GENETIC COUNSELING TRAINING PROGRAM

GRADUATE STUDENT HANDBOOK*

2010 - 2012

*Partial Handbook Materials: Course overviews, thesis guidelines and clinical information would be included in the Handbook which is provided to each student entering the Program (these are found in Appendix VII and VIII. The information presented here is also in the Handbook.
WELCOME TO THE GENETIC COUNSELING TRAINING PROGRAM IN THE DEPARTMENT OF GENETICS AT CASE WESTERN RESERVE UNIVERSITY!

This handbook is designed to provide you with general information about the program with emphasis on the clinical training you will receive. It also contains helpful general information about the Department of Genetics, the Center for Human Genetics and Case Western Reserve University (CWRU). Please feel free to expand and add information to it as you proceed through your program. Let us know if you think of ways this reference can be improved.  **KEEP IT HANDY AS WELL AS YOU WILL USE IT REPEATEDLY OVER THE NEXT TWO YEARS!**  Meanwhile ....................

WE ARE EXCITED THAT YOU ARE HERE AND LOOK FORWARD TO WORKING WITH YOU!!!!!!!!!!!!!!!

“**GENETIC COUNSELING** is the process of helping people understand and adapt to the medical, psychological and familial implications of genetic contributions to disease. This process integrates:

- Interpretation of family and medical histories to assess the chance of disease occurrence or recurrence.
- Education about inheritance, testing, management, prevention, resources and research.
- Counseling to promote informed choices and adaptation to the risk or condition.

*National Society of Genetic Counselors, 2005*

“**GENETIC COUNSELORS** are health professionals with specialized graduate degrees and experience in the areas of medical genetics and counseling who work as members of a health care team in a number of different capacities, providing information and support to families who have members with birth defects or genetic disorders and to families who may be at risk for a variety of inherited conditions…. Genetic counselors serve as educators and resource people for other health care professionals and for the general public.  *Adapted from the National Society of Genetic Counselors, Inc. 1983*

**OVERVIEW**

During the two years you will spend as a graduate student in the Department of Genetics, you will learn the principles of genetic counseling and medical genetics and their application to clinical genetics health care. Ultimately, you will acquire the knowledge and clinical skills to function as a competent and caring genetic counselor in a wide range of settings and roles. The curriculum of the program has been designed to provide you with in-depth knowledge regarding principles of human and medical genetics, the psychosocial impact of genetic disorders, and the research process in genetic counseling. You will obtain basic content through course work and learn to apply the information through clinical rotations and your research project. In addition, you will gain experience through attendance and presentations in conferences, seminars, and journal clubs. All of
these activities will enable the student to meet the clinical competencies as outlined by the American Board of Genetic Counseling (ABGC).

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE (PLAN A)

The Department of Genetics offers a Master of Science degree in Genetics. There are 40 semester hours required for completion of the genetic counseling training program: 22 are didactic courses; 12 are clinical rotations and 6 hours are devoted to thesis research.

Course Requirements
Students MUST receive a grade of B or better throughout the Program. Each course in the Program has specific requirements and evaluation processes. If any one course grade is below a B (C or less constitutes a failing grade), the student will be required to demonstrate his or her mastery of the material (for example, retaking the course and earning at least a B) as decided by Dr. Matthews and the course faculty in order to successfully complete the program. Additionally, each student must demonstrate appropriate development of clinical skills and competencies during rotations. Successful completion of EACH clinical rotation is required. Dr. Matthews will closely monitor student progress. If there is a concern regarding academic performance, Dr. Matthews will work with the student to remedy such difficulties on a case by case basis. Tutoring is available.

Comprehensive Examination
There is a comprehensive examination given in the beginning of spring semester of the second year for all students. There are both written and oral sections to the exam.

Written: The written section is a multiple choice and short answer examination that covers the didactic courses and clinical genetic counseling material covered during the genetic counseling program and is taken by all second year students who have performed satisfactorily in all aspects of the program. Portions of the examination are patterned after the certification examination given by the American Board of Genetic Counseling, but there is no intent to “teach to the board exam”. Oral: The oral section is given shortly after the written examination. This portion of the Comprehensive Exam allows students to expand on their knowledge base of human and medical genetics and genetic counseling. The oral exam committee is composed of the Program Director and two or three additional faculty. Students are given genetic counseling scenarios to discuss, asked general knowledge questions in any area of the curriculum as well as to clarify answers given in the written examination.

Requirements: Students must pass both sections of the examination in order to meet graduation requirements by the Program. Students are expected to pass the written examination at a 70%ile. The student’s oral exam committee comes to a consensus regarding a student’s performance on the oral examination and decides if the student has passed this section of the comprehensive examination.

If a student fails one or both sections of the examination, the examination committee will provide avenues for the student to rectify the deficiency, such as having the student take
another written examination or repeat the oral section. Committee members may also decide that additional course or clinical work is necessary in order to meet the requirements of the Program. If a student is unable to pass the comprehensive examination either written, oral or both following remediation, the student will be asked to withdraw from the Program.

**Thesis**
The program requires a thesis for the completion of the M.S. degree. This scholarly project may be literature based research, a clinical or counseling project or laboratory based and should relate to some aspect of genetic counseling. Dr. Matthews will advise students regarding appropriate topics and projects. She will assist each student in identifying an appropriate thesis advisor and other faculty members from the Department of Genetics to compose the student’s thesis committee. Dr. Matthews sits on all committees. The committee is charged with assisting the student in defining the area of research and carrying out the project.

Together, the student and the committee will determine the research schedule. Students begin to garner ideas considering possible projects during the first semester of the first year. Late in fall semester/early spring semester of year 1 (by January), students meet with Dr. Matthews to discuss their ideas and possible projects. Students register for 1 credit hour of GENE 651 Master’s thesis and are expected to have identified a project with a study purpose and specific aims by March 1st. The final written proposal (in NIH format) is expected to be completed and given to committee members no later than the end of spring semester. Failure to have drafted a proposal to submit to the thesis committee will result in receiving an “Unsatisfactory” grade for GENE 651. Moreover, during spring semester of the first year, students take EPBI 460, Health Research Methods. A major component of the course is to prepare a NIH type proposal, thus hopefully students will be able develop their projects during this time and obtain additional guidance and feedback from the course faculty of EPBI.

