Genetic Counseling

Career Description

• Genetic counselors combine their knowledge of basic science, medical genetics and counseling theory with their skills in genetic assessment, education, and interpersonal communication to provide services to clients and families.
• Genetic counseling is a process of educating families about their chances of passing on genetic predispositions or disorders to their children or of having inherited disorders themselves.
• By providing information about the implications of genetic conditions, genetic counselors help individuals and families make informed medical and personal decisions.
• They collect extensive family health histories, assist in interpreting information, analyze the chance of recurrence and review the prognosis and available medical management.
• Besides having a strong understanding of the science of genetics and the ability to teach this in an easy to understand way, genetic counselors provide counseling to families during difficult times.
• They form part of a support network for the families and assist in connecting them with further community and state services.
• Genetic counselors serve as resources for other health professionals who may not have a full understanding of the genetics involved or the family issues they are encountering.
• Many genetic counselors are involved in research.
• Genetic counselors may discuss available or experimental gene therapies with clients.

Becoming a Genetic Counselor

• Genetic counselors are certified through the American Board of Genetic Counselors (ABGC).
• Certification to practice requires a master’s degree, clinical experience in an ABGC approved site, a logbook of at least 50 supervised cases, and completion of general and specialty certification exams.
• Coursework during training generally includes genetics, population genetics, cytogenetics, teratogen counseling, molecular genetics as well as psychosocial theory, disability studies, and counseling techniques.
• Entry into a master’s program will require a bachelor’s degree, certain prerequisite courses, and generally an aptitude test (typically the GRE).
• Programs generally require a minimum of a 3.0 undergraduate GPA, though actual GPA for admission may be considerably higher as there are few programs and each takes only a small number of students.

Prerequisite Courses

• As this field involves both science and counseling skills, students need to take a variety of classes.
• Each graduate program can set its own requirements so students need to research possible programs and learn about their required courses.

Common Prerequisite Courses (pre-reqs determined by each program but similar to this list)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
<th>Purdue Equivalents (specific courses may vary by major)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology with lab</td>
<td>General</td>
<td>BIOL 11000-11100 or 13100 &amp; 23100 &amp; 23200 (lab)</td>
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<tr>
<td></td>
<td>Genetics</td>
<td>BIOL 24100</td>
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<tr>
<td>Chemistry with lab (except for biochem)</td>
<td>General (inorganic)</td>
<td>CHM 11500-11600 or 12901 (11500 credit exam recommended) or 12500-12600 or 12300-12400</td>
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<tr>
<td></td>
<td>Organic</td>
<td>CHM 25500-25600 or 26100-26200 or 26505-26605 or MCMP 20400-20500</td>
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<tr>
<td></td>
<td>Biochemistry</td>
<td>BCHM 30700 or 56100 or CHM 33300 or 33900 or 53300 or MCMP 20800</td>
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<tr>
<td>Psychology</td>
<td>Introduction</td>
<td>PSY 12000, developmental psychology courses recommended</td>
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<tr>
<td>Statistics</td>
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<td>STAT 30100 or 50300, some schools might accept PSY 20100 or SOC 38200</td>
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<tr>
<td>Recommended Coursework</td>
<td></td>
<td>English composition, Biomedical Ethics, Sociology, Religious Studies and Philosophy courses, <em>Upper level biology may be required</em></td>
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Job Outlook

- While most genetic counselors work in university medical centers or private and public hospitals, others work in a variety of settings including research, diagnostic labs, the pharmaceutical industry, public health, healthcare consulting, marketing and product development, policy development and advocacy.
- As genetic knowledge has increased a number of specialty areas have developed where genetic counselors are working with patients and physicians including:
  - Assisted reproductive technologies & Infertility
  - Cardiovascular genetics
  - Familial cancer risk counseling
  - Fetal intervention and therapy
  - Hematology
  - Metabolic genetics
  - Neurogenetics
  - Pediatric counseling
  - Personalized medicine
  - Prenatal counseling and Ultrasound anomalies
  - Psychiatric disorders
- As people become more aware of genetics and as genetic interventions develop, genetic counselors will be well positioned for growth in their field.
- Salaries range from $58,000-$150,000 depending on type of position and years of experience. The Bureau of Labor Statistics estimated the average salary in 2015 to be $72,090. Jobs in the field are projected to grow by 29% through 2024.

Preparation

- Observation in a genetic counseling clinic is highly recommended.
- Strong applicants generally also explore the counseling profession by volunteering as a crisis-counselor and/or interacting with people with disabilities or in bereavement counseling.
- Research experience is a plus. Learning about human subjects review boards is also a good idea.
- The Graduate Record Exam (GRE) general aptitude test is needed to apply to most programs.
- For those from non-English speaking countries, the TOEFL is usually required.

Applying

- Application is made directly with the individual schools of genetic counseling.
- Early application is recommended as many programs take only a handful of students.

Fee Assistance

- Visit specific school websites to learn if fee assistance is offered.
- [GRE Fee Reduction Program](https://www.ets.org/gre/revised_general/about/fees/reductions/)

More Information

- [American Board of Genetic Counseling](http://www.abgc.net)
- [National Society of Genetic Counselors](http://www.nsgc.org)
- [Indiana Network of Genetic Counselors](http://www.ingc.info/site/)

Programs in the Region

- [IUPUI](http://genetics.medicine.iu.edu/education/master-of-science-genetic-counseling-program/)
- [Indiana State University](http://www.indstate.edu/genetic-counseling)
- [Northwestern University](http://www.cgm.northwestern.edu/education/graduate-genetic-medicine/index.html)
- [University of Cincinnati](http://www.geneticcounseling4u.org/about/about.html)

Information for this career guide came from the above websites, the [Bureau of Labor Statistics](https://www.bls.gov/ooh/healthcare/genetic-counselors.htm), and those of individual schools.