



Genetic Counseling Program

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

Welcome

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 provides comprehensive master's level training that addresses the complex individual, family and societal impact of advances in human genomics. Students 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 care choices and wellbeing.

The graduate program was founded in 1971. Our alumni practice throughout the U.S. and Canada in all specialties of genetic counseling. Typical employment settings include hospitals, academic and private genetics centers, clinical research programs, diagnostic laboratories, biotechnology companies and public health departments.

The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC). The program's philosophy is to provide in-depth classroom education in the scientific and psychosocial aspects of human genetic conditions concurrently with early, hands-on clinical experiences, combining theory with practice throughout the 5-semester, 21-month curriculum. Students gain experience in laboratory settings and with scholarly research activities. They may arrange other individualized experiences to meet their professional interests and career goals.

If you are committed to high standards of academic performance and patient care, and the challenges of personal and professional growth in this expanding field, we look forward to your application!

Carol Walton, M.S., C.G.C.
Director, Graduate Program in Genetic Counseling

Genetic Counseling

Genetic counselors work in clinical, laboratory, teaching, administrative, commercial, government, research and consulting environments. As members of health care teams, they provide information and support to individuals and families affected with or at risk for genetic conditions or genetic predispositions to

diseases such as cancer. They investigate the traits present in the family, interpret information about these conditions, assess inheritance patterns and risks of occurrence and/or recurrence, review testing and management options, provide supportive counseling, identify community and support group resources, and act as patient advocates. They may serve as professional liaisons for laboratories to ensure that health care providers order and interpret genetic tests appropriately. They serve as educators and resources for other health care professionals and the general public. Genetic counselors facilitate support groups, participate in health care policy development, and conduct research. Genetic counselors are in very high demand as genetic/genomic testing options and their applications to personalized medicine continually expand. *For more information, visit www.NSGC.org*

Important – Application Deadline & Match Process:

All student positions will be filled via the 2020 Genetic Counseling Admissions Match through National Matching Services (NMS). **To be considered for the incoming 2020 class, an applicant must complete both steps:**

- 1) **Register for the 2020 Genetic Counseling Admissions Match** – Your program application will not be considered if you have not first registered with National Matching Services (NMS). Provide your NMS identification number where indicated on your application. You must register with NMS even if you only apply to this program. Additional match information is on page 4. Register via the NMS website: <https://natmatch.com/gcadmissions>
- 2) **Apply to the Program by 1/1/20** - All applications must be submitted via the Online Application Website at: <http://www.ucdenver.edu/academics/colleges/Graduate-School/prospective/Pages/apply.aspx>

Questions? Kenton Owsley, Program Administrator
E-mail: Kenton.Owsley@cuanschutz.edu
Telephone: (303) 724-3468 (direct)

Mailing address for application supporting materials:
Attn: Graduate School
University of Colorado Denver Campus
Campus Box 163
PO Box 173364
Denver, CO 80217-3364

Genetic Counseling Program web site:
<http://www.ucdenver.edu/academics/colleges/Graduate-School/academic-programs/genetic-counseling/Pages/default.aspx>

CU Anschutz Graduate School web site:
<http://www.ucdenver.edu/academics/colleges/Graduate-School/Pages/default.aspx>

ADMISSION REQUIREMENTS

Applicants to the Graduate Program in Genetic Counseling must meet admission requirements of both the Graduate School and the Genetic Counseling Program. These are detailed below and on the next page.

Admission 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:

<http://www.ucdenver.edu/academics/colleges/Graduate-School/prospective/Pages/apply.aspx>

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 our 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 is also acceptable; please email electronic transcripts to Kenton.Owsley@cuanschutz.edu .

If the applicant has completed a study abroad program, transcripts from the host institution overseas should also be requested, even if courses are reported on the main undergraduate transcript.

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.***

Additional Genetic Counseling Program Admission Requirements

1) Prerequisite Courses:

- **General/Introductory Biology** (a full year freshman level course sequence)
- **General/Inorganic Chemistry** (full year freshmen level course sequence)
- **General Biochemistry** (comprehensive upper level course) – This may either be fulfilled by completion of both semesters of a full year course sequence (e.g. Biochemistry I and Biochemistry II) *or* by completion of a comprehensive/accelerated one semester upper level biochemistry course. Completion of just the first semester of a full year course sequence does not fulfill the prerequisite. Organic Chemistry is strongly recommended and is a prerequisite for upper level Biochemistry at most schools. A combined one semester Organic/Biochemistry course will not provide sufficient preparation and does not satisfy this prerequisite.
- **General Genetics** (upper level course including fundamentals of genetics of prokaryotes and eukaryotes, Mendelian principles, molecular genetics principles, gene expression, recombinant DNA technology, population & quantitative genetics, laboratory techniques). Completion of an accompanying genetics laboratory component is strongly recommended if not already integrated into the core course. Please note that an upper division “Human Genetics” or “Molecular Genetics” course does not fulfill this prerequisite on its own, though such higher level courses are encouraged as useful supplements to the prerequisite general genetics course for students seeking a strong genetics background as a basis for graduate studies in genetic counseling.
- **General/Introductory Psychology** is the prerequisite course. Students seeking to enhance their preparation may find various upper division psychology and introductory counseling courses beneficial following completion of the prerequisite.