When the proposal is circulated to committee members, the student will set up a date for the committee to meet for a proposal presentation. During the initial committee meeting, students formally present their thesis proposal to their committee members and work with the thesis committee to finalize the project. Students whose projects involve human subjects must submit their proposals to University Hospitals Case Medical Center’s Institutional Review Board (IRB) (and to other institutional IRBs as appropriate) as soon as their committee approves the project. During the summer semester, students continue to work on their chosen projects. As students near completion of their projects, an oral defense is held with the student’s thesis committee. If the student successfully passes the oral defense, the thesis committee permits the student to schedule a formal public defense of her/his thesis work to faculty, students and the Case community. The written thesis must conform to the Graduate School regulations.

**Maximum Time Allowed**
All the requirements for the master’s degree must be completed within five consecutive calendar years. Due to the nature of the clinical rotations, students need to complete the
didactic and clinical course work within the 21 months of the program. However, additional time often is necessary to finish thesis work and thus, extend the time that a student remains in the program. A master’s candidate who has already completed six semester hours of thesis credit (GENE 651) may, with the approval of the advisor, enroll in GENE 651 for one credit hour for a maximum of two semesters to complete the thesis.
CONFERENCES AND CLINICAL ROUNDS

REQUIRED

CLINIC CONFERENCE:

4:00 p.m. Tuesdays Center for Human Genetics

Selected patients seen during the preceding week, or patients scheduled to be seen during the upcoming week, are presented to the clinical genetics team for comments and suggestions regarding diagnosis and management. Abnormal laboratory results are also discussed. Students are expected to present their assigned patients at this conference.

GENETIC COUNSELING JOURNAL CLUB:

Monthly (Wednesdays – 12 noon)

Students and faculty review and discuss recent journal articles relevant to genetic counseling. Students will have an opportunity to learn to critically review and critique the literature. Each student will be assigned a specific date on which to present an article or articles of their choosing for the group to discuss.

CLINICAL GENETICS ROUNDS:

1:00 p.m. Fridays BRB 8th floor

Clinical Genetics Rounds are presented by the genetics faculty, genetic counselors, residents and fellows or invited speakers from both within and without CWRU and UH. Topics relevant to the practice of clinical genetics and genetic counseling are presented. Presentations may be case based, review of current knowledge regarding a particular topic or a researcher’s current endeavors.

STUDENT/POSTDOC RESEARCH SEMINAR:

11 a.m. Mondays BRB Lecture Hall 105

Graduate students, postdoctoral research students and clinical fellows present their research to the rest of the department. Genetic counseling students attend to support their fellow students and to be informed of the newest areas of research happening in the department.
REQUIRED DURING APPROPRIATE ROTATION

PRENATAL ROTATIONS:

Fetal Boards, UHCMC
OB/Genetics Conference, MetroHealth
Fetal Treatment Center, Akron

These conferences are directed toward genetics topics of interest to the obstetricians and neonatologists. Genetic counseling students attend these conferences when appropriate as directed by the supervising genetic counselor during their prenatal diagnosis rotation. They are invited to attend during the rest of their program as time permits.

LABORATORY ROTATION:

Cytogenetics/DNA Diagnostic Lab Conference
Abnormals Cytogenetics Conference

Discussion of topics related to the clinical labs by a faculty member, student or guest. Genetic counseling students will be required to attend these conferences during their laboratory rotation. The rotating student will also present a topic of their choosing during one of these conferences.

CANCER ROTATIONS

Multi-disciplinary Breast Cancer Conference and GI Tumor Board, UHCMC
GI/Breast/General Tumor Boards, MetroHealth
GI/Breast/General Tumor Boards, CC
Cancer Clinic Conference, MetroHealth
Cancer Clinic Conference, CC

Newly diagnosed and follow-up patients with breast cancer and other hereditary type cancers are presented for consensus of treatment care paths. Medical specialty groups attending include Genetics, Surgery, Oncology, Radiation Oncology, Pathology and Clinical trials. Genetic counseling students will be required to attend this conference during their Cancer genetics rotations.

GENERAL GENETICS ROTATIONS

Clinic Conferences at Akron, MetroHealth, CC
Grand Rounds at MetroHealth, CC
Pediatric & Cancer lectures at MetroHealth

At Clinic Conferences, patients are presented to the clinical genetics team for comments and suggestions regarding diagnosis and management. Genetic counseling issues are discussed. Students are expected to present their assigned patients at these conferences. Grand Rounds and lectures present topics of interest to clinicians as well as genetics professionals and students.
OPTIONAL
GENETICS RESEARCH SEMINAR:
11 a.m. Wednesdays BRB Lecture Hall 105

Faculty from within and outside the institution discuss their research. This is an opportunity to hear highly accomplished researchers discuss state of the art genetic research in a wide range of areas.

SUPPLEMENTARY ACTIVITIES

*CLINICAL OBSERVATION EXPERIENCE:

First year, first and second semester

Starting in first semester and continuing throughout the second semester of the first year, each student will have an opportunity to observe cases at the Center for Human Genetics at University Hospitals Case Medical Center in the General Genetics Clinic, Cancer Genetics Clinic, Prenatal Diagnosis Clinic and/or any of the Specialty Clinics. In addition, students will rotate through Genetic Services at MetroHealth Medical Center as well as the Center for Personalize Genetic Healthcare in the Genomic Medicine Institute at the Cleveland Clinic Foundation for observations. A schedule of observation rotations at each of the three institutions will be drawn up and given to the student at the beginning of the year. Each student will observe at least one case per week during the semester with a minimum of 4 cases per clinical area (prenatal, cancer, general genetics and specialty clinics). Each week, students will select a case and obtain approval of the genetic counselor to attend the session. They will prepare for the case by reviewing the patient chart as well as reading appropriate literature to familiarize themselves with the diagnosis, etc. Students may be asked by the genetic counselor to participate in the counseling session such as collecting history information or taking the family pedigree.

Additionally, each rotation site may have other requirements for the student to successfully complete during the observational experiences such as writing clinic notes, patient letters, researching and presenting on a specific topic, and/or attending procedures (CVS, amniocentesis, etc).

