



American Society of Human Genetics

Career Paths in Genetics

The demand for genetics and genomics professionals in healthcare, academia, industry, and government is booming. There are numerous career options for someone with an interest in genetics and genomics, requiring a range of skills and educational experiences.

Check out this selection of careers related to genetics and genomics, listed by minimum required degree. There are many more options than just what is listed here! Browse the list and get inspired to pursue a career in human genetics and genomics.

Undergraduate Degree (BA/BS)

- ◆ **Laboratory Technician.** Lab technicians work in basic research or clinical laboratory work, assisting and supporting senior lab personnel. Duties often include conducting experiments, ordering supplies, maintaining equipment or animal colonies, and preparing and storing samples.
- ◆ **Genetics Nurse.** With additional training, Registered Nurses (RNs) can become credentialed in genetics through the [Genetic Nursing Credentialing Commission](#). Like other RNs, genetics nurses usually work as part of a medical team.
- ◆ **Forensic Science Technician.** Forensic science is at the intersection of science and law. Most forensic science technicians work in a crime lab for a specific jurisdiction, where they are responsible for collecting and analyzing evidence that involves use and interpretation of genetic or genomic technologies.
- ◆ **Science Writer or Illustrator.** Science writers and illustrators help communicate scientific concepts, often making them accessible and understandable for the public. They can work for publication agencies, research and healthcare institutions, or as freelance contractors.
- ◆ **Basic Research Scientist.** Also known as an independent basic researcher, these professionals may study genetics and genomics in humans or model organisms at academic institutions, in the biotechnology sector, or in government laboratories. Unlike clinical researchers, basic research scientists do not interact with patients directly.
- ◆ **Management Consulting.** Management consultants typically leverage their experience in science and business at consulting firms, where they may address issues identified by corporate clients.



Master's Degree (MA/MS)

- ◆ **Genetic Counselor.** Genetic counselors are health professionals with specialized training in providing services to individuals and families as they make decisions about their genomic health and risks. They often work as part of a health care team in settings where genetic education, tests, and services are delivered.
- ◆ **Program Officer.** Program officers, also known as grants officers, work on behalf of funding agencies with individuals and organizations seeking support. They usually work in government agencies or for non-profit institutions, where they are responsible for implementing, managing, and reviewing grants programs.
- ◆ **Bioinformatician.** Bioinformatics is a field of science that connects computing, big data, and biology. Bioinformaticians research, develop, and apply computational tools and approaches to manage and analyze large sets of genomic data.



Law Degree (JD)

- ◆ **Bioethicist.** Professionals with a background in law and additional training in genetics and genomics are concerned with the societal, ethical, and philosophical issues surrounding scientific and medical advances. They may work in academic institutions or think tanks, where they interact with the scientific community and the broader public.

Medical Degree (MD/DO)

- ◆ **Clinical Research Scientist.** Also known as independent clinical researchers, clinical research scientists conduct research on human disease, typically in hospitals, medical schools, industry, and government. Unlike basic science researchers, they interact with their subjects in a clinical setting.
- ◆ **Physician/Clinical Geneticist.** Today, most medical specialties require a familiarity with genetics and genomics. In addition, physicians may specialize further in genetics and genomics by becoming certified in clinical genetics and genomics.



Doctoral Degree (PhD)

- ◆ **College Professor (teaching focus).** The main focus of professors at colleges and other higher education institutions is teaching, although many also conduct research.
 - Also consider the role of professor at a research institute, which requires postdoctoral training, or training after you receive your PhD.

Medical/Doctoral Degree (MD/PhD) - a doctoral degree for physician–scientists

- ◆ **Clinical Laboratory Geneticist.** Clinical laboratory geneticists usually work in specialized genetic testing laboratories that perform and interpret testing for genetic disorders. Doctoral level degrees are required to lead these operations. These professionals are often part of the healthcare team and may work in academic or research institutions, hospitals, or biotechnology companies.
- ◆ **Science/Health Policy.** These professionals work at the interface between science/medicine and public policy, often in government agencies, scientific non-profits, and Congressional offices. They may develop policies to guide scientific research or work so that public policy represents the most current scientific knowledge.
- ◆ **An MD/PhD can also be a Clinical Research Scientist or a Basic Research Scientist.**
- ◆ **Clinical Practice in Genetics and Genomics.** Medical doctors specialized in genetics and genomics can establish clinical practices, often within the setting of a hospital or academic medical center. PhD level board certified professionals often direct clinical genetics and genomics laboratories.