GENETIC COUNSELING (MS)

Overview
We offer a 21 month (5 semester) program of graduate study leading to the Master of Science (M.S.) degree. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC) for the training of master’s level genetic counselors.

The Mission of the University of Colorado Graduate Program in Genetic Counseling is to train competent, compassionate and innovative graduates who will effectively integrate professional practice and human genomics to deliver quality, client-centered genetic counseling services, promote informed health policy, and engage in scholarship, advocacy and leadership activities throughout their careers.

The program's curriculum and the instructional objectives of each component of the training reflect and support students' development of the Practice-based Competencies (PBCs) identified by ACGC as necessary for current and evolving genetic counseling practice. Through their training, students will learn to effectively assist patients, health care providers and the public to understand and appropriately utilize genetic information and testing to promote individualized and informed health choices and wellbeing.

The comprehensive curriculum combines in-depth didactic coursework in the scientific, clinical, psychosocial and professional practice aspects of genetic counseling with extensive, hands-on clinical experience in pediatric, prenatal, adult, oncology and specialty genetics clinics.

Clinical training is provided through:

- Children's Hospital Colorado
- University of Colorado Hospital in the Anschutz Centers for Advanced Medicine and University of Colorado Cancer Center
- Telehealth Genetics Clinics serving patients throughout Colorado
- And other area genetic counseling centers

All students participate in clinical case conferences, genetics seminars, journal club, and clinical research activities.

The program's graduates are in very high demand and typically receive employment offers prior to graduation. They work throughout the U.S. and Canada, and in all areas of genetic counseling practice. Their performance on the American Board of Genetic Counseling (ABGC) board certification examination is excellent, with a first-time passing rate of 100% for the past 7 years (2016-present). The program's attrition rate during the same period is zero.

The Genetic Counseling Program at the University of Colorado Anschutz Medical Campus is accredited by the Accreditation Council for Genetic Counseling, Inc., 7918 Jones Branch Drive, Ste. 300, McLean, VA 22102. Telephone: (703) 506 - 7667.

Genetic Counseling Admissions Match
The MS Genetic Counseling Program participates in the Genetic Counseling Admissions Match through National Matching Services (NMS) (https://natmatch.com/gcadmissions/). The GC Admissions Match has been established to enhance the process of placing applicants into positions in masters-level genetic counseling programs that are accredited by the Accreditation Council for Genetic Counseling (ACGC). The Match uses a process that takes into account both applicants' and programs' preferences. All applicants must first register for the Match with NMS before applying for admission to the genetic counseling program and include their unique NMS registration number in the application. At the conclusion of all program interviews, both applicants and programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to both applicants and programs simultaneously in late April. Please visit the NMS website (https://natmatch.com/gcadmissions/) to register for the match, review detailed information about the matching process, and to view a demonstration of how the matching algorithm works. A match fee waiver program (https://www.cuanschutz.edu/docs/librariesprovider233/genetic-counseling/agcpd-nms-match-fee-waiver-language-for-program-websites-2023-cycle.pdf?sfvrsn=2def60bb_2) for qualifying prospective students is administered by the Association of Genetic Counseling Program Directors (AGCPD); qualifying individuals should apply for a fee waiver before registering for an NMS number and must do so by the deadline set by AGCPD for the next admissions cycle.

Admissions Requirements
1) Fulfillment of the academic requirements for regular admission to the Graduate School:

- A baccalaureate degree or its equivalent from a college or university of recognized standing in the biological sciences, psychology, social work, nursing or a related field.
- MINIMUM undergraduate grade point average of 3.0 on a 4.0 scale.

2) Completion of the online application form and submission of supporting materials. Access the online application website at: https://graduateschool.cuanschutz.edu/admissions/apply

3) FOUR letters of recommendation are required. Recommendations should be requested from individuals who know the applicant in an academic or professional context and can directly attest to the applicant's academic performance, professional abilities, and potential for success as a graduate student and genetic counselor. Preferably, at least two of the recommendations should be from academic sources (course professors, major/academic advisor, research mentor, thesis advisor), while others should be from supervisors in volunteer/advocacy or professional contexts. Recommendations from family members and personal/family friends are strongly discouraged.

Please remind recommenders that providing specific narrative discussion about the candidate's performance and qualifications is extremely helpful, in addition to the ratings requested on the recommendation form.

Please allow your recommenders adequate time to write and submit your recommendations. Recommendations submitted after the January 1 deadline will not be accepted. All recommendations are subject to verification of authenticity.