Prerequisite courses must be completed or in progress at the time of application to the program. Final grades received in fall term courses should be included in the application and an updated transcript sent as soon as final fall course grades are posted. If any courses will be taken during spring term, please submit a current transcript verifying enrollment in the course(s) or a proof of enrollment letter from the school’s registrar.

Prerequisites cannot be waived, taken during the summer term immediately prior to starting the program, or taken concurrently during enrollment in the genetic counseling program.

Also highly recommended: Introductory Statistics, Anatomy & Physiology, Molecular/Cellular Biology.

- ### 2) Official Graduate Record Examination scores from the **General GRE Exam** taken within 5 years of the application, and sent directly from ETS (scores older than 5 years are no longer available from ETS; check the ETS site regarding the date of expiration of your scores and be sure to submit these before this date).
- The General GRE exam format changes periodically. Scores will be accepted from the current or previous versions of the GRE administered within 5 years of application. Section sub-scores must each be at the 50th percentile or greater. If scores from multiple attempts of the GRE are submitted, the scores from the most recent exam taken will be considered the official set of scores by the graduate school/program. Visit <http://www.ets.org/gre> for more information about the GRE exam.
 - A GRE subject exam is not required.
 - We do not recommend that you wait until December to take the GRE as it can take up to 6 weeks for schools to receive your official scores from ETS. We will not review your application without GRE scores. *It is helpful if you can include a photocopy/scan of your student score report with your application to expedite the initial review process, especially if you sit for the GRE in November or December.* However, photocopies will not be accepted in lieu of official scores issued to us directly by ETS by January 1.
 - **NOTE: The University of Colorado has four campuses. Be sure to send GRE score reports to the University of Colorado Denver GRE code #4875 (no department code necessary)**
- ### 3) Experience in counseling/advocacy and laboratory settings, and a strong understanding of the genetic counseling field, are highly recommended if one wishes to be considered a competitive applicant.
- Examples of relevant experiences in counseling and client advocacy include volunteer or paid positions with: Planned Parenthood or similar healthcare agency, crisis hotlines, group homes for individuals with developmental or behavioral disabilities, peer/community counseling centers, hospice programs, clinics or research programs working directly with patients or clinical research subjects. Technician work in genetics laboratories, or TA positions in biology, genetics or other relevant courses, are also desirable experiences.
 - Applicants must demonstrate a clear understanding of the genetic counseling field and their personal goals and motivation for pursuing a career in genetic counseling. Successful applicants have typically spoken to and/or met with genetic counselors to learn directly about the career field, and many have job shadowed, interned with or otherwise participated in activities (such as case conferences) of a genetic counseling/clinical genetics center during their process of career exploration. A directory of genetic counselors willing to talk to individuals considering the career is available at www.NSGC.org.

CANDIDATE SELECTION AND INTERVIEWS:

Admission to the genetic counseling program is highly competitive. Currently, the program admits six new students per year. Admitted candidates generally have qualifications exceeding the minimum standards indicated. Thus, meeting the minimum standards does not guarantee an interview or an offer of admission to the program.

An on-campus interview is required. All interviews are by invitation only, regardless of your proximity to the Denver/Aurora metro area. The Admissions Committee will make its initial selections based on review of the applicants' files. Selected applicants will be invited to interview on campus on specific dates in February - March.

Genetic Counseling Admissions Match: The M.S. Genetic Counseling Program is participating in the Genetic Counseling Admissions Match through National Matching Services (NMS). All student positions will be filled via the Match. 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 to participating genetic counseling graduate programs. 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 on **April 24, 2020**.

Please visit the NMS website at (<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.

The program only admits students once each year for full-time study, with a new student cohort beginning training in late August each year. Due to the sequencing of the didactic and clinical components of the training, part-time, evening and distance/online curriculum delivery are not available. You should apply for the year that you anticipate being able to actually begin your graduate studies, as deferred admissions are not offered. Similar to medical school and other intensive graduate and health professional programs, students in the M.S. Genetic Counseling program should consider their graduate studies as their priority during the 21-month program.

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE:



The genetic counseling program requires a minimum of 47 core semester hours for completion of the degree (subject to change without notice). Students must earn at least a B minus grade in all required courses; course grades below B minus cannot be applied toward the graduate degree.

M.S. Genetic Counseling students complete degree Plan II of the Graduate School. This is a non-thesis degree plan with a required scholarly Capstone Project. It requires successful completion of a *minimum of 44 core course/clinical rotation credits plus 3 semester credits of capstone work.* Students must complete a Capstone scholarly project as well as pass a two-part comprehensive examination in year two of the program. The comprehensive examination consists of a written examination followed by an oral examination that is case-based and requires application of knowledge from courses and clinical rotations.

Students may take additional, elective courses, but electives are not required, since the program's core credit requirements exceed the minimum degree requirements of the Graduate School for award of the M.S. degree. Most students are able to successfully complete the requirements of the program during the typical 21-month, 5-semester (including summer) plan of full time study. Registration for additional semester(s) in residency may be required to complete program requirements if a student in otherwise good academic standing does not make expected progress toward completion of the Capstone requirement.

