



**Program Development Plan *for the***  
**1. MS in Genetic Counseling**  
**2. DGC in Genetic Counseling**  
**3. Transitional DGC in Genetic Counseling**  
**Offered by The Ohio State University College of Medicine**

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***Submitted by***  
**Dawn Allain, MS, CGC**  
**Heather Hampel, MS, CGC**

**Division of Human Genetics**  
**2001 Polaris Parkway**  
**Columbus, OH 43240**

**Prologue**

The practice of genetic counseling combines the knowledge of genetic mechanisms and diseases with an appreciation for unique psychological burdens and complex ethical and social issues. It requires a commitment to the highest standards in patient autonomy, privacy, and informed consent and is a fundamental component of genetic testing. The need for properly trained genetic counselors has never been greater as more and more individuals struggle to understand how the knowledge of genetic information might impact themselves and their families. The era of personalized healthcare brings new challenges to the medical system as we attempt to treat each individual differently based on their unique genetic characteristics. More genetic counselors need to be trained in order to fill this need. The first master's level genetic counseling program at Sarah Lawrence College opened in 1969 and there are now 29 graduate programs in the United States and 3 in Canada. These programs graduate approximately 200 students each year and applicant numbers are growing. Employment is typically secured prior to graduation and currently there are more jobs available than there are graduates.

Currently within the genetic counseling profession, there is active discussion regarding converting master's degree programs to clinical doctorate programs. The impetus for this change is primarily based upon two aspects; the national trend by other allied health professions (physical therapists, audiologists, and pharmacists) to cease conferring master's degrees and exclusively confer clinical doctorates, and due to the fact that the current breadth and depth of education required of genetic counseling graduates is consistent with professional doctoral-level education. In addition, genetic counselors with a clinical doctorate degree are more likely to be able to obtain faculty positions at academic medical centers allowing for more seamless integration of genetics into medical education and research.

The Division of Human Genetics at The Ohio State University is seeking to be the leader in the transition to the clinical doctorate. We propose the development of the first clinical doctorate graduate program for genetic counseling (DGC) in the world. The three year curriculum will be designed to integrate scientific knowledge, counseling skills, and clinical experience. Additionally, in anticipation of a career-wide transition to the clinical doctorate in genetic counseling, we will concurrently develop a web-based, distance learning transitional clinical doctorate curriculum that will enable The Ohio State University to capitalize on the need to transition a large proportion of the greater than 2500 genetic counselors currently working in the United States from their master's degree to a clinical doctorate degree. The mission of the clinical doctorate program in genetic counseling at The Ohio State University is to train knowledgeable, compassionate, and scholarly genetic counselor scientists who will be eligible for certification by the American Board of Genetic Counseling (ABGC).

Given that the genetic counseling profession has not formally decided to convert to the clinical doctorate degree, there is a possibility that ABGC will refuse to accredit a clinical doctorate program, even if it incorporates the required criteria for a master's degree program, as outlined in this program development plan. Unfortunately, we cannot apply for ABGC provisional accreditation until the program has been approved by the Ohio State University and the Board of Regents. As a result, we are seeking Board of Regents approval for the following three proposed genetic counseling graduate programs:

1. MS in Genetic Counseling
2. DGC in Genetic Counseling
3. Transitional DGC in Genetic Counseling

If ABGC will not accredit the clinical doctorate program, OSU would offer only the master's degree program for the time being. By obtaining the Board of Regents approval of the clinical doctorate and transitional clinical doctorate programs now, OSU will be poised to quickly convert to the clinical doctorate as soon as ABGC is willing to grant accreditation to such programs.

In the event that ABGC grants accreditation for the clinical doctorate program then; a.) OSU will implement both the first clinical doctorate and transitional clinical doctorate programs in genetic counseling; thereby becoming leaders in the training of genetic counselors, and b.) by obtaining Board of Regents approval of the master's degree program now, OSU would still be able to confer master's degrees in genetic counseling for students who are unable or unwilling to complete this novel clinical doctorate degree program.

