



# UNIVERSITY OF NEVADA SCHOOL OF MEDICINE

## CAREERS IN GENETICS

### **Genetics in Basic Research**

A student desiring to become a geneticist working in basic research, should study math, chemistry and physics in high school and college in addition to biology. In college, students would normally major in biology, genetics, or any one of the physical sciences. After college, students would enter a Ph.D. program in genetics during which time they would usually be supported by fellowships, which cover tuition and living expenses. After obtaining a Ph.D. degree, students would then be qualified to assume faculty positions at academic institutions or join the staffs of research institutes or biotechnology firms.

### **Laboratory Geneticist**

Application of modern genetic technology to agriculture, legal or police work, pharmaceutical development, and clinical medicine requires the services of sophisticated laboratories. These laboratories are staffed by scientists trained in molecular biology, cytogenetics, biochemical genetics, and immunogenetics. Genetic laboratory directors usually hold Ph.D. degrees or M.D. degrees with specialization in laboratory medicine. Most genetic laboratory technologists have four to six years of university education. The career of a laboratory geneticist offers the opportunity to apply genetics “hands on” to a variety of important problems. Average annual salaries range from \$38,000 to \$88,000.

### **Clinical Geneticist**

Clinical geneticists usually have an M.D. degree. Therefore, undergraduates would need to satisfy the requirements for medical school admission. After medical school, a residency in pediatrics, obstetrics-gynecology, or internal medicine should be completed, followed by a fellowship in clinical genetics. Currently, most residency programs are three to five years; fellowships are an additional two or three years. Individuals could work in research centers, hospitals or medical centers.

### **Genetic Counselors**

Genetic counselors are health professionals with specialized graduate degrees and experience in the areas of medical genetics and counseling. Most enter the field from a variety of disciplines, including biology, genetics, nursing, psychology, public health and social work. Genetic counselors work as members of a health care team, providing information and support to families who have members with birth defects or genetic disorders and to families and individuals who may be at risk for a variety of inherited conditions. They identify families at risk, investigate the problem, interpret information about the disorder, analyze inheritance patterns and risks of recurrence, and review available options with the family or individual. Genetic counselors also provide supportive counseling, serve as patient advocates and refer individuals and families to community or state support services. They serve as educators and resource people for other health care professionals and for the general public. Some counselors also work in administrative capacities. Many engage in research activities related to the field of medical genetics and genetic counseling. Salaries range from \$30,000 to \$85,000 depending on education, location, and experience.

### **Where can I get more information?**

- Colleen Morris, M.D. University of Nevada School of Medicine  
2040 W. Charleston Blvd., A100; Las Vegas, NV 89557  
(702) 671-2231
- National Society of Genetic Counselors: <http://www.nsgc.org/>