CURRICULUM

Coursework during years one and two includes instruction in the principles of human/clinical genetics and genomics, cytogenetics, molecular genetics, biochemical/metabolic genetics, cancer genetics, risk calculation; psychosocial, interviewing and counseling theories and techniques; and ethical, legal, social and professional issues in genetic counseling practice.

Laboratory Experience is obtained via an integrated cytogenetics and molecular genetics laboratory course taken in year one of the program. Additional laboratory experiences can be arranged for the interested student.

Required Clinical Rotations include Pediatric General Genetics Clinic, Prenatal Diagnosis Clinic, Adult and Pediatric Hereditary Cancer Clinic, Metabolic Clinic, Regional Telemedicine and Specialty/Multidisciplinary Clinics, and Adult Medical Genetics Clinic. Students assume responsibility, under the supervision of their clinical supervisors in each setting, for appropriate care of all clients to whom they are assigned. Case activities include pre-clinic case preparation and literature review, obtaining intake histories and family histories (pedigrees), participating in dysmorphology examinations, conducting risk assessment and provision of genetic counseling regarding diagnosis, genetics, testing options, informed consent, test results, psychosocial impact and adjustment, and support needs and resources. Students gain extensive experience in identifying and arranging appropriate genetic testing, and in results interpretation and disclosure. Students present cases for discussion at case conferences, conduct post-clinic follow-up regarding testing and results, complete medical documentation in electronic medical records systems, and write correspondence to patients/families and their medical providers. Interested students may arrange a clinical rotation outside of Colorado during the summer semester between years 1 and 2 if an appropriate host center can be identified and the student's planned involvement meets ACGC training requirements and legal requirements of the university and host institution.

The **Capstone Project** is undertaken during the summer and in year 2 of the program as an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling.

Additional activities: Required activities include participation in case conferences, maternal/fetal medicine and ultrasound conferences, oncology tumor board meetings, Genetics Grand Rounds, Genetic Counseling Journal Club, and educational presentations to secondary school students and lay community groups. Completion of an online clinical embryology course during the first semester of the program is also required.

TUITION

The tuition rates for the 2019-20 academic year are \$678 per semester credit hour for Colorado residents and \$1286 per semester credit hour for non-Colorado-residents. Genetic counseling students take a minimum of 25 semester hours during their first year (including summer) and the balance during their second year. Most non-Colorado-resident U.S. students may receive in-state tuition rates in their second year if they establish Colorado residency following their first year of graduate school. Guidelines for determination of residency are available at: <http://www.ucdenver.edu/anschutz/studentresources/Registrar/StudentServices/Residency/Pages/Residency.aspx>

Further information is available from the CU Anschutz Bursar's Office: <http://www.ucdenver.edu/anschutz/studentresources/StudentBilling/Pages/default.aspx>

FEES

Health Insurance and Student Health Service Fees: Annual premiums for required student health insurance and student health services currently total \$4500 per year (2019-2020 plan year). Though health coverage is mandatory, purchase of the student health insurance plan may be waived with proof of comparable health insurance at the time of enrollment.

Admission Deposit: \$200 from incoming students (refundable once student has matriculated).

FEES (Continued)

Additional fees** include:

- Background check for incoming students - \$65.00
- Matriculation fee for incoming students - \$140.00
- Student Activity/Senate: \$20/year
- Academic Support Services: \$64 per semester
- RTD College Pass: \$37.70 per semester
- International Student fee: \$150.00

**Fee amounts may change at any time without prior notice.

FINANCIAL AID

Although there is no formal monetary support for students in the Genetic Counseling Program, every effort is made to help students find part-time positions on campus, such as in laboratories, clinical, research or office support areas. Some students work part-time off-campus.

The campus Financial Aid Office contacts incoming students upon formal admission to CU Anschutz. If you are applying to the graduate program and anticipate needing Federal student loans, work-study or other aid, the Financial Aid office advises that you file a FAFSA form by April 1 (priority consideration). **The Title IV code for CU-AMC is 004508.**

Questions? Please contact the CU Anschutz Financial Aid Office at 303-724-8039 or visit: <http://www.ucdenver.edu/anschutz/studentresources/FASO/Pages/FASO.aspx>

DENVER and AURORA METROPOLITAN AREA

Picture yourself in [Denver](#). CU Anschutz students enjoy the resources, diversity and beauty of the adjacent cities of Denver and Aurora, at the hub of a six county metropolitan area of over 2 million people along the eastern foothills of the magnificent Rocky Mountains. [Be inspired](#) by all the area can offer. Recreational and cultural activities abound. The metro area has extensive networks of urban and mountain parks perfect for jogging, hiking, biking and water sports. Several major ski and snowboarding areas are just 1-2 hours away. The Denver Performing Arts Center attracts national theater tours and hosts the Denver Symphony Orchestra. The Denver Botanic Gardens, Denver Zoo and several excellent museums are popular diversions. Denver's sports franchises include the Colorado Rockies, Denver Broncos, Colorado Avalanche, Colorado Rapids and Denver Nuggets. Boulder, home to another campus of the University of Colorado, is only 30 miles away and boasts numerous cultural events, CU college athletics, an eclectic downtown area and easy access to mountain parks and trails.