Students will provide written feedback of each case seen during the semester to the Program Director. Discussion time regarding these experiences will be provided during GENE 528 Principles and Practice of Genetic Counseling and GENE 529 Psychosocial Issues in Genetic Counseling. In addition, by the end of spring semester, the student will have prepared one counseling outline for the following types of cases: AMA (advanced maternal age); MSS (maternal serum screening); breast cancer; colon cancer; Marfan syndrome; OI (osteogenesis imperfecta); Prader Willi syndrome and general evaluation of MR (mental retardation). Specific guidelines for developing these counseling outlines will be discussed during the early part of fall semester.
**HUMAN DEVELOPMENT OVERVIEW:**

First year, during first week of spring semester - Dr. Matthews

This required one-week seminar is an overview of normal individual development through the life cycle that complements and expands material from GENE 528 – Principles and Practice of Genetic Counseling. It provides a review of basic developmental tasks for each life stage in the context of physical, psychological, familial, and sociocultural factors.

**TEACHING/PUBLIC PRESENTATIONS:** variable

Students may have the opportunity to formally present topics of interest at the Clinical Genetics Rounds throughout their training. Students may also have the opportunity to gain experience in presenting information regarding genetic counseling, the career of genetic counseling or some aspect of clinical genetics to lay, student and/or professional audiences outside of the department. As requests are received by the Department of Genetics/Center for Human Genetics, students will be asked to present. Under the guidance of the Program Director and genetic counselors, the student will have an opportunity to prepare and give such a talk. Slides and other visual aids such as pamphlets from the CHG will be available to the student. As the number of requests for such talks is variable, students may or may not have this experience.

As part of the opportunity to provide information to the general public, first year students will be asked to answer questions posted to the Inherited Diseases and Birth Defects Health Topic at the NetWellness Consumer Health Information website (http://www.netwellness.org/). Dr. Matthews is the editor and content expert for this topic. NetWellness, is a web-based consumer health information service that is jointly sponsored by Case Western Reserve University, University of Cincinnati Medical Center, and The Ohio State University. Students will be assigned to answer four questions over the fall and spring semester, which will be reviewed, edited and if appropriate, posted to the website.
COURSES AND CREDITS

FIRST YEAR

All first year students in the genetic counseling tract are expected to complete the required courses of the first year of the program for a total of 19 credits, receiving a minimum of a B grade. Students will also participate in other activities such as clinical conferences, departmental seminars, Journal Club, etc. Students will begin to identify suitable projects for consideration for thesis work. It is expected that the thesis proposal will be presented during spring semester.

Year 01 FALL

GENE 528: Principles and Practices of Genetic Counseling (3 credits)
Matthews and faculty
Fundamental principles needed for the practicing genetic counselor. Topics include skills in obtaining histories (prenatal, perinatal, medical, developmental, psychosocial and family); pedigree construction and analysis, physical growth and development; the genetic evaluation; the physical examination and laboratory analyses; prenatal issues, prenatal screening and diagnosis; and teratogenicity.

GENE 524: Advanced Medical Genetics: Cytogenetics (2 credits)
Matthews and faculty
Fundamental principles regarding clinical cytogenetics including discussion of autosomal numerical and structural abnormalities; sex chromosome abnormalities; population cytogenetics; mosaicism; uniparental disomy; contiguous gene deletions, and cancer cytogenetics.

GENE 525: Advanced Medical Genetics: Clinical Genetics (2 credits)
Matthews and faculty
Fundamental principles regarding congenital malformations, dysmorphology and syndromes. Discussion of a number of genetic disorders from a systems approach: CNS malformations, neurodegenerative disorders, craniofacial disorders, skeletal dysplasias, connective tissue disorders, hereditary cancer syndromes, etc. Discussions also include diagnosis, etiology, genetics, prognosis and management. In addition, students attend a series of lectures given during WR2 Block 2 (first year medical student course) on concepts of oncology including epidemiology, principles of oncogenesis and treatment approaches.

GENE 526: Advanced Medical Genetics: Molecular /Quantitative Genetics (2 credits)
Drumm, Mitchell and Darrah
Fundamental principles of gene structure; mechanisms, detection and effects of mutations; imprinting; triplet repeat disorders; X-chromosome inactivation; mitochondrial disorders; animal models for genetic disease and gene therapy.

Quantitative: Fundamental principles of pedigree analysis, segregation analysis, Bayes theorem; linkage analysis and disequilibrium; multifactorial inheritance; risk assessment; consanguinity and paternity testing.
**Embryology** (certificate)  
This online course (taught by embryologist Dr. DJ Lowrie), is sponsored by the Genetic Counseling Program at the University of Cincinnati and provides the student with an understanding of normal human development/embryology and the processes by which developmental anomalies occur. The course is divided equally into basic embryology and clinical application presentations. Each lecture is presented using a combined audio/video format and detailed PowerPoint slides. There are self-assessment activities and a final examination. Students will have access to the course starting in June, prior to classes beginning in August and will be required to complete the online course by the end of November of the first year. All students who successfully pass the course will receive a certificate of completion. The fee for the course will be paid for by the Department of Genetics.

**Medical Genetics, Terminology & Anatomy Review** (0 credits)  
Matthews  
A one week intensive at the beginning of fall semester devoted to reviewing fundamental concepts of medical genetics. Review will include patterns of inheritance, complex traits, non-mendelian patterns of inheritance, and genetic testing. An introduction and review of common medical terminology and a brief overview of the physical examination using a systems approach is also covered.

**Year 01 SPRING**

**GENE 529: Psychosocial Aspects of Genetic Counseling** (3 credits)  
Matthews and faculty  
Fundamental principles regarding the psychosocial aspect of birth defects and genetic disease, its psychological and social impact on the individual and family are presented. Topics include the genetic counseling interview process, issues regarding pregnancy, chronicity, death and loss. Impact of cultural issues are addressed. Resources for families are also explored. Basic interviewing skills are addressed. Students will have an opportunity for practice of skills through role play and actual interviewing situations.