### **1.0 Designation of the new degree program, rationale for that designation, definition of the focus of the program and a brief description of its disciplinary purpose and significance**

Consistent with its mission of providing for the health needs of the citizens of Ohio and in particular, personalized medicine, The Ohio State University College of Medicine seeks approval to offer the master's (MS), clinical doctorate (DGC), and transitional clinical doctorate (DGC) degrees in Genetic Counseling at its main campus in Columbus.

The master's and clinical doctorate programs will provide graduate students interested in entering a career in genetic counseling and academia with an excellent integrated medical genetics graduate education at the MS and DGC levels, while benefiting from the Institution's environment with a culture embodied in its values of altruism, compassion, diversity, education, ethics, honesty, humanism, integrity, lifelong learning, personal and professional growth, professionalism, respect, responsibility and safe spaces. In addition, the transitional clinical doctorate will allow practicing genetic counselors to gain additional training in research, new genomic technologies, teaching skills, and advanced clinical skills so that they can expand their professional roles and expertise.

The main objective of the genetic counseling degree programs is to train knowledgeable, compassionate, and scholarly genetic counselors. Graduates of these programs will have a unique perspective on the integration of emerging genetic and genomic technologies and healthcare.

Supporting Ohio's initiatives to impact bioscience-based economic development, these programs would fill a geographical need for students who wish to pursue genetic counseling graduate training in central Ohio. Careers in genetic counseling encompass five main groups of scientists: those in clinical care, biotechnology industry, public health, education, and research.

These programs will offer a unique and exciting new direction in the training of graduate students in a discipline that has a foundation in traditional medical genetics but also integrates with principles of counseling.

### **2.0 Description of the Proposed Curricula**

The objective of these programs is to train master's, clinical doctorate, and transitional clinical doctorate genetic counselors by providing comprehensive course work, counseling skills, and a variety of supervised clinical experiences. Upon graduation, students should be prepared to function as responsible, sensitive, and productive genetic counselors in various work settings and be eligible for certification by the American Board of Genetic Counseling (ABGC).

The proposed curricula for the graduate programs in genetic counseling are designed to provide a foundation in integrated genetic medicine through a selection of core courses. The curricula will proceed to emphasize sub-disciplines based on the expertise of the faculty associated with both the didactic curricula and thesis mentorship. Further, the curricula will seek to educate individuals capable of conducting independent research with in-depth specialized knowledge in one or more of the above areas. Therefore, the curricula are designed to provide a solid educational, technical and experiential foundation for graduate students entering their choice of academic, industrial, regulatory, or other work forces. In addition to the above, the curricula will seek to provide an environment that nurtures and

stimulates the research interests and the intellectual advancement of both students and faculty by providing a forum for scientific and professional discourse.

The curricula for all three proposed programs have been developed and will be assessed based on the ABGC practice-based competencies (**Appendix A**), the ABGC required criteria (**Appendix B**), and the ability based outcomes developed by our program curriculum committee (**Appendix C & D**). Adhering to ABGC guidelines is required in order for the graduate programs to obtain provisional and full accreditation.

Based on the proposed integrated curricula, graduates from these programs will possess the following attributes and competencies:

- A thorough knowledge of the principles of human genetics with emphases on Mendelian and non-Mendelian inheritance, population and quantitative genetics, bases of human variation and disease susceptibility, family history taking and pedigree analysis, normal development/abnormal development, human reproduction.
- A unique perspective on the linkage of human genetics to the medical disciplines especially with regard to cytogenetics, biochemical genetics, molecular genetics, embryology/developmental genetics, teratology, and cancer genetics in the identification of the etiology and medical management of disease.
- Mastery of the principles and practice of clinical/medical genetics including clinical features and natural history of a broad range of genetic diseases, complex common disorders and syndromes of unknown etiology, understanding the diagnostic process, understanding genetic testing, utilizing risk assessment skills, and use of genetics literature, databases, and computerized tools.
- A comprehensive understanding of psychosocial content encompassing counseling theory, interviewing techniques, psychosocial development, family dynamics, dynamics of grief and bereavement, ethnocultural sensitivity and competency, and crisis intervention.
- An appreciation of the social, ethical, and legal issues as they pertain to the delivery of genetic services.
- Familiarity with health care delivery systems and principles of public health emphasizing health and social policy, community, regional and national resources, financial/reimbursement issues, and genetics as a component of public health services.
- An ability to develop and deliver appropriate educational materials and lectures to clients, students and colleagues in health and human services.
- A thorough knowledge of planning, organizing and conducting independent research following the norms and standards of the National Institutes of Health and other national research organizations and societies, and of methods to secure support and independent funding from government and private sources to maintain an independent research program.
- An ability to effectively communicate research findings both orally in small groups or seminars, and in written form in peer-reviewed, published papers to scientists both within and outside the field.
- An understanding of the importance of life-long learning.