CU ANSCHUTZ MEDICAL CAMPUS

The new state-of-the-art [CU Anschutz Medical Campus \(AMC\)](#) was constructed from the ground up as a modern, integrated academic medical community dedicated to the education of health sciences students in many disciplines, provision of quality patient care across the lifespan, and research in the clinical and basic sciences. Its [mantra](#) -- that the future is ours to create -- resonates throughout the campus. Genetic counseling students enjoy the convenience of attending their classes, laboratories, seminars and many of their clinical rotations in modern educational and medical facilities that are within steps of each other at [AMC](#).



The Genetic Counseling Program is located in Clinical Genetics and Metabolism on the fourth floor of the Education 2 South building at CU Anschutz. The dedicated genetic counseling student office is a hub for studying and clinical work, with networked computers and phones to facilitate communication with patients and the EMR. Clinical Genetics and Metabolism serves thousands of patients each year through a network of genetics and specialty multidisciplinary clinics at Children's Hospital Colorado (CHCO) and at regional outreach and telemedicine clinics. Many of the genetic counselors, clinical and metabolic geneticists, and other program training faculty are based here, encouraging frequent and convenient interaction with the genetic counseling students.

The Education 2 complex contains modern classrooms, dozens of small group study rooms, bright, comfortable student lounge spaces with kitchenettes, a café/coffee shop, and the University Bookstore. Wireless internet is available throughout.



Only two blocks away from Education 2 is the modern and welcoming [Strauss Health Sciences Library](#). 60 computers in the main reference area and wireless internet throughout the building provide students with immediate access to print and electronic resources. Group study, quiet reading rooms and other designated study spaces are plentiful throughout the building.

CHILDREN'S HOSPITAL COLORADO



Adjacent to our offices and classrooms in Education 2 South is the magnificent [Children's Hospital Colorado \(CHCO\)](#), which is consistently ranked as one of the top pediatric hospitals in the nation. CHCO provides cutting edge care in its family-centered inpatient facilities and kid-friendly outpatient clinics. Meet some of the patients and learn [what makes it a better children's hospital](#). Students training here routinely attend grand rounds, case conferences, family conferences and other educational events designed to enhance their experience in clinical rotations. The full service cafeteria, with its spacious outdoor patio, and a coffee bar and ice cream shop in the main lobby are convenient and affordable destinations for meals or a study break. [It's a good life](#) as a trainee with the Children's Hospital Colorado team.

UNIVERSITY OF COLORADO HOSPITAL



University of Colorado Hospital (UCH) is the main academic medical center of University of Colorado Health (UCHealth), a nonprofit health care system that includes five hospitals and dozens of clinics throughout Colorado. *U.S. News and World Report* ranks University of Colorado Hospital (UCH) as the best hospital in Colorado. UCH is located just across from Children's Hospital Colorado at the main entrance to the AMC campus. Genetic counseling students receive training in prenatal genetics, hereditary cancer and adult medical genetics in clinics at UCH.

HOUSING AND TRANSPORTATION

A wide range of rental apartments, condominiums and houses is available in the Denver and Aurora areas. There is a style to fit any preference and price range, from units in historic buildings to single family homes and large, modern apartment complexes with many amenities. Although there is no university-sponsored on-campus housing for students, the AMC [Office of Campus Student Services](#) maintains a housing guide with information about rentals in the vicinity. There are some private apartment complexes on the north and south sides of AMC campus within a 5 minute walk of the classroom buildings and many others in neighborhoods within walking or biking distance of campus. Many other nice rental options are within about a 15 minute drive or bus ride to campus. A roommate matching service is also available.



Anschutz Medical Campus is a stop on light rail RTD "R" line and on several RTD bus lines serving the metro area, including Boulder. Students receive the RTD EcoPass as part of their student fees each semester. The campus has convenient highway access and daily or monthly parking permits can be purchased. Denver International Airport (DIA) is an easy 20 minute drive or light rail ride from the campus.



DESCRIPTIONS OF COURSES:

GENC 6101/6102 Psychosocial Aspects of Genetic Counseling I & II A two semester course 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. The first semester focuses on human and family development, pregnancy and perinatal loss, and grief theory. The second semester focuses on family systems, crisis theory and intervention, grief and coping responses, and integration of psychosocial approaches into genetic counseling practice.

GENC 6105 Basic Interviewing Skills A course covering the 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.

GENC 6110/6111 Topics in Medical Genetics I & II A two semester course sequence regarding principles of clinical genetics and genetic counseling, and development of knowledge and clinical skills used in pediatric, prenatal and adult clinical settings.

GENC 6120 Clinical Cytogenetics and Molecular Genetics A lecture course providing 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.

GENC 6121 Laboratory in Clinical Cytogenetics and Molecular Genetics A laboratory course providing an 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 activities, and discussion of illustrative cases.

GENC 6122 Seminar in Clinical Cytogenetics and Molecular Genetics This third course in the cytogenetics/ molecular course sequence requires students to apply theories and principles of cytogenetics and molecular genetics to analysis of cases that present in the daily operations of diagnostic laboratories and to formal critique of current research literature. Additionally, students present a formal seminar integrating cytogenetic and molecular genetic principles.

GENC 6130 Cancer Genetics and Genetic Counseling A course in the provision of 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 considerations, psychosocial impact and support, and specific approaches used in cancer genetic counseling.