**EPBI 461: Health Research Methods** (3 credits)  
Smyth and faculty  
This is a course in research methods focusing on practical issues in the conduct of health services research studies. Topics include: an overview of health services research; ethics in health services research; proposal writing and funding; the relationship between theory and research; formulating research questions; specifying study design and study objectives; conceptualizing and defining variables; validity and reliability of measures; scale construction; operationalizing health research relevant variables using observation, self and other report, and secondary analysis; formatting questionnaires; developing analysis plans; choosing data collection methods; sampling techniques and sample size; carrying out studies; preparing data for analysis; and reporting of findings.
SASS 517: Family Systems Interventions  
Faculty at MSASS

This course covers the knowledge, concepts, and skills associated with working families. The practice method will reflect a family systems approach, integrating theories and approaches within a systemic perspective. It will build practice skills in assessing, interviewing, and intervening with families and emphasize a strength-based perspective on intervention with families. Considerations of family issues at different developmental stages will be presented. The issue of ethically competent and community-based social work practice with families will be stressed throughout the course for each content area.

Cancer Genetics Seminar  
Matthews and faculty

This required seminar during spring semester will discuss basic concepts in cancer epidemiology, principles of cancer genetics, inherited cancer syndromes, approaches to differential diagnosis, risk assessment, genetic testing, screening and management of patients with familial or inherited cancer disorders and psychosocial issues.

GENE 651 Thesis  
Matthews and faculty

SECOND YEAR  
Second year students will complete the remainder of course work, an additional 4 semester hours. Students will also register for thesis hours during the second year, for a minimum number of 5 hours over two semesters. Additionally, they will register for 12 credit hours of clinical practicum – 3 hours in summer semester, 3 hours in fall semester and 6 hours in spring semester. During late January, second year students will sit for the Comprehensive Examination (written and oral). Thesis proposals can be scheduled at any time following the comprehensive examination.

Year 02 SUMMER  
GENE 532 Clinical Rotation II  
Matthews and faculty

Year 02 FALL  
GENE 527: Advanced Medical Genetics: Biochemical Genetics  
Zinn and faculty

Fundamental principles of metabolic testing; amino acid disorders; organic acid disorders; carbohydrate disorders; peroxisomal disorders; mitochondrial disorders; etc. Discussion of screening principles and newborn screening as well as therapy for metabolic diseases is included.

GENE 532 Clinical Rotations III  
Matthews and faculty
GENE 651: Thesis  Matthews and faculty  (3 credits)

Year 02  SPRING

GENE 530: Ethical and Professional Issues in Genetic Counseling  Matthews and Daly  (2 credits)
Professional issues inherent in medical genetics and genetic counseling are addressed including ethical, legal, religious and cultural concepts. Fundamental principles of ethics are explored in some depth as they relate to genetic issues such as confidentiality, privacy, discrimination, autonomy and informed consent.

GENE 532 Clinical Rotations IV Matthews and faculty  (4 credits)
GENE 651: Thesis Matthews and faculty  (3 credits)
### YEAR 01 - FALL

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<td>Gene 524</td>
<td>Advanced Medical Genetics: Cytogenetics</td>
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<td>Gene 526</td>
<td>Advanced Medical Genetics: Molecular/Quant</td>
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### SPRING

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<td>Health Research Methods</td>
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<td>SASS 517</td>
<td>Family Systems Interventions</td>
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### SPRING

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**Total credit hours = 40**
CLINICAL ROTATIONS

Description

Students must satisfactorily complete all rotations of clinical practicum. Rotations include the following areas: General Genetics (pediatric and adult patients), Specialty Clinics, Prenatal Diagnosis Clinic, and Hereditary Cancer Clinic. Clinical rotations are held at four sites: Center for Human Genetics at University Hospitals Case Medical Center, MetroHealth Medical Center, Genomic Medicine Institute at the Cleveland Clinic and the Genetics Center, Akron Children’s Hospital. Additionally, each student will rotate through the Cytogenetics and Diagnostic Molecular Genetics Laboratory. Clinical rotations are scheduled in eight-week blocks during fall and spring semester of the second year. The first rotations occur in the summer between first and second year. There is a 6-week rotation held at Genetic Services, Akron Children’s Medical Center as well as a 4 week rotation in the CHG Laboratory. The remaining 4 rotations are 8 weeks in length and continue through fall and spring semesters of Year 2. The rotations are:

- Akron Genetics: General Genetics, Prenatal, Cancer (6 weeks)
- Clinical Cytogenetics/Molecular Laboratory Rotation (4 weeks)
- MetroHealth Medical Center: General Genetics, Prenatal and Cancer
- Center for Human Genetics: Prenatal Genetics
  At either Center for Human Genetics or the Genomic Medicine Institute:
  Clinical General Genetics (includes Metabolic, Specialty Clinics, Consults)
  At either Center for Human Genetics or the Genomic Medicine Institute:
  Clinical Cancer Genetics

The specific rotational schedule for each student will be assigned by Dr. Matthews during the spring semester of the first year.

Each clinical rotation will provide students with opportunities to have first-hand experience with individuals and families affected by a broad range of genetic disorders. The intent of each rotation will be to expose students to the natural history and management of common genetic conditions and birth defects and to the relevant psychosocial issues involved in each case. During these clinical experiences students will be required to observe and practice a range of genetic counseling functions, including preparing for cases; obtaining medical and family histories; determining risks; performing psychosocial assessments; communicating information about disease characteristics, inheritance, and natural history; providing anticipatory guidance and supportive counseling; identifying and using medical and community resources; communicating information to other health care professionals; and case management and follow-up.

Each student, over the period of 3 semesters, will be able to complete a Logbook of Supervised Cases and other materials documenting their clinical training. These materials become a permanent part of the student’s portfolio and will be collected by Dr. Matthews prior to the
student exiting the program. In each clinical setting, the student will have direct supervision by a certified genetic counselor and/or medical geneticist. During the laboratory rotation, the student will be under the supervision of the directors of the laboratories. The student must register for a total of 11 credit hours of Gene 532 (3 credit hours in summer; 4 hours in fall and 4 credit hours for the final spring semester) for a minimum of 720 hours of clinical practicum and an additional 160 hours laboratory experience.

