

Medical Genetics Residency Training Program

Goal

To provide excellent training in both clinical and research areas of Medical Genetics.

Eligibility Requirements

Completion of at least two years of residency training in an accredited U.S. residency training program (most often in Pediatrics, Internal Medicine, Family Practice or Obstetrics and Gynecology; however, other disciplines will be considered).

We seek intelligent, hardworking men and women who will approach the intellectual and physical demands of this program with enthusiasm and a commitment to excellence. We are interested in training physicians as specialists in human genetics that are comfortable working with patients and families in dealing with complex diseases and syndromes.

General Overview

- Two -year program for M.D.'s.
- Institutions affiliated with The University of Texas Southwestern Medical Center at Dallas (UT Southwestern) and this program include:

Parkland Health and Hospital System (Parkland Hospital) – Founded in 1894, Parkland is Dallas County's only public hospital and is operated by the Dallas County Hospital District. Parkland was the first and still remains the primary teaching hospital for UT Southwestern's multifaceted educational programs. All of its physician services are provided under contract with UT Southwestern. Parkland delivers more babies each year than any other hospital in the country. The facilities include 990 beds, a Regional Burn Center, an outpatient clinic, and a Comprehensive Regional Level I Trauma Center.

Children's Medical Center of Dallas – Founded in 1913, this private not-for-profit hospital deals exclusively with the diseases and disorders of children from birth to age 18, and serves as the primary pediatric teaching facility for UT Southwestern. Half of the hospital's staff are full-time faculty members of UT Southwestern; the other half are private pediatricians. The facility includes more than 50 specialty outpatient clinics, and 322 beds including a 52-bed pediatric intensive care.

Texas Scottish Rite Hospital For Children – Founded in 1921, this private not-for-profit hospital deals in a wide range of pediatric orthopaedic conditions and learning differences, related neurological disorders and learning disabilities. It provides ongoing treatment without charge for more than 13,000 patients annually. All of the full-time physicians are members of the UT Southwestern faculty. Facilities include 100 beds, 600 employees and an annual budget of \$70 million.

- Additional training (one year each) for eligibility for certification in Clinical Cytogenetics, Clinical Biochemical Genetics (proposed), Clinical Molecular Genetics (proposed).

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Structure of the Clinical Training Program

Clinical Genetics

This two year program involves either 24 months devoted to rotations in the areas of clinical and laboratory genetics or 18 months devoted to clinical genetics rotations followed by six months of clinical or laboratory research. On completion of the program, the resident should be qualified to sit for the American Board of Medical Genetics (ABMG) examination for Clinical Genetics.

The residency is organized in one-month rotation blocks.

- **Year 1 - All Residents**

Four months will be spent on the basic **Clinical Genetics** rotation. This rotation includes outpatient work in the Pediatric Genetics/Dysmorphology Clinic, the Pediatric Metabolic Disease Clinic and the Down Syndrome Clinic which operate each week at Children's Medical Center of Dallas. The rotation also includes the Adult Genetics Referral Clinic (UT Southwestern Aston Center), the Lipid Clinic (UT Southwestern Aston Center) and the Metabolic Bone Disease Clinic (Texas Scottish Rite Hospital), which operate once or twice each month. The resident will participate in inpatient consultations for Clinical Genetics and Metabolism at Children's Medical Center of Dallas and Parkland Hospital. The resident will be responsible (along with the pediatric residents) for the care of inpatients at Children's Medical Center on the Metabolic Disease service.

Two months will be spent in the **Prenatal Genetics** rotation. This rotation includes work in the Prenatal Counseling Clinic at Parkland Hospital, the Birth Defects Ultrasound Diagnosis Clinic at Parkland Hospital, the Alpha Fetoprotein Counseling Clinic at Parkland Hospital, and the Prenatal Procedures Clinic at Parkland Hospital. The resident will also attend the Congenital Anomalies Multidisciplinary Conference at Parkland Hospital.