GENC 6140 Human Inborn Errors of Metabolism A course providing systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to the understanding of these disorders are reviewed, and the psychosocial impact of metabolic disorders and specific genetic counseling approaches will be discussed.

GENC 6150 Congenital Malformations and Disorders of the Newborn A survey course covering common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management, etiology, psychosocial impact and specific genetic counseling approaches are discussed.

GENC 6170 Introduction to Clinical Research for Genetic Counseling Students A course covering key methods, study design, ethics, regulatory issues, and research roles in genetic counseling are explored.

GENC 6201 Advanced Psychosocial Genetic Counseling A course examining advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics, and the client/counselor dynamic, via critical discussion of core topics and readings, and application of theories to analysis of students' cases.

GENC 6210/6211 Professional Issues in Genetic Counseling I & II A two semester 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. The spring semester course focuses on disability issues, cultural competency, public health genetics, and the expanding professional roles.

GENC 6250 Risk Calculation in Genetic Counseling A practical course covering pedigree analysis, population genetics, clinical epidemiology and risk calculation principles used by genetic counselors in clinical practice.

GENC 6940 Capstone in Genetic Counseling Students design and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling.

DESCRIPTIONS OF COURSES (CONTINUED):

GENC 6910 Applied General Genetics Clinic A required clinical rotation through a general genetics clinic serving a variety of referral indications. Students learn and practice case management, history taking, risk assessment, counseling, and client advocacy skills.

GENC 6911 Applied Prenatal Genetics Clinic A required clinical rotation through prenatal diagnosis and genetics clinics serving patients with routine and high-risk referral indications. Students learn and practice history taking, risk assessment, patient education and genetic counseling regarding prenatal screening, fetal diagnostic testing, and case management, as well as attend procedures, seminars, and care conferences.



GENC 6912 Applied Metabolic Genetics Clinic A required clinical rotation through our comprehensive clinic for inborn errors of metabolism. Students will work with patients of all ages referred for diagnostic evaluation, medical and nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results.

GENC 6913 Applied Regional Telemedicine & Specialties Genetics Clinics A required clinical rotation through regional outreach telemedicine genetics clinics and specialty/multidisciplinary clinics for various genetic conditions.

GENC 6914 Applied Hereditary Cancer Clinic A required clinical rotation for genetic counseling students through Adult Hereditary Cancer and Pediatric Oncology clinics where risk assessment, genetic counseling and testing for genetic cancer predisposition syndromes are provided.

GENC 6915 Applied Adult Medical Genetics Clinic A required clinical rotation for genetic counseling students through a medical genetics clinic providing diagnosis, management, risk assessment and genetic counseling for adults affected with or at risk for genetic disorders and genetic predispositions to disease.

GENC 6919 Applied Medical Genetics Clinic – Clinical Elective An elective clinical rotation for students desiring to arrange training in settings outside of core required clinical rotations or an additional, advanced rotation.

GENC 6920 Applied Medical Genetics – Laboratory Elective An elective rotation for students desiring to arrange an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory.

Curriculum Overview by Semester (subject to change without notice):

Year 1 Fall Semester	Year 1 Spring Semester	Year 1 Summer Semester	Year 2 Fall Semester	Year 2 Spring Semester
Coursework: GENC 6101, 6105, 6110, 6120, 6121, 6170 Online clinical embryology	Coursework: GENC 6102, 6111, 6122, 6130, 6140 or 6150 (alternate years)	Coursework: GENC 6940	Coursework: GENC 6201, 6210, 6250, 6940	Coursework: GENC 6211, 6140 or 6150 (alternate years), 6940
Clinical Training: Clinical observations EPIC EMR training “Hands on” clinical practice	Clinical Training: “Hands on” clinical practice Formal Clinical Rotations (sequence varies by student)	Clinical Training: Formal Clinical Rotations (sequence varies by student)	Clinical Training: Formal Clinical Rotations (sequence varies by student)	Clinical Training: Formal Clinical Rotations (sequence varies by student)
Other required activities: Weekly departmental education meetings and case conferences. Monthly GC Journal Club.	Other required activities: Weekly departmental education meetings and case conferences. Monthly GC Journal Club.	Other required activities: Weekly departmental education meetings and case conferences.	Other required activities: Weekly departmental education meetings and case conferences. Monthly GC Journal Club.	Other required activities: Weekly departmental education meetings and case conferences. Monthly GC Journal Club.
Required Clinicals (<i>all students start Spring of year 1 and continue through Spring of year 2</i>): GENC 6910 Pediatric General Genetics GENC 6911 Prenatal Genetics GENC 6912 Metabolic Genetics GENC 6913 Regional Telemedicine/Specialty Clinics GENC 6914 Hereditary Cancer GENC 6915 Adult Medical Genetics				Comprehensive M.S. Exams (written and oral); Capstone Project Completion (submission of formal paper and oral presentation to campus genetics community).