Grading
Grading is on a Pass/Fail basis. Successful completion of EACH clinical rotation is required to graduate from the program. Specific requirements for successful achievement in clinical rotations are those listed in the Handbook under each clinical rotation and outlined by your clinical supervisors during each rotation. These include, but are not limited to, preparing for a minimum of 3 cases per week (chart review, literature search on appropriate topics pertaining to each case, obtaining additional information – lab data, hospital records, etc), and meeting with the supervising counselor prior to each case (at a time agreed upon by the student and the counselor) to discuss counseling issues and strategies. In addition, the student will prepare a pre-case counseling outline and write-up. The pre-case write-up will be the basis for case review and discussion with the supervising counselor. The pre-case must be completed and reviewed (see individual clinical rotation requirements) prior to seeing the patient in order for the student to actually see the case.

Following each case, clinic notes, letters, post case write-ups and other additional information requested must be submitted in a timely manner (see specific clinical rotation information). Failure to meet expected deadlines more than 3 times for case write-ups, letters, etc, will result in a failing grade for the rotation and the student will either need to repeat the rotation or be asked to withdraw from the program. In the event that a student does not perform satisfactorily and meet the requirements of the practice-based competencies, the student will meet with the supervising genetic counselor(s), the clinical coordinator and the Program Director to decide how deficiencies will be rectified. This may be, but is not limited to, doing additional clinical work which in turn may prolong the student’s program.

Practicum Objectives
The clinical practicum supports the development of practice-based competencies as outlined by the American Board of Genetic Counseling and represents practice areas that define activities of a genetic counselor. These competencies fall into the following domains: communication skills; critical-thinking skills; interpersonal, counseling, and psychosocial assessment skills; and professional ethics and values. During each rotation, students will be assessed on skills necessary for achievement of each competency as outlined in specific objectives.

The student will able to:
1. establish a mutually agreed upon genetic counseling agenda with the client.
2. elicit an appropriate and inclusive family history.
3. elicit pertinent medical information including pregnancy, developmental and medical histories.
4. elicit a social and psychosocial history.
5. convey genetic, medical, and technical information including, diagnosis, etiology, natural history, prognosis, and treatment/management of genetic conditions, and/or birth defects to clients with a variety of educational, socioeconomic, and ethnocultural backgrounds.
6. explain the technical and medical aspects of diagnostic and screening methods and reproductive options including associated risks, benefits and limitations.
7. understand, listen, communicate, and manage a genetic counseling case in a culturally responsive manner.
8. document and present case information clearly and concisely, both orally and in writing, as appropriate for the audience.
9. assess and calculate genetic and teratogenic risks.
10. evaluate a social and psychosocial history.
11. identify, synthesize, organize and summarize pertinent medical and genetic information for use in genetic counseling.
12. demonstrate successful case management skills.
13. assess client understanding and response to information and its implications to modify a counseling session as needed.
14. identify and access resources and services.
15. identify and access information resources pertinent to clinical genetics and counseling.
16. establish rapport, identify major concerns, and respond to emerging issues of a client or family.
17. elicit and interpret individual and family experiences, behaviors, emotions, perceptions, and attitudes that clarify beliefs and values.
18. use a range of interviewing techniques.
19. provide short-term, client-centered counseling and psychological support.
20. promote client decision-making in an unbiased, non-coercive manner.
21. establish and maintain inter-and intra-disciplinary professional relationships to function as part of a health care delivery team.
22. act in accordance with the ethical, legal, and philosophical principles and values of the profession.
23. serve as an advocate for clients.
24. introduce research options and issues to clients and families.
25. recognize his or her own limitations in knowledge and capabilities regarding medical, psychosocial, and ethnocultural issues and seek consultation or refer clients when needed.
26. demonstrate initiative for continued professional growth.

LOGBOOKS

Each student will keep a logbook of ALL patients he/she sees including all observations. This log should include all information needed to satisfy documentation of the student’s role in each case as well as detailed notes on the cases and counseling strategies. The logbook should reflect the depth and breadth of the student’s clinical experience. A program log form will be provided.
to you electronically before starting clinical rotations (see example in handbook). Logbooks will be reviewed by the Program Director at the end of each clinical rotation. Additionally, all student cases will be reviewed and must be completed to the satisfaction of the supervising genetic counselor, physician, and program director prior to the student leaving the program. Patient identifiers (such as patient hospital number) must never be used on the logbook. The student will assign a unique identifier for each case seen.

Specific expectations during each rotation for each clinical site will be given to the student prior to starting the rotation (see following materials). In addition to the pre and post case write-ups for each case, the student will provide the supervisor for each case a copy of the **Patient Encounter form** (see example and instructions). Elements of the counseling session (management/counseling roles) are listed and will be checked off during and after the session as appropriate. After the case is finalized, the student will have the supervisor review the form and sign and date it. These forms must be given to the Program Director to be maintained in the student’s file at the end of the rotation.

A copy of your completed logbook **MUST** be given to Dr. Matthews to retain in your file. You will have an exit interview with Dr. Matthews to review your logbooks and other materials before leaving CWRU.

Finally, prior to starting each rotation, each student will identify specific goals that the student wishes to accomplish during that rotation. Students will continue to add and build upon the list of goals at the beginning of each new rotation and will review them with the supervising counselor(s) at the beginning and end of a rotation. It is anticipated that by the end of the Program, the students will have achieved the goals that they set for themselves.

**CLINICAL ROTATION SITES**

**Center for Human Genetics University Hospitals Case Medical Center**
The Center for Human Genetics is located at 1500 Lakeside. Patients are also seen at UH Landerbrook Health Center and at UH Chagrin Highlands Health Center. The Center's vision is to achieve excellence in three areas of human medical genetics: patient care, research and education. By combining these three areas, the Center provides unique opportunities for research collaboration and excellent education of residents, fellows and graduate students. The Center for Human Genetic Laboratory is located in the W.O. Walker Building.

The Center is under the direction (acting) of Shawn McCandless, MD. There are six board certified clinical geneticists, one board certified clinical cytogeneticist, one board certified clinical molecular geneticist, seven board certified genetic counselors, a nutritionist, as well as laboratory technologists/technicians and support staff members.

