

Residency and Fellowship Programs

Through the Next Generation Fellowship & Training Program the ACMG Foundation accepts applications from accredited programs sponsoring qualified applicants for two medical genetics residencies (1. Clinical Genetics and Genomics and 2. Medical Biochemical Genetics) and two laboratory genetics fellowships (1. Laboratory Genetics and Genomics and 2. Clinical Biochemical Genetics) . When funds become available to the Foundation through our development efforts, we screen applicants and award as many scholarships as possible to the most qualified candidates. As of 2021, institutions that apply on behalf of a PhD applicant are awarded \$65,000 annually, while those advancing MD candidates are provided an annual stipend of \$75,000.

Three Specialty Certificates are offered:

1. Our **“Clinical Biochemical Genetics (Laboratory Fellowship)”** Primary Specialty Certificate equates to the ABMGG’s certificate in *Clinical Biochemical Genetics* on the [ABMGG website](#).

ACMG developed two separate tracts for this fellowship program:

- a) **For experienced MDs already board-certified in genetic and genomic medicine**, a one-year tract is available.
- b) **For MDs from other specialty areas or for PhDs with a genetic and genomic background**, this specialty certificate will require two years to complete.

ABMGG’s website describes this fellowship as follows:

“A clinical biochemical geneticist demonstrates competence in directing and interpreting a wide range of specialized, laboratory biochemical genetic analyses relevant to the diagnosis and management of inherited metabolic disorders. The specialist acts as a consultant regarding laboratory diagnosis on a broad range of inborn errors of metabolism.”

This Laboratory Fellowship build the workforce pipeline for clinical biochemical laboratory geneticists. These experts develop and implement new tests, provide ongoing assurance of the quality of routine tests, interpret test results, and communicate these results to healthcare providers. Training involves an additional 2-year (24-month) fellowship following the completion of a PhD degree, or one year of study for approved candidates with an MD in genetic or genomic medicine.

This Fellowship’s academic focus is on the development, application, and interpretation of genetic and genomic laboratory tests. The program also covers the administrative requirements necessary to meet national laboratory compliance standards. Program participants gain the ability to direct a clinical laboratory by the end of their training.

Awardees must also design a clinical laboratory research project and conduct that research over the course of the Fellowship. Ideally this project will be translational in nature and applicable to advancing clinical genetic and genomic testing. Awardees are encouraged to share the results of their work by submitting an abstract for the ACMG Annual Clinical Genetics Meeting held in the spring of each year.

Applicants may also request a one-year medical genetics residency fellowship for a single specialty certification. An additional year may be sought for an additional laboratory specialty.

2. The Foundation's "**Clinical Genetics & Genomics Residency**" award is a two-year program intended for medical doctors who will ultimately treat patients.

This scholarship corresponds to the Primary Specialty Certificate found on the ABMGG website entitled "*Clinical Genetics and Genomics (MD)*". As ABMGG explains for this course of study:

"A clinical geneticist demonstrates competence in providing comprehensive diagnostic, management, therapeutic, and counseling services for individuals and families at risk for clinical disorders with a genetic basis. The specialist is trained to evaluate individuals of all ages for hereditary conditions."

Clinical Genetics Residencies are available to medical students who wish to pursue a two-year medical genetics residency. Clinical responsibilities of medical genetics residents include providing patient care in dysmorphology and pediatric metabolic and genetics clinics, prenatal diagnosis clinics, and adult genetic disease clinics/genomics, such as cancer risk genetics.

Applicants should have completed at least one year of initial residency training in some other area of study recognized by the Accreditation Council for Graduate Medical Education.

Applicants to this residency program can choose to pursue either categorical residency program (i.e., awardees only trained in medical genetics) or can decide to combine their training with one other board training certificate in pediatrics, maternal fetal medicine, or internal medicine.

This program also requires that applicants design a research project and conduct that research over the course of the program. Ideally this project will be translational in nature and applicable to advancing clinical genetic and genomic medicine. Awardees are encouraged to share the results of their work by submitting an abstract for the ACMG Annual Clinical Genetics Meeting held in the spring of each year.

3. The Foundation's last Primary Specialty Certificate program "**Laboratory Genetics and Genomics (LGG Fellowship)**" is also open to PhD and MD candidates. Our LGG Fellowship corresponds to the ABMGG's certificate of the same name and is described on the Board's website as follows:

"A diplomate certified in Laboratory Genetics and Genomics demonstrates competence in directing and interpreting both clinical cytogenetic and molecular genetic analyses relevant to the diagnosis and management of human genetic disease. This specialist acts as a consultant in laboratory diagnoses for a broad range of molecular and chromosomal-based disorders, including both inherited and acquired conditions."

Note that study in the subspecialties of Clinical Cytogenetics and Genomics as well as Clinical Molecular Genetics and Genomics were merged into the LGG Fellowship program in 2017.

More recently, these genetics-focused academic laboratory programs began transitioning from ABMGG's oversight and are becoming the purview of the Accreditation Council for Graduate Medical Education (ACGME). Beginning in 2021, accreditation for programs instructing

geneticists in clinical laboratory medicine (Clinical Biochemical Genetics and Laboratory Genetics and Genomics accreditation) are anticipated to be overseen by ACGME. For a detailed question and answer review of the Laboratory Genetics and Genomics programs visit this 2018 ACGME publication [found here](#). As second document ([found here](#)) answers questions related to Clinical Biochemical Genetics and may also be helpful.

The ACMG Foundation's Subspecialty Certificate:

4. The final program the Foundation funds under the NextGen program is the **Medical Biochemical Genetics Subspecialty Program**.

ABMGG described is year of study as follows:

"A medical biochemical geneticist demonstrates competence in the diagnosis, medical treatment and management of individuals with inherited metabolic conditions presenting clinically from infancy through adulthood, including via newborn screening. The subspecialist provides direct care and consultative care for individuals of all ages who are diagnosed with inborn errors of metabolism."

This one-year residency course of study, also titled "Medical Biochemical Genetics (MBG) Subspecialty" by the ABMGG, is intended to for clinical geneticists who have completed a clinical genetics residency. Experts in medical biochemical genetics diagnose and manage patients who are at risk for, or have already developed, metabolic genetic diseases. This specific program seeks to increase the number of medical geneticists with interest, knowledge, and expertise in this field.

MBG participants receive in-depth clinical or laboratory experience at a premier medical center with expertise and "significant clinical and laboratory volume" in biochemical genetics, including lysosomal storage diseases, as well as in therapeutics and clinical trials involving patients with these and other metabolic diseases.

This program also requires that applicants design a research project and conduct that research over the course of the program. Ideally this project will be translational in nature and applicable to advancing clinical genetic and genomic medicine. Awardees are encouraged to share the results of their work by submitting an abstract for the ACMG Annual Clinical Genetics Meeting held in the spring of each year.

For all the two-year Next Generation awards, the ACMG Foundation encourages institutions to recommend trainees who are strong candidates and have fulfilled the prerequisites according to ABMGG for the training they seek.

Selection committee members will make every effort to fund the most qualified awardees across all categories during their annual review of applications each summer. The final decisions about which applicants are funded will be determined by 1) the quality of the applications and 2) the amount of funding available in any given year. The ACMG Foundation will announce the anticipated number of slots available in the second quarter of any given year.

Should additional funding become available after the needs of these programs are met, or if targeted funding becomes available, the College and the Foundation may slightly alter or amend future areas of study under the Next Generation Program. Realizing our mission requires that we ensure the medical education demands of our field are met, and that experts are trained in all areas possible.

Please contact info@acmgfoundation.org for more information.