CORE CLINICAL TRAINING SITES:

University of Colorado Hospital and Anschutz Centers for Advanced Medicine:

- Adult Medical Genetics Clinic
- Adult Hereditary Cancer Clinic
- Prenatal Diagnosis and Genetics

Kaiser Permanente of Colorado

- Prenatal Diagnosis and Genetics

St. Joseph's Hospital

- Prenatal Diagnosis and Genetics

and other Denver area training partners

Children's Hospital Colorado:

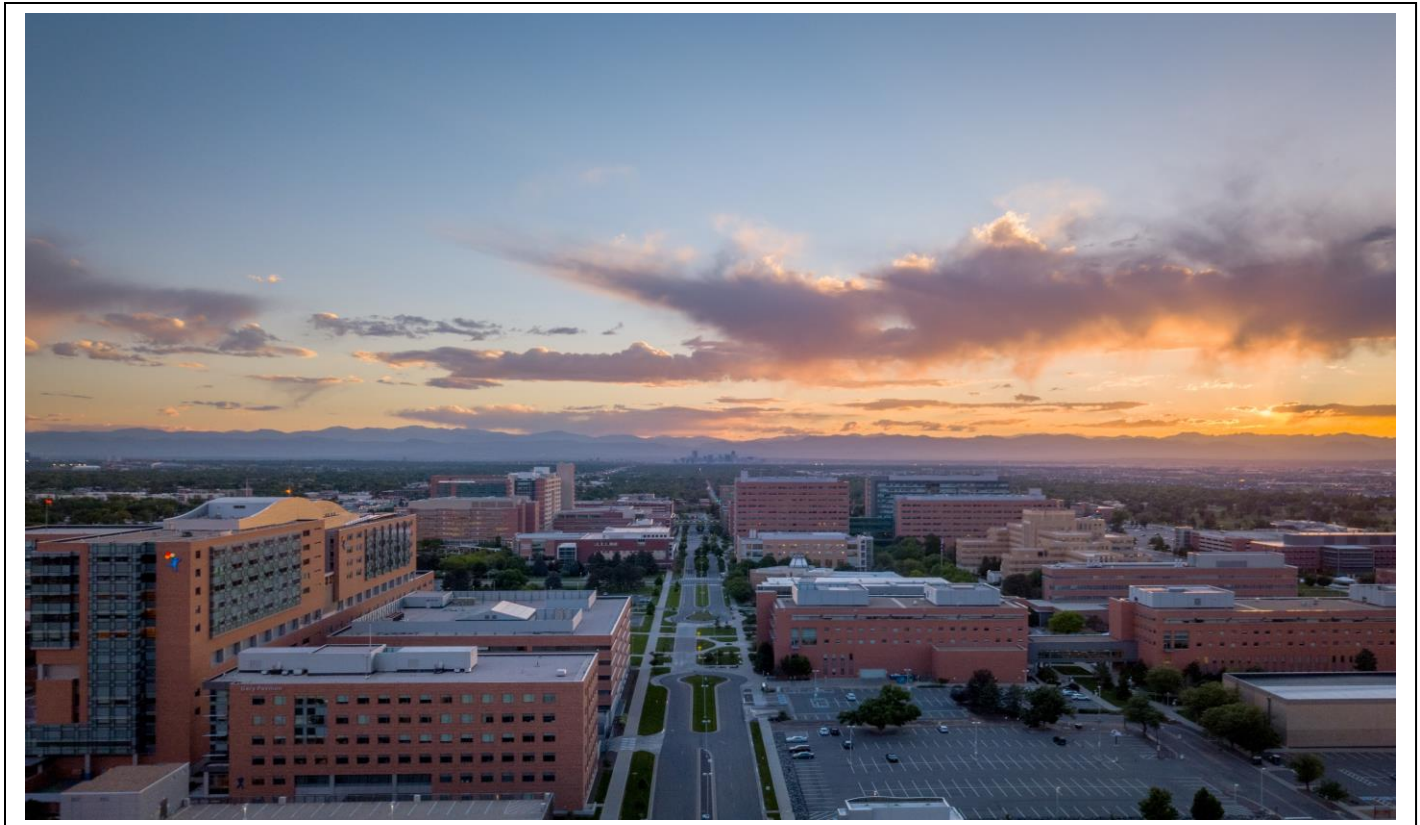
Division of Clinical Genetics and Metabolism:

- General Genetics Clinic
- Genetic Counseling Clinic
- Positive Results Clinic
- Inherited Metabolic Disorders Clinic
- Neurocutaneous Clinic
- Skeletal Dysplasia Clinic
- Craniofacial Clinic
- Pediatric Cardiology Clinic
- Autism Genetics Clinic
- Neuromuscular Disorders & Carrier Clinics
- Ophthalmologic Genetics Clinic
- 22q11.2 Deletion Clinic
- SOAR (Differences of Sex Development) Clinic
- Regional Telemedicine Clinic
- Inpatient Genetics Consults

Hematology and Oncology:

- Pediatric Oncology Clinic
- Sickle Cell/Hemoglobinopathy Clinic

Colorado Fetal Care Center



GENETIC COUNSELING PROGRAM TEACHING & CLINICAL FACULTY

Program Director:

Carol Walton, M.S., C.G.C.

Assistant Director, Clinical Training:

Kathleen Brown, M.S., C.G.C.

Medical Director:

Peter Baker II, M.D.