### **2.1 Master's Degree in Genetic Counseling**

The master's level genetic counseling program will incorporate coursework, clinical practicum, and a research project as part of the curriculum. A total of 68 credits will be required in order to earn a master's degree in genetic counseling. These credits consist of 38 from core courses, 22 from the clinical practicum, and 8 from a thesis project. The requirements include a thesis of publishable quality.

#### **Coursework**

The proposed courses for the Genetic Counseling degree program (**Appendix E**) include a set of core courses appropriate to this program. Additional core and elective courses could be developed through collaboration with appropriate programs within the institution.

### **Clinical practicum**

During the clinical practicum, students will rotate through clinical settings in which patients with disorders having genetic implications are diagnosed, treated and/or discussed so they appreciate the medical needs and implications a genetic disorder can have on an individual or family. Students will be required to participate as the primary genetic counselor under the supervision of ABGC- or American Board of Medical Genetics (ABMG)-certified genetic counselor or medical geneticist in order to compile a portfolio of at least 50 cases representing a broad spectrum of genetic counseling situations. Students will also rotate through clinical genetic service laboratories.

### **Thesis**

A research project will be required in order to expose students to research, professional writing and continued self-education to promote their personal and professional growth. The types of research projects will vary depending on the student's interests and may involve formulating and testing a hypothesis. Students will work directly with a faculty advisor on their research project. Student research projects may include a report on a series of cases which illustrates a novel concept or answers a specific question. Projects may also include evaluation of an innovative educational tool or counseling strategy. Specific examples of student research projects may include: interpretation of patients' perception of directive or non-directive counseling, factors which influence patient uptake of prenatal maternal serum screening, developing an educational model for other health care professionals regarding genetic testing for cancer, and pregnancy outcomes associated with specific markers in maternal serum.

Should a graduate student not be able to complete the thesis requirement during the two year academic period, they will be allowed to petition the Genetic Counseling Graduate Program's Curriculum Committee to request additional time in which to complete their proposed project. If the petition is approved, the student will be required to enroll in an additional thesis course and their degree will not be conferred until they have successfully completed their thesis project and the defense of their thesis project.

## **2.2 Clinical Doctorate in Genetic Counseling**

In order to earn a clinical doctorate degree in genetic counseling, 98 credits will be required. These credits consist of 48 from core courses, 38 from the clinical practicum, and 12 from a thesis project which involves a thesis of publishable quality, which will be earned over a three year academic period.

### **Coursework**

The proposed courses for the clinical doctorate degree (**Appendix F**) are the same as the courses utilized in the master's training program. In addition, they will have didactic course work in advanced topics such as Leadership skills/Professional Development, The Business of Genetics, Genetics, Law and Social Policy, Learning Styles & Teaching, and Supervision & Feedback.

### **Clinical Practicum**

Students in the clinical doctorate program will have 20 weeks of additional clinical practicum experiences over students in the master's degree program, to solidify their clinical skill set.

**Thesis**

A research project will be required in order to expose students to research, professional writing and continued self-education to promote their personal and professional growth. The types of research projects will vary depending on the student's interests, but all cases will involve formulating and testing a hypothesis. Students will work directly with a faculty advisor on their research project. Student research projects may include a report on a series of cases which answers a specific question. Projects may also include evaluation of an innovative educational tool or counseling strategy. Clinical doctorate students will have additional time to complete their thesis and requirements to work toward publication of their thesis work. Any student unable to complete the thesis requirement within the timeline set forth will be allowed to petition the Genetic Counseling Graduate Program's Curriculum Committee to request additional time in which to complete their proposed project. If the petition is approved, the student will be required to enroll in an additional thesis course and their degree will not be conferred until they have successfully completed their thesis project and the defense of their thesis project.