- The application site provides instructions for sending requests to your recommenders and for sending follow-up reminders to them, if needed, prior to the application deadline. This online system enables the recommender to complete a secure, online recommendation and submit it directly to the online system. Please plan ahead! If you wait until too close to the deadline to request your recommendations, your recommenders may not have adequate time to submit their materials prior to the deadline and your application cannot be reviewed. It is the responsibility of the applicant to ensure that these materials have been submitted prior to the deadline.
• An official set of recommendation letters submitted directly from a
  school career center is acceptable.
• Recommendations that have been in the possession of the applicant
  cannot be accepted.

4) ONE official copy of each transcript must be sent directly from all
colleges and universities attended (degree and non-degree), regardless of
the number of courses taken. Electronic submission of official transcripts
by the registrar’s office of each institution attended is preferred
and should be emailed to GraduateAdmissions@cuanschutz.edu
(GraduateAdmissions@ucdenver.edu). If the applicant has completed
a study abroad program and the courses and final grades earned
for them are reported on the main undergraduate transcript, then
original transcripts from the host institution overseas do not need to be
submitted. Transcripts marked “issued to student” will only be accepted
if they are in their original sealed (unopened) envelopes as issued by the
registrar. All transcripts are subject to verification of authenticity.

International students must meet ALL of the requirements above and
those required by International Admissions.

Degree Requirements
Take 47 Credits from the following:

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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GENC 6101</td>
<td>Psychosocial Aspects of Genetic Counseling I</td>
<td>2</td>
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<tr>
<td>GENC 6105</td>
<td>Basic Interviewing Skills</td>
<td>1</td>
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<tr>
<td>GENC 6110</td>
<td>Topics in Medical Genetics I</td>
<td>3</td>
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<tr>
<td>GENC 6120</td>
<td>Clinical Cytogenetics and Molecular Genetics</td>
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<td>GENC 6121</td>
<td>Laboratory in Clinical Cytogenetics and Molecular Genetics</td>
<td>2</td>
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<tr>
<td>GENC 6170</td>
<td>Introduction to Clinical Research for Genetic Counseling Students</td>
<td>1</td>
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<th>Code</th>
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<tr>
<td>GENC 6140</td>
<td>Human Inborn Errors of Metabolism</td>
<td>2</td>
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<tr>
<td>GENC 6150</td>
<td>Congenital Malformations and Disorders of the Newborn</td>
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<td>GENC 6120</td>
<td>Topics in Medical Genetics II</td>
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<td>GENC 6111</td>
<td>Seminar in Clinical Cytogenetics and Molecular Genetics</td>
<td>1</td>
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<tr>
<td>GENC 6130</td>
<td>Cancer Genetics and Genetic Counseling</td>
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Take 1 Required Applied Clinical Rotation course as assigned by program advisor.

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<tr>
<td>GENC 6940</td>
<td>Capstone in Genetic Counseling</td>
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Take 1-2 Required Applied Clinical Rotation courses as assigned by program advisor.

Learning Objectives
The Genetic Counseling M.S. Program trains graduate students to
become competent and effective health professionals. The Accreditation
Council for Genetic Counseling (ACGC) accredits genetic counseling
graduate programs in North America. ACGC defines the following
Practice-Based Competencies (PBCs) that an entry level genetic
counselor must demonstrate:

The PBCs are categorized into the following four domains: (1) Genetics
Expertise and Analysis; (2) Interpersonal, Psychosocial and Counseling
Skills; (3) Education; and (4) Professional Development and Practice.
Some competencies may pertain to more than one domain. These
domains represent practice areas that define activities of a genetic
counselor. The examples below each competency illustrate more specific
outcomes that would exemplify achievement of the competency. Practice-
Based Competencies for Genetic Counselors (ACGC, 2013)

Domain I: Genetics Expertise and Analysis

1. Demonstrate and utilize a depth and breadth of understanding and
knowledge of genetics and genomics core concepts and principles.
2. Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote client well-being.
3. Construct relevant, targeted and comprehensive personal and family histories and pedigrees.
4. Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice.
5. Assess individuals’ and their relatives’ probability of conditions with a genetic component or carrier status based on their pedigree, test result(s), and other pertinent information.
6. Demonstrate the skills necessary to successfully manage a genetic counseling case.
7. Critically assess genetic/genomic, medical and social science literature and information.

Domain II: Interpersonal, Psychosocial and Counseling Skills

1. Establish a mutually agreed upon genetic counseling agenda with the client.
2. Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns.
3. Use a range of genetic counseling skills and models to facilitate informed decision-making and adaptation to genetic risks or conditions.
4. Promote client-centered, informed, non-coercive and value-based decisionmaking.
5. Understand how to adapt genetic counseling skills for varied service delivery models.
6. Apply genetic counseling skills in a culturally responsive and respectful manner to all clients.