Faculty Genetic Counselors, Clinical Supervisors, and Course Lecturers:

- Kaitlin Angione, M.S., C.G.C.
- Lisen Axell, M.S., C.G.C.
- Gessi Bentz-Pino, M.S., C.G.C.
- Audrey Brown, MS, CGC
- Curtis Coughlin II, M.S., M.Be., C.G.C.
- Hannah Elfman, MS, CGC
- Emily Fields, M.S., C.G.C.
- Jenna Fox, M.S., C.G.C.
- Cynthia Freehauf, R.N., M.S., C.G.C.
- Wendy Garlitz, M.S., C.G.C.
- Melissa Gibbons, M.S., C.G.C.
- Katherine Hornberger, M.S., C.G.C.
- Katherine Howard, M.S., C.G.C.
- Susan Howell, M.S., M.B.A., C.G.C.
- Sarah Hunt, MS, CGC
- Jean Jirikowic, M.S., C.G.C.
- Janell Kierstein, M.S., C.G.C.
- Lisa Ku, M.S., C.G.C.
- Susan Larabell, M.S., C.G.C.
- Sandy Linn, R.N., M.S., C.G.C.
- Leslie McCallen, M.S., C.G.C.
- Kestutis Micke, MS, CGC
- Kelly Nori, M.S., C.G.C.
- Michele Rapp, M.S., C.G.C.
- Leah Rhodes, M.S., C.G.C.
- Jonathan Saari, M.S., C.G.C.
- Kami Schneider, M.S., C.G.C.
- Valerie Slegesky, MS, CGC
- Michelle Springer, M.S., C.G.C.
- Leighann Sremba, M.S., C.G.C.
- Sarah Stewart, MS, CGC
- Ali Suttman, M.S., C.G.C.
- Shayna Svihovec, M.S., C.G.C.
- Kelli Swan, M.S., M.A., C.G.C.
- Emily Todd, M.S., C.G.C.
- Erica Wright, M.S., C.G.C.
- Danielle Young, M.S., C.G.C.

Psychosocial Curriculum Faculty:

- Carol Heinisch, M.S., M.S.W., L.C.S.W.
- Michael Talamantes, M.S.S.W., L.C.S.W.



Physician Faculty

Clinical Genetics and Metabolism, CHCO:

- Peter Baker II, M.D.
- Austin Larson, M.D.
- Shawn McCandless, M.D.
- Naomi Meeks, M.D.
- Margarita Saenz, M.D.
- Janet Thomas, M.D.
- Johan Van Hove, M.D., Ph.D., M.B.A.

University of Colorado Hospital:

- Matthew Taylor, M.D., Ph.D., Adult Genetics
- Marsha Wheeler, M.D., Prenatal Genetics
- Catherine Klein, M.D., Hereditary Cancer

Denver Health Medical Center

- Lizbeth McCarthy, M.D., Prenatal Genetics

Laboratory Faculty:

Colorado Genetics Laboratory (Clinical Cytogenetics):

- Liming Bao, M.D., Ph.D.
- Mary Haag, Ph.D.
- Karen Swisshelm, Ph.D.
- Meng Su, Ph.D.
- Debbie Hennerich, R.N., M.S., C.G.C.
- Sharon Graw, M.S., C.G.C.
- Billie Carstens, B.S., CISp(CG)

Denver Genetics Laboratory/CHCO (Clinical Molecular and Biochemical Genetics):

- Elaine Spector, Ph.D.
- Kit Kronquist, Ph.D.
- Michael Woontner, Ph.D.

CMOCO Laboratory (Cancer Molecular Diagnostics)

- Kristy Crooks, Ph.D.

**GENERAL INSTRUCTIONS regarding the ONLINE APPLICATION and SUPPORTING MATERIALS
(For all DOMESTIC and INTERNATIONAL APPLICANTS)**

Please use the on-line application site at

<http://www.ucdenver.edu/academics/colleges/Graduate-School/prospective/Pages/apply.aspx>

to begin your application process. Carefully read all instructions in this brochure and on the on-line application site as you complete the various sections of the application. You will automatically be provided with links directing you to the online recommendation system and instructions for downloading any supplementary forms.

Please remember that you may save and re-enter the on-line application site at any time using your password, and that you do not need complete your online application all in one sitting.

APPLICATION CHECKLIST for DOMESTIC APPLICANTS:
(International Applicants please see next page)



REMEMBER – You must register with NMS for the Match prior to submitting your application to the program.

Your application to the Program will not be considered if you have not first registered for the Match via the NMS website by our 1/1/2020 application deadline: <https://natmatch.com/gcadmissions>

A complete Domestic application must include the following items:

Application form (submitted online):

- Online Application form:** Includes NMS Match Number, Demographics and Contact Information, Institutions Attended, Courses in Progress, Test Scores, Names of 4 references and several list and essay questions addressing your past achievements, experience relevant to your proposed study in the field of genetic counseling, and future plans for graduate study and a professional career in genetic counseling. Please answer each of these questions thoughtfully and completely. Do not substitute a previously prepared standard “personal statement” document in place of these individual essay questions, as each is asking you for somewhat different information. Together, your responses to all of these questions constitute your “personal statement” to the Admissions Committee. You will be asked to attach files in one of several acceptable file formats containing your essay style responses to these questions. You may also attach a file containing your CV or resume, if you desire, though the CV should not replace responses to these essay questions.