The CHG laboratory provides state-of-the-art clinical cytogenetic, molecular and prenatal services for screening, diagnosis and monitoring. The clinical and molecular cytogenetics laboratory, under the direction (acting) of Christine Curtis, PhD, performs chromosome analysis on a variety of specimens including blood, bone marrow and various tissues including skin biopsies and tumor samples. The molecular diagnostic testing laboratory, under the direction of Dr. Shulin Zhang, performs DNA-based testing for many disorders including cystic fibrosis,
hereditary hemochromatosis, uniparental disomy and hearing loss. In addition, the lab provides engraftment monitoring for patients who have undergone bone marrow transplantation. The prenatal laboratory offers both first trimester screening and 2nd trimester "quad" screening for maternal serum samples.

The Center also has very active specialty clinics for cancer genetics, craniofacial disorders and metabolic disorders (including abnormal newborn screens). The cancer genetics program was the first (and is the oldest) in Ohio. The cystic fibrosis newborn screening program is the only program of its kind in the Cleveland metropolitan area.

The metabolic service participates as one of eight Urea Cycle Disorders (UCD) centers in the United States. As part of the UCD center, they are actively enrolling subjects into the Longitudinal Study of Urea Cycle Disorders. In addition, the Center houses the Mount Sinai Center for Jewish Genetic Diseases, which is the only center of its kind in Northeast Ohio.

**Genetics Center Children's Hospital Medical Center**
The Genetic Center at Akron Children's Hospital helps individuals and families understand the role of genetics in their lives as it relates to their health. The Center is under the direction of Dr. Mohamed Khalifa and is staffed by four geneticists and eight genetic counselors. The center provides counseling in the areas of pediatric genetics, adult genetics, cancer genetics, preconception and prenatal services and a number of specialty clinics.

The Fetal Treatment Center of Northeast Ohio is a comprehensive center providing expertise in all facets of preconception care, prenatal diagnosis, reproductive genetics and prenatal treatment for the mother carrying a fetus with a potential or confirmed genetic condition or birth defect. Established in 2002, it is based at the Genetic Center at Akron Children's Hospital, with additional offices at both Akron City Hospital and Akron General.

**Genetics Division MetroHealth Medical Center**
The Genetics Division, under the direction of Dr. Carol Crowe, provides outpatient and inpatient consultation services for adult, prenatal and pediatric patients at MetroHealth Medical Center and at several outreach locations: the Cleveland Clinic, Fairview Hospital, the Elyria City, Medina County and Richland County Health Departments. The division has two certified genetic counselors.

Specialty areas include cranial facial, hearing loss, neuromuscular, cancer, Huntington disease and fetal alcohol clinics.

In addition to genetic services, the Perinatal Center of Northeast Ohio at MetroHealth provides comprehensive maternal fetal medicine evaluations for high risk pregnancies which include Level II ultrasounds, amniocentesis, and chorion villus sampling. The staff includes a board certified clinical obstetric geneticist and several board certified and board eligible Maternal Fetal Medicine specialists.

**Genomic Medicine Institute & Center for Personalized Genetic Healthcare at CCF** In 2005, Dr. Charis Eng came to the Cleveland Clinic and launched the Genomic Medicine Institute (GMI). GMI serves as the expert base for investigation and practice of genomic medicine by
being a single platform for research, clinical care and outreach/education ultimately directed at genomic-based personalized genetic healthcare. The clinical branch of the GMI is the Center for Personalized Genetic Healthcare (CPGH). Presently, the CPGH is staffed by five geneticists and nine genetic counselors.

The CPGH Program provides care in all areas of medical genetics including cancer genetics, general genetics and prenatal genetics. Cancer genetic research is a major focus.

**ETC. ETC. ETC.**

**University Academic Calendar & Holidays**

Graduate students in the Department of Genetics are officially registered for the entire year and as such are expected to dedicate full time to course work, clinical training and study. Graduate students in the professionals schools are subject to the University Graduate School Calendar (not the Undergraduate Calendar), which specifies the holidays they may observe each year. Thus, graduate students in the Genetic Counseling Training Program are expected to be present throughout the entire semester, regardless of whether or not classes, etc, are in session. Official holidays include Labor Day, 2 days at Thanksgiving, 2 weeks for Christmas/New Years break, Martin Luther King Day, 1 week spring break and July 4th. Vacation times will be planned and discussed with the appropriate clinical faculty or supervising genetic counselors, etc. Final approval must be given by Dr. Matthews.

**Attendance**

Students are expected to attend all required conferences, classes and clinical assignments. Attendance is required whether or not the student is actively involved in a rotation, even when the rotation is off campus. If the student is ill or must miss a conference, class or clinical assignment, the student must contact the appropriate supervising genetic counselor, professor or Dr. Matthews to notify them that they are ill. During clinical rotations, if a student misses more than 6 days during the rotation, the student will be expected to repeat that rotation in order to receive a passing grade. If the student misses a significant portion of required attendance at clinical conferences or classes, the student may be asked to extend their program to make up deficiencies.

**Graduate Student Stipends**

The Genetic Counseling Training Program is supported by departmental funds. Each student will receive a stipend of $10,000.00 per year for a total of $20,000.00. Students will receive a stipend check in the amount of $1000.00 on the last day of each month starting on September 30th during the first year (a 10 month period). During Year 02 which begins July 1, the stipend check will be for $909.00 (an 11 month period). The stipend will continue to run through May of Year 02. In addition to the stipend, the Department also covers the Technology fee of $426 per year as well as the $350 registration fee for the on-line embryology course.
Financial Aid

Each student is responsible for obtaining his or her own financial aid. The Office of University Financial Aid should be able to assist you. The telephone number is (216) 368-4530. Financial arrangements should be made by the time the student registers for each semester. Tuition for the 2010-11 academic year is $1,430.00 per semester hour. Fall and spring semester tuition bills are sent directly to the student. Summer tuition must be paid “up front” at the time of registration (the University does not mail out tuition bills – they collect at the time you register for classes – which is 3 credit hours in summer).

Other expenses include the CWRU Medical Plan fee which is automatically billed at the beginning of both fall and spring semesters (spring semester covers summer). The cost is $660 per semester. Students who have alternate medical insurance may waive the CWRU Medical Plan fee each semester by completing a waiver form, which is available at the University Health Service (368-2450).

Students may work part time as long as it does not interfere with program requirements including didactic coursework and class times, clinical rotation responsibilities and thesis work. Students may contact the Office of Student Employment which assists students seeking part-time employment on and off campus during the academic year and summer term.