**Professional Doctoral Examination**

Clinical doctorate students are required to take a professional doctoral examination testing the student's understanding of the theoretical and applied fundamentals of the field as well as the student's readiness to engage in a sustained clinical or professional experience.

**2.3 Transitional Clinical Doctorate in Genetic Counseling**

Students enrolled in this on-line distance learning program will already have a master's degree from an ABGC-accredited training program, or will have achieved certification from the ABGC or the American Board of Medical Genetics (ABMG). In addition, many will have years of experience as clinical genetic counselors.

In order to earn a transitional clinical doctorate degree in genetic counseling, 50 minimum credits will be required. These credits consist of 30 from core courses, 16 from the clinical practicum, and 4 from publications.

**Coursework**

The proposed courses for the transitional clinical doctorate degree (**Appendix G**) will be offered on-line as a distance learning module. These courses will be certified under the nationally recognized Quality Matters Rubric. They will include six of the courses utilized in the traditional clinical doctorate training program. In addition, these students will complete the following additional coursework: Current Technologies, Master Counseling Skills, and Advanced Epidemiology.

**Clinical practicum**

Students will be required to submit a portfolio illustrating 40 clinical cases in which they were the primary genetic counselor. Portfolios will be reviewed by the Curriculum Committee and credit will be awarded based upon the breadth and depth of clinical work experience.

**Thesis/Scholarly Work**

Since these students will have already completed a thesis as part of their master's degree, they will not be required to complete a thesis as part of the transitional clinical doctorate training program. In order to graduate, all students must demonstrate an ability to contribute to the scientific literature. Credit can be awarded for prior publications (one first authored manuscript or 5 co-authored manuscripts) or a new first author manuscript must be submitted before the clinical doctorate degree will be conferred.

**Professional Doctoral Examination**

Clinical Doctorate students are required to take a professional doctoral examination testing the student's understanding of the theoretical and applied fundamentals of the field as well as the student's readiness to engage in a sustained clinical or professional experience.

### **3.0 Administrative arrangements for the proposed program: department and school or college involved**

The Genetic Counseling graduate program will be housed in The Ohio State University College of Medicine School of Medicine and implemented through the Division of Human Genetics (DHG) in the Department of Internal Medicine. Clinical practicums will be provided within the Division of Human Genetics (DHG) and surrounding metropolitan area hospitals.

Two ABGC-certified genetic counselors with clinical experience as well as teaching, research, and administrative capabilities have been selected to function as the Co-Directors of the program. The Co-Directors of the Genetic Counseling Graduate Program will report to the Dean of the College of Medicine. These individuals will also meet on a regular basis with an Advisory Committee containing representative Board-certified clinical geneticists, clinical laboratory geneticists and genetic counselors to evaluate program structure, content, function, and direction.

### **4.0 Evidence of need for the new degree program including opportunities for employment of graduates**

Currently, there are only two Ohio universities who offer a MS in genetic counseling: the University of Cincinnati and Case Western Reserve University. There are five universities of neighboring states who offer a MS degree in genetic counseling. Refer to **Appendix H** for a complete listing of degree programs in the United States.

Our proposed program will be unique because OSU will be the first in the world to offer a clinical doctorate degree in genetic counseling thereby positioning Ohio to be leaders in genetic counseling education. In addition, the scholarly focus of the OSU genetic counseling program will set us apart from other existing programs. These strengths of the program will be critical in the era of healthcare reform and personalized medicine.

