborn errors of metabolism. Fellows will be expected to know how to differentiate type 1 and type 2 diabetes in children and adolescents and how to treat each type of diabetes in these age groups.

**Practice-based learning and improvement:** Fellows will understand the limitations of their knowledge and seek to improve their level of expertise in the diagnosis and treatment of endocrine disorders in children. Fellows will not be expected to act independently in this rotation, but will be expected to offer reasonable suggestions for diagnosis and management and contribute to case discussions and presentations. Fellows will be expected to read independently about cases that they have seen in rotation or heard presented at the weekly conferences.

**Interpersonal and communication skills:** Fellows should develop the ability to communicate effectively with children and their family members. Fellows should display an appropriate degree of sensitivity when dealing with developmental, behavioral or gender identity issues in children and adolescents. Fellows should be observant of communication techniques used by attending physicians, the pediatric fellows and ancillary health staff to get clear messages to families without unnecessary complexity. Fellows should demonstrate the ability to convey clinical information accurately and concisely in oral presentations and chart notes. Fellows will communicate laboratory results to patient families after discussing results with the attending pediatric endocrinologist.

**Professionalism:** Fellows should demonstrate respect, compassion and integrity along with a commitment to optimal patient care. Fellows should adopt behaviors that fully respect referring physicians, colleagues and ancillary health personnel. Fellows should engage in ongoing learning about patient illnesses and the best ways to communicate with all ages of patients.

**Systems-based practice:** Fellows should become familiar with charting methods for each clinic and facility as well as the resources available at each location.

**Teaching methods:** Teaching in the clinic setting is based on the cases evaluated that day and incorporates discussions about etiology, pathogenesis, diagnosis and management in addition to discussions about social support and challenges. In addition, the pediatric endocrine group has a weekly case conference (Fridays noon-2pm) that is well attended by faculty and fellows to thoroughly discuss difficult cases in order to generate consensus opinions about diagnosis or management. Internist fellows are encouraged to attend this conference. The pediatric group also presents one case per week at the Thursday morning conference with a review of the pertinent literature, presents regularly at the Clinical Case Conference and contributes to Journal Club and the Clinical Endocrine Course.
Mix of diseases: The most common disease treated by pediatric endocrinologists is type1 diabetes, which accounts for about half of their patient visits. The remaining half is a grand mix of patients with disorders of growth, puberty, thyroid, adrenal, pituitary, and bone plus other rare metabolic disorders, gender identity disorders and problems with ambiguous genitalia.

Reading lists and other educational materials: Fellows are encouraged to consult textbooks and manuals for background reading during this rotation. Articles are commonly shared at conferences.