Student Office

Students will be assigned an office on the 6th floor of the Biomedical Research Building. A key to the student office will be made available through the Security Office of CWRU. Each student will sign out a key for the time that they are in the program. All keys MUST be returned to the Security Office before a student can graduate. There is a $35.00 replacement fee for any lost or non-returned keys.

Two computers are available in each of the student offices. The computers are connected to CWRUnet, which allows students to access the Internet as well as email. Each student at CWRU receives free access to email services through Case gmail. You will receive an ID number and directions for accessing the Internet at home after you arrive on campus. Moreover, the campus is wireless, so students should be able to access the Internet from anywhere on campus if their laptops have wireless capability.

Reference texts as well as copies of three journals in the Student Office belong to Dr. Matthews and many are her personal copies. They are there for your benefit. They MUST be left available in the office and must NOT be removed.

The telephone is available for local use ONLY. Please do not give out the Department of Genetics phone number for personnel messages unless it is for an emergency.

Mailboxes
Students will each have their own mailbox in the office in which Dr. Matthews and faculty will be able to leave materials and messages for each student. In addition, students have an assigned mailbox on the 6th floor BRB (west administrative area). Please check this daily for messages, or other related program activities. Announcements and activities in the Department are usually posted by the elevators and on bulletin boards on both the 6th and 7th floors.

**Libraries – Case and Student Office**

Students have access to all of the libraries on the Case campus. The majority of journals and texts that will most likely be useful to genetic counseling students can be found in either the Health Sciences Library or Allen Medical Library. Additionally many journal subscriptions are available to Case students on line. Hard copies of the *Journal of Genetic Counseling* are available in the students’ offices. Here again, this is Dr. Matthews’ personnel subscription (the *Journal of Genetic Counseling* issues from 1/2004-12/2005 are on-line only). Dr. Matthews’ copies of *The American Journal of Human Genetics* and *Genetics in Medicine* Journal are also in the student offices.

**Student Office Space at Rotation Sites**

Office space (cubicle area or other arrangement) has been made available to students when they are involved in clinical rotations at the various institutions. Each genetics center will provide students with access to patient records and materials including computer access to on-line databases as appropriate. **NO PATIENT RECORDS ARE TO BE REMOVED FROM ANY GENETICS CENTER – NOR MAY ANY PATIENT DATA BE COPIED AND TAKEN OUT OF THE FACILITY.** Office space at the various institutions is not large. Please do NOT use hallways or secretaries’ office areas as gathering or meeting places. Students should NEVER telephone patients or do telephoning of patient related matters from any area other than those that have been designated by your supervisors. NO personal calls should be made or received at your rotation site unless there is an emergency.

**Library**

Students may use the Center for Human Genetics Library at any time. Books, journals and reprints may NOT be removed, but copies may be made at the Center. Other facilities will let you know what reference materials you have access to during your rotations.

**Confidentiality Agreements and HIPAA Training**

Students must sign a Confidentiality Agreements with the various institutions prior to participating in any clinical activities including observations and clinic conferences. This is to preserve patient confidentiality. Due to new regulations under HIPPA – new guidelines regarding maintaining patient confidentiality have been instituted. In this regard, students may NOT copy and maintain any patient records including the pedigree. All pre-case and post-case write-ups must have patient names, etc blacked out.

**Clinical Rotations at the Center for Human Genetics, Akron, Metro and GMI**
Students will be oriented to each of these institutions by the supervising genetic counselors at the time of their rotations. Institutional services, expectations, roles and responsibilities will be addressed in detail at that time.

**Dress**

Appropriate attire and demeanor is expected when seeing patients or when otherwise engaging in professional activities at all clinical rotation sites. Students should wear their CWRU/UHC nametag at all times when involved in any patient situation. Check with the clinic you are assigned to regarding dress codes. Some facilities are stricter than others. In general, blouse and skirt or coat and tie, dress or pantsuit is appropriate attire when seeing families in the clinic area.  

**NOTE:** Blue jeans, shorts, t-shirts or tank tops, very short skirts or tops that are low cut or do not cover the abdomen, heavy boots or shoes, sneakers, etc., are not appropriate clothing for the clinical areas. Body piercing and tattoos cannot be visible to patients. Additionally, if you are seeing patients on consults and will be in the patient areas, you should be dressed as if you were seeing patients. Chewing gum, eating or drinking when seeing patients is unprofessional and should never be done. Dress in the department is casual and you may wear jeans and other casual clothing. However, some items should never be worn such as very short shorts, revealing clothes (see through blouses, tube tops, etc) or dress that is provocative in nature.

**Textbooks**

We have tried to keep required texts to a minimum. I would, however, highly suggest that you purchase or have available the following texts (approximately ~$700 – have put current prices from Amazon.com for a new copy) – all of these texts are used in the courses you’ll be taking. The most economical is to purchase them online – where prices may be reduced. 

ALSO, the Department will give you a $50.00 textbook allowance – reimburse you for that amount – toward a book once a year.

**FIRST YEAR:**

**FALL**


SPRING

SECOND YEAR:
FALL

SPRING

Not required but excellent references:


Also, if you do not have a good molecular genetics text, you might want to consider having one-for example:

All of the above texts will be available to you at the office. You will have assigned readings from Baker and McCarthy-Veach for the genetic counseling courses during first and second semesters. The visual aids flip chart book is very helpful for role plays in these courses as well. Genetics in Medicine is the medical genetics text most people use here – it is used in the molecular course along with the Young text on risk calculation. The Bedside Dysmorphologist is used in the clinical course and Fernandes is used in biochemical genetics course. The cytogenetics text, Principles of Clinical Cytogenetics, you do not have to purchase – it is available in the office. Books needed for courses outside of Genetics will be assigned by the professor for those courses (Health Research Methods and Family Systems).

Academic Integrity

The importance of academic integrity cannot be over-emphasized. Throughout the course of their professional careers, genetic counselors are expected to maintain academic integrity. The School for Graduate Studies has prepared a detailed document about Case’s academic integrity policy. It is the responsibility of each incoming student to read this document, available at this URL: http://case.edu/gradstudies/current/policies.html . University policy states, in part, “All forms of academic dishonesty including cheating, plagiarism, misrepresentation, and obstruction are violations of academic integrity standards.” Anything you write, whether it is for a course, clinical rotation or thesis document, must be entirely in your own words. Students who copy the words of others are engaging in plagiarism, which is a form of academic dishonesty which can lead to loss of credit or dismissal from the program. Whether intentionally or unintentionally, making extensive use of sources without acknowledging them (including the internet) are all interpreted as acts of plagiarism. Quotations, paraphrases and borrowed information must be properly referenced.