It is known that nationally there are many more qualified applicants to genetic counseling programs than the programs can accept. At present, there are 29 accredited genetic counseling programs in the U.S. According to the Association of Genetic Counseling Program Directors (AGCPD) 230 students were accepted into genetic counseling graduate programs for the fall of 2010. There were a total of 2712 applications to all programs and 731 unique applicants (**Appendix I**). In 2009, the last year this data was collected, it was determined that approximately 2/3 of applicants were qualified. Thirty-one percent of the applicants were accepted into a graduate program. An additional one third of students were qualified for admission but were not able to attend a program because the limited number of programs available at this time could not accommodate the qualified applicant pool. This strongly suggests that there are students with a strong interest in genetic counseling that are unable to pursue this career path because there are not enough training programs at this time.

There is also a strong local interest in the profession. Since 2000, there have been 20 local undergraduate students who have worked with genetic counselors in the OSU Division of Human Genetics and subsequently entered a genetic counseling graduate program; 18 entered programs in other states. We have also provided numerous single--day job-shadowing experiences to interested students, and handled phone and email requests for information; however, this data has not been systematically collected. All individuals who have shadowed us in the Division of Human Genetics have been Ohio residents who were interested in gaining more information about the profession.

With regard to employment, the most recent genetic counselor workforce study found that the yearly total of new jobs for genetic counselors has increased steadily each year since 1995<sup>1</sup>. Using an assessment performed by Kaiser Permanente regarding its genetic workforce needs, researchers at Virginia Commonwealth University (in an initiative known as GeneSEAN) estimated that Virginia needed 106 genetic counselors to meet its needs based on population figures from the 2000 US Census.<sup>2</sup> Given that the population of Ohio is 11.5 million compared to the 7.8 million in Virginia, one can extrapolate that Ohio has an even greater need for genetic counselors. In addition, there is little doubt that within the coming decades, physicians and researchers will have a far better understanding of the genetic processes underlying many diseases and will place greater demands on genetic counselors. Looking ahead, due to the increasing population, the explosive growth in the number of diseases in which genetic factors are implicated and for which the new molecular technologies can be applied for diagnosis, treatment (including gene therapy) and prevention, and the advent of personalized medicine, the demand for genetic counselors in the workforce will rise even more rapidly. Graduates of The Ohio State University genetic counseling training program will help fill this need and will be uniquely desirable. The OSU-trained counselors who have a clinical doctorate will not only fulfill the clinical demand for patient care, they will also be qualified to hold faculty appointments at academic centers allowing them to be integral in the training of the next generation of genetic counselors and other healthcare providers in the application of genomic medicine.

### 5.0 Prospective enrollment

Our program is distinctive for its interdisciplinary educational approach to graduate training that will grow the pool of students and not detract from existing programs across the state or local partnership graduate programs. Students will benefit from our outstanding faculty who carry out cutting-edge research and provide a stimulating training environment.

Recruitment and admissions will be handled through the Office of Graduate Admissions and adhere to an application process with the following qualifications:

- Bachelor's Degree (or higher) in the majors of biology, chemistry, organic chemistry, biochemistry, genetics, any of the biological sciences or related areas or a combination of majors. Psychology and other majors will be considered if they have taken the required pre-medicine coursework. The minimum GPA required is a 3.0.
- GRE test scores or verbal, quantitative and analytical exams.
- All international applicants whose native language is not English will be required to take the Test of English as a Foreign Language (TOEFL) and have an official score report sent directly to the Associate Dean for Graduate Studies from Educational Testing Service. The recommended minimum TOEFL scores are 560 (written) or 220 (electronic) or 89 (internet based).

Evaluation of applicants for admission to the program will adhere to the principles of individualized holistic review. Therefore, each test score will be considered as but one metric in the admissions process, with no test score to be considered a sole criterion for admission into the program.

It is anticipated that the initial class size will be eight students with a gradual increase in numbers per year until a planned annual maximum enrollment of 12 is reached.