Required Supporting Materials (if submitted via mail, use the address on page 1 of this brochure)

- 4 letters of recommendation, submitted via the online recommendation system**
- One official sealed copy of your transcript sent directly (via mail or electronically) from every college/university you attended, even if you only took one class there.**
- Official GRE General Test score report.** This must be requested directly from ETS and sent to University of Colorado Denver campus (institution code #4875 U of CO Denver; no department code necessary). *To expedite preliminary review of your application, please include a photocopy/scan of the unofficial GRE score report you received after taking the test.* However, this will not be accepted in lieu of the official report for final review and decisions regarding your application. Scores from exams taken more than 5 years ago and no longer available directly from ETS will not be accepted; you must re-take the GRE exam in this case. Applicants with prior graduate degrees (master’s and/or doctoral) must still submit General GRE scores.
- Check or money order for \$50.00 in U.S. funds** made out to the University of Colorado. Your online application will not be considered active until payment is received (postmark deadline January 1, 2019). **Online Credit Card payment** via the online application site is also available and is strongly encouraged for fastest payment of your application fee and activation of your application.

Incomplete applications may not be considered. Please do not submit videotapes, manuscripts, or other supplementary items not requested by the application, as these will not be reviewed by the Admissions Committee and cannot be returned to you.

APPLICATION INSTRUCTIONS AND CHECKLIST for INTERNATIONAL APPLICANTS:

Applicants who do not have United States citizenship or permanent resident visa status, including those who are currently in the U.S. on any type of temporary visa, are required to apply as International Applicants. Most of the application materials are the same as described for Domestic Applicants (previous page). In addition, you must:

- **Submit official TOEFL scores** if your native language is not English or if you have not earned a degree at an institution where English was the language of instruction. The minimum TOEFL score required for admission is 550 (paper) / 213 (computer)/ 80 (internet) [Please note: 570/230/89 are the preferred competitive minimum scores].
- **Provide adequate proof of financial support** for your course of study at UCD-AMC. Refer to specific guidelines on the “Financial Statement for Foreign Applicants” forms, to which the online application site will direct you.
- **Request one (1) certified copy of official records (transcripts)** to be sent directly from each institution of higher education where you enrolled in courses or earned the bachelor's degree or other post-secondary certificates or degree(s). These records should include courses completed, grades or marks obtained, certificates or degrees awarded, and, if possible, an indication of the student's performance in relation to other members of the class. Transcripts in languages other than English must be accompanied by certified English translations.

International Application Deadline: Materials from international applicants are more extensive and generally require more review regarding eligibility for graduate study at UCD-AMC. **Thus, we strongly advise you to file your application by December 1, 2019**, rather than using the regular January 1, 2020 postmark deadline. Incomplete applications may not be considered.

INTERNATIONAL APPLICANT CHECKLIST

REMEMBER – You must register with NMS for the Match prior to submitting your application to the program.

Your application to the Program will not be considered if you have not first registered for the Match via the NMS website:

<https://natmatch.com/qcadmissions>

A complete International application must include the following items:

Application form (submitted online):

- Online Application form:** Includes your NMS Match Number, Demographics and Contact Information, Institutions Attended, Courses in Progress, Test Scores, Names of 4 references and several list and essay questions addressing your past achievements, past experience relevant to your proposed study in the field of genetic counseling, and future plans for graduate study and a professional career in genetic counseling. Please answer each of these questions thoughtfully and completely. Do not substitute a previously prepared standard “personal statement” document in place of these individual essay questions, as each is asking you for somewhat different information. Together, your responses to all of these questions constitute your personal statement to the Admissions Committee. You will be asked to attach files in one of several acceptable file formats containing your essay style responses to these questions. You may also attach a file containing your CV or resume, if you desire, though this should not replace your responses to these questions.

Required Supporting Materials (if submitted via mail, use the address on page 1 of this brochure)

- 4 letters of recommendation, submitted via the online recommendation system**
- One official sealed copy of your transcript sent directly (electronically or via mail) from every college/university you attended, even if you only took one class there.**
- Official GRE General Test score report** . This must be requested from ETS and sent to University of Colorado Denver Campus (institution code #4875 U of CO Denver; no department code necessary). To expedite preliminary review of your application, please include a photocopy/scan of the unofficial GRE score report you received after taking the test. However, this will not be considered in lieu of the official report. Scores from exams taken more than 5 years ago and no longer available directly from ETS will not be accepted; you must re-take the GRE exam in this case. Applicants with prior graduate degrees (master's and/or doctoral) must still submit General GRE scores.
- Official TOEFL score report** sent directly from ETS to the institution code indicated above.
- Proof of Adequate Financial Support documentation (forms available from online application site)**
- International Application Fee: \$75.00. Submit via online Credit Card payment, Check or Money Order for \$75.00 in U.S. funds made out to the University of Colorado and drawn on a U.S. bank.** Your online application will not be activated for review until payment is received. **Online Credit Card payment** via the online application site is encouraged for fastest payment of your application fee and activation of your application.

REMEMBER – You must also register with NMS for the Match by 1/1/20 – Your application to the Program will not be considered if you have not registered by this date with National Matching Services (NMS). You must register with NMS even if you only apply to this program. Register via the NMS website: <https://natmatch.com/qcadmissions>