Domain III: Education

1. Effectively educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter
2. Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds.
3. Effectively give a presentation on genetics, genomics and genetic counseling issues.

Domain IV: Professional Development & Practice

1. Act in accordance with the ethical, legal and philosophical principles and values of the genetic counseling profession and the policies of one's institution or organization.
2. Demonstrate understanding of the research process.
3. Advocate for individuals, families, communities and the genetic counseling profession.
5. Understand the methods, roles and responsibilities of the process of clinical supervision of trainees.
6. Establish and maintain professional interdisciplinary relationships in both team and one-on-one settings and recognize one's role in the larger healthcare system.

Courses

GENC 6101 - Psychosocial Aspects of Genetic Counseling 1 (2 Credits)
This is the first course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal, pediatric and adult clinical settings. Coreq: GENC 6105, GENC 6110. Restrictions: Matriculated students in Genetic Counseling MS Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6102 - Psychosocial Aspects of Genetic Counseling II (2 Credits)
This is the second course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal pediatric and adult clinical settings. Prereq: GENC 6101. Co-Req: GENC 6105, GENC 6110. Restrictions: matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6105 - Basic Interviewing Skills (1 Credit)
This course covers fundamental theories and principles of effective patient/client interviewing in genetic counseling practice. Lectures are combined with hands-on role plays and interviews so that students may gain applied experience and receive feedback to foster skills development throughout course. Coreq: GENC 6101, GENC 6110.
Restriction: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6110 - Topics in Medical Genetics I (3 Credits)
First course in a two-part course sequence regarding principles of clinical genetics and genetic counseling and development of clinical skills used in various medical genetics settings. Fall semester focuses on principles important in pediatric and general genetics settings.
Restriction: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6111 - Topics in Medical Genetics II (2 Credits)
Second course in two-course sequence regarding principles of clinical genetics and genetic counseling used in various medical genetics settings, and development of critical skills. Spring semester focuses on prenatal and adult genetics clinic settings. Prereq: GENC 6110.
Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6120 - Clinical Cytogenetics and Molecular Genetics (3 Credits)
This course provides integrated instruction regarding human cytogenetic and molecular genetic principles, techniques, and diagnostic testing approaches used in clinical evaluation and risk assessment for genetic disorders/predispositions in prenatal and postnatal patient populations. Coreq: GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.
GENC 6121 - Laboratory in Clinical Cytogenetics and Molecular Genetics (2 Credits)
Course provides introduction to specific methodologies and interpretation of studies used in diagnostic cytogenetics and molecular genetics laboratories. Principles discussed in the co-requisite clinical cytogenetics and molecular genetics course will be applied through demonstrations, hands-on experiments, discussion of illustrative cases. Coreq: GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6122 - Seminar in Clinical Cytogenetics and Molecular Genetics (1 Credit)
Course requires students to apply theories/principles of cytogenetics and molecular genetics to analysis of cases that present in daily operations of diagnostic laboratories and formal critique of current research literature. Additionally, students present formal seminar integrating cytogenetic/molecular genetic principles. Prereq: GENC 6120, GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6130 - Cancer Genetics and Genetic Counseling (2 Credits)
Course in providing genetic counseling services to clients with or at risk for hereditary cancer predisposition. Topics include clinical oncology, epidemiology, molecular biology of cancer, risk assessment, genetic testing, ethical/legal issues, clinical research considerations, psychosocial impact/support, specific genetic counseling approaches. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6140 - Human Inborn Errors of Metabolism (2 Credits)
Course provides systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to understanding these disorders will be reviewed. Psychosocial impact of metabolic disorders and genetic counseling approaches will be discussed. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6150 - Congenital Malformations and Disorders of the Newborn (1 Credit)
This survey course covers common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management and etiology are addressed. Psychosocial impact of these conditions and genetic counseling approaches will be discussed. Prereq: GENC 6110. Co-Req: GENC 6111. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6170 - Introduction to Clinical Research for Genetic Counseling Students (1 Credit)
An introduction to clinical research including an overview of ethical principles, study methods and designs, practical execution, data analysis and presentation of results. Possible roles of a genetic counselor in the conduct of clinical research will be a course focus. Restrictions: Matriculated student in MS Genetic Counseling Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6201 - Advanced Psychosocial Genetic Counseling (2 Credits)
This course examines advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics and the client/counselor dynamic. Critical discussion of core topics and readings and case analysis will be used for instruction. Prereq: GENC 6101 and GENC 6102. Restrictions: Matriculated second year student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6210 - Professional Issues in Genetic Counseling I (2 Credits)
First course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Fall semester course focuses on professional standards, professional ethics, legal principles and health systems and policy issues relevant to genetic counselors. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Second year student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6211 - Professional Issues in Genetic Counseling II (2 Credits)
Second course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Spring semester course focuses on disability issues, cultural competency, public health genetics, research methods in genetic counseling, and professional roles. Prereq: GENC 6210. Restrictions: Second year student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