Four months will be spent in **Clinical Genetics Laboratory** rotations. These months include two months in the Cytogenetics Laboratory (one on constitutive chromosomal abnormalities and one on cancer cytogenetics), one month in the Biochemical Genetics laboratory, and one month in the Molecular Diagnosis laboratory.

Two months will be spent in **Genetics Specialty** rotations. This includes one month in the Cancer Genetics Clinic at UT Southwestern and one month in Adult Neurogenetics (including the Alzheimer Disease Diagnosis and Screening Clinic and the Adult Neuromuscular Disease/Muscular Dystrophy Clinics at UT Southwestern),

- **Year 2 - Clinical Track**

Four months are spent in the **Clinical Genetics** rotations described above.

Two months are spent in the **Prenatal Genetics** rotations described above.

One month is spent in the **Biochemical Genetics Laboratory**. This month is dedicated to tissue culture and enzyme assay techniques.

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Two months are spent in **Genetics Specialty** rotations:

- One month in the Adult Neurogenetics rotation described above.
- One month in Pediatric Neurogenetics/Muscular Dystrophy at Texas Scottish Rite Hospital for Children.

Three months in the second year are set aside for **Electives**. These may include additional time in any of the laboratories or clinics noted above, combinations of the Pediatric Specialty Clinics at Children's Medical Center of Dallas where patients with genetic disorders are followed (e.g. Cystic Fibrosis, Neurofibromatosis, Hemophilia, Hemoglobinopathy, Craniofacial, etc.), the Skeletal Dysplasia Clinics at Texas Scottish Rite Hospital for Children or in additional specialty laboratories.

- **Year 2 - Research Track**

Two months are spent in the **Clinical Genetics** rotations described above.

One month is spent in the **Prenatal Genetics** rotations described above.

One month is spent in the **Biochemical Genetics Laboratory**. This month is dedicated to tissue culture and enzyme assay techniques.

Two months are spent in **Genetics Specialty** Rotations:

- One month in the Adult Neurogenetics rotation described above.
- One month in Pediatric Neurogenetics/Muscular Dystrophy at Texas Scottish Rite Hospital for Children.

Six months in the second year are set aside for **Research**. The resident will participate in a research project in one of the laboratories at UT Southwestern conducting suitable studies in genetics. The project may be extended for an additional year (or more) if support from a National Research Service Award or similar funding source is obtained.

- **Basic Science Genetics Course**

Each resident is required to take two one semester graduate level courses in Genetics. A series of graduate courses has been designed to meet the needs for training medical genetics residents as well as graduate students in human genetics.

Throughout the residency, residents attend:

- **Clinical Genetics Conference** – Residents attend a biweekly, multidisciplinary clinical genetics conference.
- **Research Genetics Conference** – Residents attend a monthly basic science genetics seminar held in the McDermott Center for Human Growth & Development during the school year.

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Rotation Schedule Grid

The following grid is an example of a typical resident's schedule for each track.

	Research Schedule:	Clinical Schedule:
YEAR 1		
July	Clinical Genetics 1	Clinical Genetics 1
August	Prenatal Genetics 1	Prenatal Genetics 1
September	Cytogenetics Laboratory 1	Cytogenetics Laboratory 1
October	Clinical Genetics 2	Clinical Genetics 2
November	Cancer Genetics	Cancer Genetics
December	Biochemical Laboratory 1	Biochemical Laboratory 1
January	Clinical Genetics 3	Clinical Genetics 3
February	Adult Neurogenetics 1	Adult Neurogenetics 1
March	Molecular Genetics Laboratory	Molecular Genetics Laboratory
April	Clinical Genetics 4	Clinical Genetics 4
May	Prenatal Genetics 2	Prenatal Genetics 2
June	Cytogenetics Laboratory 2	Cytogenetics Laboratory 2
YEAR 2		
July	Clinical Genetics 5	Clinical Genetics 5
August	Pediatric Neurogenetics	Pediatric Neurogenetics
September	Biochemical Laboratory 2	Biochemical Laboratory 2
October	Clinical Genetics 6	Clinical Genetics 6
November	Prenatal Genetics 3	Prenatal Genetics 3
December	Adult Neurogenetics 2	Elective 1
January	Research 1	Clinical Genetics 7
February	Research 2	Adult Neurogenetics 2
March	Research 3	Elective 2
April	Research 4	Clinical Genetics 8
May	Research 5	Prenatal Genetics 4
June	Research 6	Elective 3