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<sup>1</sup> Cooksey, J. Genetic Counselor Workforce, February 2000. <http://www.uic.edu/sph/irhwc/gen%20counc%20wf%20jc.pdf>

<sup>2</sup> Virginia GeneSEAN, *Genetic Services and Education—An Assessment of Needs. A Comprehensive Assessment of Medical Genetic Services and Education in the Commonwealth of Virginia.* March 2006. Available at: <http://www.vahealth.org/gns/vgac.htm>



**6.0 Special efforts to enroll and retain underrepresented groups in the given discipline**

Special efforts will be made to recruit and retain underrepresented groups in the Genetic Counseling graduate degree program. The Institution has an Office for Diversity and Cultural Affairs at Ohio State's College of Medicine as well as the Office of Graduate Recruitment and Diversity Initiatives that are committed to enhancing the recruitment, admission and retention of students from underrepresented groups. This office currently offers services including professional and personal guidance, summer research opportunities, career development and pipeline programs, visiting student program, interaction with other minority students, and networking and mentorship opportunities with minority physicians throughout the Institution's affiliations. We anticipate working with our collaborating institutions to facilitate recruitment and retention of minority students. In particular, we are committed to the goals outlined in the Institution's diversity plan, entitled "Renewing the Covenant: Diversity Objectives and Strategies for 2007 to 2012". This includes working with the diversity office to send information to appropriate institutions and programs that target under-represented minorities. In addition, efforts will be made to recruit minority faculty, who can serve as role models for minority students.

**7.0 Availability and adequacy of the faculty and facilities available for the new degree program.**

The Institution has an excellent infrastructure to support the development of a quality Genetic Counseling graduate degree program. The Institution's faculty is willing to collaborate in instruction in genetics, counseling and clinical education. The Division of Human Genetics is currently located at the Polaris Innovation Center which has room for student carrels, lounges, a kitchenette, conference rooms, and excellent library facilities currently in place which is sufficient and would be available to students in this program. In addition, our clinical space has been built to accommodate clinical observation and recording to enhance real-time assessment of student clinical skills. Current strengths of the existing facility that would easily support the proposed program include excellent state-of-the-art classrooms, research labs, research equipment, and faculty offices.

The Prior Health Sciences library resources currently include many of the books, periodicals, journals, and other learning resources needed to support the teaching and scholarly activities of this proposed program. Many of the journal resources are available through the excellent infrastructure of the OhioLINK.

The majority of the faculty needed for this program is already in place (**Appendix J**). To be eligible for accreditation by the ABGC, a genetic counselor who is ABMG or ABGC-certified is required to have major responsibilities in the program. Dawn Allain, MS, CGC and Heather Hampel, MS, CGC are ABMG-certified genetic counselors with clinical, teaching and research experience who have been identified to function as the Co-Directors of the program. Approximately one half of this faculty position is dedicated to the Genetic Counseling Program and currently is supported by the College of Medicine. Other members of the current Division of Human Genetics faculty who are involved in teaching and research activities related to human genetics will be involved in teaching activities associated with the program as well as in student supervision of research projects. Specifically, Judith Westman, M.D., Kandamurugu Manickam, M.D., and Albert de la Chapelle, M.D., Ph.D., are well published and highly respected for their contributions to advances in medical genetics. They have also had extensive interaction and collaboration with the genetic counseling profession. All of these physician-scientists are board certified in clinical genetics. The recruiting efforts of the Division of Human Genetics will be focused towards further increasing the Division's expertise in the area of molecular genetics as applied to human disease. It is anticipated these new faculty members are likely to become involved in the genetic counseling graduate program.

The success of the program will be enhanced by the involvement of individuals from other departments as well as from outside OSU in teaching activities and supervision of students during their clinical internships. Numerous voluntary faculty members have agreed to participate in this program.

**8.0 Need for additional facilities and staff and the plans to meet this need**

Additional new facilities will not be required for the proposed program. The Genetic Counseling program will be staffed by faculty from the Division of Human Genetics in the Department of Internal Medicine, the Department of Pediatrics, and the Molecular Virology, Immunology and Medical Genetics Departments.

**9.0 Projected additional costs associated with the program and evidence of institutional commitment and capacity to meet these costs.**

We have developed five year budget projections with the assistance of Randy Wachtel, Senior Financial Analyst, in the OSU College of Medicine for the master's degree and clinical doctorate degree training programs (**Appendix K & L**). Both budgets include the standard state subsidy for graduate programs. In all scenarios, the program becomes self-sufficient by year 2. The on-line transition program for the existing 2500 master's degree trained genetic counselors to convert to a Clinical Doctorate degree has the potential to generate income however, it is difficult to estimate student numbers and tuition costs for an on-line distance program have yet to be delineated. Until year 2, the costs of the programs are being subsidized by the Arthur G. James Cancer Hospital and Richard J. Solove Research Institute and the College of Medicine.