Advising

The student’s major advisor for the Program will be Dr. Matthews, the Program Director. Dr. Matthews is available to assist students with all aspects of the Program as well as personal issues if the student so desires. Becky Darrah, assistant director, is also available as well as all of the genetic counselors who are very willing to assist students. Susan Lewis, a medical social worker employed full time in the Family Studies Core Program in the Department is also available to assist students with personal issues and resources.

During clinical rotations, the supervising genetic counselor of that rotation should be the student’s first choice for a resource person. However, a student may also wish to discuss counseling styles, strategies, etc., with Becky Darrah, or other counselors to get a broader perspective. If a counselor feels that information brought to their attention by the student should be shared with the Program Director, the counselor will inform the student of such.

Other
Please address faculty formally as Dr. ................. unless they instruct you that you may do otherwise. In the clinical setting when seeing patients, ALWAYS address the faculty member as Dr. ................. . Also, be sure to ask the counselors how they would like to be addressed in a professional setting – many counselors do not use a nickname when seeing patients.

Background Check/TB Testing/Immunizations

Students are required to have criminal background check as they enter the program. Case Protective Services will do this for a fee of $65 (cash only). This fee covers both the electronic National Webcheck (FBI) and the electronic Ohio Webcheck (BCI) fingerprinting. Results are sent directly to the student as well as to the program director. A positive response on the background check will not automatically preclude admission, however, such findings will be reviewed by the Genetics Department Graduate Program committee who will make a recommendation regarding acceptance into the genetic counseling program.

Students should make an appointment with Case Protective Services when they arrive on campus. Information can be found at: http://www.case.edu/finadmin/security/protserv/fp_gen.htm

Please note that results of any of the criminal background checks may be shared with any of the affiliated hospitals at their request. Students may undergo additional background checks according to policies of affiliated hospitals as well.

TB testing/Immunization Records: Students are required to have an annual TB (Tuberculin) test as well as to submit documentation of current immunization records. TB screening is available at University Health Service, 2145 Adelbert Road, on any weekday but Thursday, and is available at no cost. It does not require an appointment. For hours and other information, call 216-368-2450 or go to: http://studentaffairs.case.edu/health/

Students entering Case are also required to submit a Personal Information Form and Immunization Record whether or not they plan on using University Health Service for their medical needs. Once accepted to the university, students will receive an envelope by mail with instructions on how to obtain the forms and return them to University Health Service. An updated New Student Medical Packet is available online. You can print the forms, complete them, then mail them to University Health Service.

Graduation time

Believe it or not, there will come a day when you will graduate and become our colleagues. When that time comes – there are a few things that you will need to do when you leave CWRU.

KEYS and ID BADGES:
Please return Keys and ID badges to the following:
CAMPUS RESOURCES

The Case campus has a number of resources available to graduate students. Information about resources can be found at the Case website: http://www.cwru.edu. In particular, graduate students have access to:

University Health Service (UHS). UHS is staffed by several professionals including physicians, nurse practitioners, psychologists, psychiatrists, social workers, and registered nurses. A number of the physicians are affiliated with University Hospitals of Cleveland and with the CWRU School of Medicine. Call 216-368-2450 for an appointment.
After Hours Emergency: 216-368-2450

University Counseling Services (UCS), a division of Student Affairs, offers help to students who experience a variety of difficult personal and interpersonal challenges. Graduate school can be very demanding and adjusting to these challenges is not always easy. The UCS office is staffed with psychologists, psychiatrists, social workers, counselors, and doctoral-level counseling trainees. We recommend that students feel free to utilize these services at any time. Call 216-368-5872 for an appointment. UCS also has walk-in hours and emergency assistance. Please refer to the Counseling Services website for additional information http://studentaffairs.case.edu/counseling/

THE UNIVERSITY, UNIVERSITY CIRCLE and CLEVELAND

Case Western Reserve University (CWRU) is a private nondenominational institution. It was established in 1967 by the joining of Western Reserve University (founded in 1826) and its neighboring institution, Case Institute of Technology (founded in 1880). CWRU is located four miles east of downtown Cleveland in University Circle, one of the largest cultural and educational centers in the nation. Over thirty educational, scientific, medical, cultural, social service and religious institutions are located here. The Cleveland Museum of Art, the Museum of Natural History, the Historical Museum, The Cleveland Institute of Music, the Cleveland Institute of Art, and Severance Hall, home of the world famous Cleveland Orchestra, are located adjacent to the University campus within the 500 acre University Circle community. The University also maintains an active program of theater, films and music at nominal cost to students. Athletic facilities at the University are excellent and there are active intramural programs in various sports.

Cleveland is a cosmopolitan community of 2 million people richly endowed with a wide range of cultural and recreational opportunities, including an extensive park system. Cleveland is home of professional sports teams in baseball, football, basketball, hockey and soccer. Lake Erie
and the camping, sailing, and skiing areas of Ohio, western Pennsylvania and western New York are readily accessible.

**HOUSING**

Most graduate students live off campus in one of the pleasant residential neighborhoods within walking or biking distance of the University. There is a variety of very reasonably priced housing available in these areas. Information about off-campus housing can be obtained from: Off Campus Housing at (216) 368-3780 or the CWRU housing website [http://housing.cwru.edu](http://housing.cwru.edu).

**SOURCES OF ADDITIONAL INFORMATION**

**General Bulletin of Case Western Reserve University:** contains a description of the General Academic Rules and Policies governing Graduate Students as set forth by the University and Graduate School. [http://www.cwru.edu](http://www.cwru.edu)

**Student Services Guide:** contains additional information about Graduate Student Affairs, Student Activities, Academic Services, Other Campus Services, University Policies and Regulations, and a general guide to Cleveland Cultural Activities.

**World Wide Web:** [http://genetics.cwru.edu](http://genetics.cwru.edu)