School of Health Professions
Master of Science in Diagnostic Genetics

BEST HOSPITALS U.S.News WORLD REPORT NATIONAL CANCER 2019–20

The University of Texas MD Anderson Cancer Center is ranked No. 1 for cancer care by U.S. News and World Report's "Best Hospitals" survey.

University of Texas System

MD Anderson was created in 1941 as part of the University of Texas System.

TMC TEXAS MEDICAL CENTER

Located in the Texas Medical Center, the largest medical complex in the world.

Learn and work

with expert faculty who have years of practical experience in their field.

1 of 3 Master of Science programs in Diagnostic Genetics in Texas.
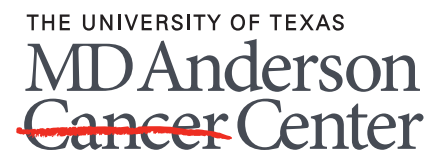
1 of 4 in the U.S.

Tuition and Fees

$2,400 Texas resident
$9,600 Non resident

Estimated tuition and fees for 12 semester credit hours. A number of competitive SHP scholarships may be available to aid in tuition costs.

THE UNIVERSITY OF TEXAS
MD Anderson
~~Cancer~~ Center

Making Cancer History®

School of Health Professions

The University of Texas MD Anderson Cancer Center
1515 Holcombe Blvd, Unit 0002
Houston, TX 77030
713-745-1205

mdanderson.org/SHP
askSHP@mdanderson.org

Accreditation

The University of Texas MD Anderson Cancer Center is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of MD Anderson Cancer Center.

The Diagnostic Genetics program is accredited by and conforms its curriculum to the standards published and monitored by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

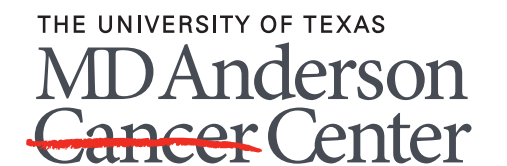5600 N. River Rd, Ste 720 | Rosemont, IL 60018-5119 | 773-714-8880 | naacls.org

Attain expertise in state-of-the-art technology to aid in discovery of genetic mechanisms of disease, and diagnosis and prognosis of disease at the genetic level

mdanderson.org/SHP/DG

THE UNIVERSITY OF TEXAS
MD Anderson
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Making Cancer History®

Master of Science in Diagnostic Genetics

The Master of Science in Diagnostic Genetics (MS-DG) concentrates on the development of intellectual, technical, analytical and interpretive skills in the following key fields:

- Genetics and genomics of hematological malignancies
- Solid tumor genetics and genomics
- Genomics of infectious diseases, and clinical metagenomics
- The human microbiome
- Pre and post-natal genetics and genomics
- Human identity testing
- Model organism and comparative human genomics
- Quantitative genome data sciences and bioinformatics

The program offers two tracks leading to the Master of Science degree

- Molecular Genetics and Genomics
- Cytogenetics and Cytogenomics

"The two-year Master of Science degree in Diagnostic Genetics addresses the growing need for a graduate level program that combines a strong diagnostic genetics core-curriculum with a vigorous clinical and research experience. The program is tailored to individuals seeking clinical and research laboratory-based or education-oriented careers in diagnostic genetics."

Peter Hu, Ph.D., Dean ad interim
School of Health Professions

Why a Master of Science degree in Diagnostic Genetics?

Newer technologies, coupled with affordable and faster human, bacterial, viral and metagenome sequencing capabilities, have thrust precision medicine into the national spotlight. However, the medical industry is struggling to implement precision medicine into patient management because there aren't enough trained personnel who can deploy cytogenomic or molecular genomic toolkits, including quantitative genome data sciences and bioinformatics to develop new diagnostic methods and generate new insights into disease mechanisms.

MS-DG training programs, which include project-based curricula, diagnostic laboratory rotations, and 12-15 months of thesis research, collectively enable the development of core intellectual, technical and analytical competencies in genomics and cytogenomics. MS-DG core curricula integrate classroom knowledge on the structure and function of chromosomes and genomes with hands-on experience using sophisticated tools for the analysis and interpretation. The program aims to empower MS-DG graduates with demonstrable evidence of applying state-of-the-art research to the development of new diagnostic tests, new patient management protocols or new insights into disease mechanisms.

MS-DG graduates enjoy a wide range of career options:

- Diagnostic labs within a hospital setting (technologist, supervisory or managerial positions)
- Research laboratories (research assistant, research associate, managerial positions)
- Biotechnology and Genomic companies (R&D and sales positions)
- Teaching institutions (instructor/faculty positions)

Moreover, MS-DG graduates are often successful in pursuing higher education (PhD or MD) at highly reputable institutions, including MD Anderson.

Competitive application process

Students enter the program in August of each year. Applicants are selected through a competitive admissions criteria that includes a strong foundation in genetics, cell and molecular biology, prior research experience, and aptitude and drive to succeed in a highly rigorous and fast-paced environment.

For application deadlines, detailed requirements and admission forms, please refer to our website mdanderson.org/SHPapply.

The minimum requirements for admission consideration include:

- Bachelor of Science degree in biological or biomedical sciences. Applicants holding MS, PhD or MD degrees are also encouraged to apply
- Minimum grade point average of 3.0
- International students whose native language is not English must submit TOEFL or IELTS scores
- A grade-by-grade and course-by-course evaluation of foreign degree equivalency from MD Anderson-approved agencies should be provided and must meet minimum GPA requirements
- Three professional recommendation forms
- Admission interview is by invitation only, and meeting minimum requirements does not guarantee an interview
- Applicants are required to take an on-site test based on coursework listed below

Prior experience and coursework

Applicant must have taken senior-level or upper-division courses in two or more fields listed below:

- Molecular biology and biochemistry
- Molecular evolution and evolutionary biology
- Genetics and genomics
- Cell biology, cytogenetics or cytogenetic technology
- Molecular genetics or molecular genetic technology
- Microbiology, clinical microbiology, bacteriology or virology
- Statistics, quantitative biology or bioinformatics
- Bioinformatics, Python, R or computer sciences
- Prior laboratory research experience is a plus but not required