## Appendix A: Practice-based Competencies

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**Practice-Based Competencies**

An entry-level genetic counselor must demonstrate the practice-based competencies listed in this document to successfully manage a genetic counseling case before, during, and after a clinic visit or session. Therefore, the didactic and clinical training components of a curriculum must support the development of competencies that are categorized into the following domains: (I) Communication Skills; (II) Critical-Thinking Skills; (III) Interpersonal, Counseling, and Psychosocial Assessment Skills; and (IV) Professional Ethics and Values. Some competencies may pertain to more than one domain. These domains represent practice areas that define the activities of a genetic counselor. The paragraph below each competency elaborates on skills necessary for achievement of the competency. These elaborations should assist program faculty in curriculum planning, development, and program and student evaluation.

**DOMAIN I: COMMUNICATION SKILLS****1. Can establish a mutually agreed upon genetic counseling agenda with the client**

The student is able to contract with a client or family throughout the relationship; explain the genetic counseling process; elicit expectations, perceptions and knowledge; and establish rapport through verbal and non-verbal interaction.

**2. Can elicit an appropriate and inclusive family history**

The student is able to construct a complete pedigree; demonstrate proficiency in the use of pedigree symbols, standard notation, and nomenclature; structure questioning for the individual case and probable diagnosis; use interviewing skills; facilitate recall for symptoms and pertinent history by pursuing a relevant path of inquiry; and in the course of this interaction, identify family dynamics, emotional responses, and other relevant information.

**3. Can elicit pertinent medical information including pregnancy, developmental, and medical histories**

The student is able to apply knowledge of the inheritance patterns, etiology, clinical features, and natural history of a variety of genetic disorders, birth defects, and other conditions; obtain appropriate medical histories; identify essential medical records and secure releases of medical information.

**4. Can elicit a social and psychosocial history**

The student is able to conduct a client or family interview that demonstrates an appreciation of family systems theory and dynamics. The student is able to listen effectively, identify potential strengths and weaknesses, and assess individual and family support systems and coping mechanisms.

**5. Can convey genetic, medical, and technical information including but not limited to diagnosis, etiology, natural history, prognosis, and treatment/management of genetic conditions and/or birth defects to clients with a variety of educational, socioeconomic, and ethno-cultural backgrounds**

The student is able to demonstrate knowledge of clinical genetics and relevant medical topics by effectively communicating this information in a given session.

MS, DGC, and transitional DGC in Genetic Counseling

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ABGC PRACTICE-BASED COMPETENCIES

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6. **Can explain the technical and medical aspects of diagnostic and screening methods and reproductive options including associated risks, benefits, and limitations**

The student is able to demonstrate knowledge of diagnostic and screening procedures and clearly communicate relevant information to clients. The student is able to facilitate the informed-consent process. The student is able to determine client comprehension and adjust counseling accordingly.

7. **Can understand, listen, communicate, and manage a genetic counseling case in a culturally responsive manner**

The student can care for clients using cultural self-awareness and familiarity with a variety of ethno-cultural issues, traditions, health beliefs, attitudes, lifestyles, and values.

8. **Can document and present case information clearly and concisely, both orally and in writing, as appropriate to the audience**

The student can present succinct and precise case-summary information to colleagues and other professionals. The student can write at an appropriate level for clients and professionals and produce written documentation within a reasonable time frame. The student can demonstrate respect for privacy and confidentiality of medical information.

9. **Can plan, organize, and conduct public and professional education programs on human genetics, patient care, and genetic counseling issues**

The student is able to identify educational needs and design programs for specific audiences, demonstrate public speaking skills, use visual aids, and identify and access supplemental educational materials.

## DOMAIN II: CRITICAL-THINKING SKILLS

10. **Can assess and calculate genetic and teratogenic risks**

The student is able to calculate risks based on pedigree analysis and knowledge of inheritance patterns, genetic epidemiologic data, and quantitative genetics principles.