Subspecialty Genetics Training

The American Board of Medical Genetics (ABMG):

Allows subspecialty certification in Clinical Cytogenetics, Clinical Biochemical Genetics and Clinical Molecular Genetics. Such training for Genetics Residents occurs following their basic residency in Clinical Genetics. Each subspecialty requires one additional year of training. UT Southwestern is currently certified to offer training in Clinical Cytogenetics. We plan to apply for certification to train fellows in Biochemical and Molecular Genetics in the future.

Individuals with Ph.D.'s interested in directing genetics laboratories can take a two-year fellowship in the subspecialty areas and be eligible to take the American Board of Medical Genetics examination in that area.

Medical Genetics Residency Training Program

Core Program Faculty and Interests

- **Lewis J. Waber**, M.D., Ph.D. - Program Director
Inborn Errors of Metabolism, Inherited Metabolic Disease
- **Michael Bober**, M.D., Ph.D.
Pediatric Dysmorphology, Down syndrome, skeletal dysplasias, molecular diagnostics
- **Michael J. Bennett**, Ph.D. - Biochemical Genetics Laboratory
Inherited Metabolic Disorders, Defects in Fatty Acid Oxidation.
- **Frederick Elder**, Ph.D., - Cytogenetics Laboratory Director
- **Helen H. Hobbs**, M.D. - Genetics of lipid metabolism, Adult Genetics Clinic
- **Ron Ramus**, M.D., - Prenatal Genetics
- **Gail Tomlinson**, M.D., Ph.D.
Pediatric oncology, genetic testing and counseling of high cancer risk families, and Familial Cancer Registry
- **Kathleen Wilson**, M.D. – Cytogenetics
- **Roger A. Schultz**, Ph.D. – Cytogenetics
DNA repair and human disease, DNA repair and aging, chromosome and genome stability.
- **Andrew R. Zinn**, M.D., Ph.D. – Basic Science Genetics Course
Genetics of sex chromosome disorders and other disorders of growth and development.

Medical Genetics Residency Training Program

Application Information

The UT Southwestern Medical Center Medical Genetics Program is accredited by the Accreditation Council of Graduate Medical Education (ACGME) and the American Board of Medical Genetics (ABMG). It is a two year or more program providing eligibility for the American Board of Medical Genetics examinations, including the Biochemical Genetics, Molecular Genetics, Clinical Genetics, Cytogenetics, and Ph.D. Genetics subspecialties.

Entrance to the program is through one of two routes:

Medical Genetics

- 1) Individuals may apply to the program directly via the electronic application process. All applications are reviewed by the Medical Genetics Education Selection Committee. Select applicants will be interviewed by members of the Medical Genetics Education Selection Committee. They may choose a laboratory in which to do research after joining the program. Most residents will be chosen through this route.

Alternatively

- 2) Individuals apply to another department residency program at UT Southwestern, and apply for entrance to the clinical portion of the Medical Genetics Program prior to arrival at UT Southwestern. Candidates choosing the second route will be required to interview with and obtain the approval of the members of the Medical Genetics Education Selection Committee.

Candidates with an M.D. degree must have completed at least two years of training in a clinically related field. Previous training is usually in, but not limited to, Pediatrics, Internal Medicine, Family Practice or Obstetrics and Gynecology. Candidates should apply directly to the program 12 to 18 months prior to the July 1 starting date.

Electronic Application

To apply for consideration to this program, complete the [electronic application](#) found on our website.