GENC 6250 - Risk Calculation in Genetic Counseling (1 Credit)
This course covers pedigree analysis and risk calculation principles used by genetic counselors in clinical practice. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

GENC 6910 - Applied General Genetics Clinic (3 Credits)
This is a clinical rotation for Genetic Counseling M.S. students through a general genetics clinic serving a variety of referral indications. Students will learn and practice case management, history taking, risk assessment, counseling and client advocacy skills. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated in Genetic Counseling M.S. Program.
Grading Basis: Letter Grade with IP
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.
GENC 6911 - Applied Prenatal Genetics Clinic (3 Credits)
This is a clinical rotation for genetic counseling students through a prenatal diagnosis and genetics clinic. Students will learn/practice history taking, risk assessment, patient education and genetic counseling, case management, as well as observe prenatal diagnosis procedures. Prerequisites: GENC 6101, GENC 6105, GENC 6110. Restriction: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6912 - Applied Metabolic Genetics Clinic (3 Credits)
This is a clinical rotation for genetic counseling students through a genetics clinic for inborn errors of metabolism. Students will work with patients referred for diagnostic evaluation, medical/nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6913 - Applied Regional & Specialties Genetics Clinics (1-2 Credits)
This is a clinical rotation for genetic counseling students through regional outreach (telehealth) genetics clinics and specialty/multidisciplinary clinics serving patients with various genetic conditions. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP Repeatable. Max Credits: 2. A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6914 - Applied Hereditary Cancer Clinic (1 Credit)
This is a clinical rotation for genetic counseling students through adult and pediatric hereditary cancer clinics for individuals seeking genetic counseling and testing for genetic cancer predisposition syndromes. Section 01 - Adult I, Section 02 - Adult II, Section 05 - Pediatric. Program. Prereq: GENC 6105, GENC 6110, GENC 6210, GENC 6130 Grading Basis: Letter Grade with IP Repeatable. Max Credits: 3. A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6915 - Applied Adult Medical Genetics Clinic (1 Credit)
This is a clinical rotation for genetic counseling students through a medical genetics clinic and clinical research settings providing diagnosis, management, risk assessment and genetic counseling for adults. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade with IP A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6919 - Applied Medical Genetics Clinic - Clinical Elective (1-3 Credits)
This is an elective clinical rotation for genetic counseling students desiring to arrange training in outside of core required clinical rotations or an additional, advanced rotation. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program. Grading Basis: Letter Grade Repeatable. Max Credits: 9. A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6920 - Applied Medical Genetics-Laboratory Genetic Counseling Elective (1 Credit)
An elective rotation for students desiring an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory. Restrictions: Matriculated student in GENC program who has completed required prerequisite courses listed; Permission of instructor. Prereq: GENC 6120; GENC 6121; GENC 6122. Grading Basis: Letter Grade A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

GENC 6940 - Capstone in Genetic Counseling (1 Credit)
Students will develop a proposal and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling. GENC matriculated student with 2 semesters required coursework completed. Permission of instructor. Grading Basis: Letter Grade with IP Repeatable. Max Credits: 3. A-GRAD Restricted to graduate students only. Typically Offered: Fall, Spring, Summer.

Policies
Admissions Match Process: The M.S. Genetic Counseling Program participates in the Genetic Counseling Admissions Match through National Matching Services (NMS) (https://natmatch.com/gcadmissions/). All student positions will be filled via the Match. All applicants must first register for the Match with NMS before applying to the genetic counseling program. At the conclusion of program interviews, all interviewed applicants and all programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to applicants and programs simultaneously. Please refer to the Admissions page for more details.

Graduate School Policies: Please visit the Graduate School (https://graduateschool.cuanschutz.edu/) to view policies for prospective and current graduate students.

Contact Us
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Program Director
Carol.Walton@cuanschutz.edu

Program Administrator, Genetic Counseling
graduate.school@cuanschutz.edu

Genetic Counseling Program website: cuanschutz.edu/graduate-programs/genetic-counseling/home (https://www.cuanschutz.edu/graduate-programs/genetic-counseling/home/)