11. **Can evaluate a social and psychosocial history**

The student demonstrates understanding of family and interpersonal dynamics and can recognize the impact of emotions on cognition and retention, as well as the need for intervention and referral.

12. **Can identify, synthesize, organize and summarize pertinent medical and genetic information for use in genetic counseling**

The student is able to use a variety of sources of information including client/family member(s), laboratory results, medical records, medical and genetic literature and computerized databases. The student is able to analyze and interpret information that provides the basis for differential diagnosis, risk assessment and genetic testing. The student is able to apply knowledge of the natural history and characteristics/symptoms of common genetic conditions.

13. **Can demonstrate successful case management skills**

The student is able to analyze and interpret medical, genetic and family data; to design, conduct, and periodically assess the case management plan; arrange for testing; and follow up with the client, laboratory, and other professionals. The student should demonstrate understanding of legal and ethical issues related to privacy and confidentiality in communications about clients.

MS, DGC, and transitional DGC in Genetic Counseling

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ABGC PRACTICE-BASED COMPETENCIES

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14. **Can assess client understanding and response to information and its implications to modify a counseling session as needed**

The student is able to respond to verbal and nonverbal cues and to structure and modify information presented to maximize comprehension by clients.

15. **Can identify and access local, regional, and national resources and services**

The student is familiar with local, regional, and national support groups and other resources, and can access and make referrals to other professionals and agencies.

16. **Can identify and access information resources pertinent to clinical genetics and counseling**

The student is able to demonstrate familiarity with the genetic, medical and social-science literature, and on-line databases. The student is able to review the literature and synthesize the information for a case in a critical and meaningful way.

DOMAIN III: INTERPERSONAL, COUNSELING, AND PSYCHOSOCIAL ASSESSMENT SKILLS

17. **Can establish rapport, identify major concerns, and respond to emerging issues of a client or family**

The student is able to display empathic listening and interviewing skills and address clients' concerns.

18. **Can elicit and interpret individual and family experiences, behaviors, emotions, perceptions, and attitudes that clarify beliefs and values**

The student is able to assess and interpret verbal and non-verbal cues and use this information in the genetic counseling session. The student is able to engage clients in an exploration of their responses to risks and options.

19. **Can use a range of interviewing techniques**

The student is able to identify and select from a variety of communication approaches throughout a counseling session.

20. **Can provide short-term, client-centered counseling and psychological support**

The student is able to assess clients' psychosocial needs and recognize psychopathology. The student can demonstrate knowledge of psychological defenses, family dynamics, family theory, crisis-intervention techniques, coping models, the grief process, and reactions to illness. The student can use open-ended questions; listen empathically; employ crisis intervention skills; and provide anticipatory guidance.

21. **Can promote client decision-making in an unbiased, non-coercive manner**

The student understands the philosophy of non-directiveness and is able to recognize his or her values and biases as they relate to genetic counseling issues. The student is able to recognize and respond to dynamics, such as counter transference, that may affect the counseling interaction.

22. **Can establish and maintain inter- and intradisciplinary professional relationships to function as part of a health care delivery team**

The student behaves professionally and understands the roles of other professionals with whom he or she interacts.

DOMAIN IV: PROFESSIONAL ETHICS AND VALUES

**23. Can act in accordance with the ethical, legal, and philosophical principles and values of the profession**

The student is able to recognize and respond to ethical and moral dilemmas arising in practice and seek assistance from experts in these areas. The student is able to identify factors that promote or hinder client autonomy. The student demonstrates an appreciation of the issues surrounding privacy, informed consent, confidentiality, real or potential discrimination, and other ethical/legal matters related to the exchange of genetic information.

**24. Can serve as an advocate for clients**

The student can understand clients' needs and perceptions and represent their interests in accessing services and responses from the medical and social service systems.

**25. Can introduce research options and issues to clients and families**

The student is able to critique and evaluate the risks, benefits, and limitations of client participation in research; access information on new research studies; present this information clearly and completely to clients; and promote an informed-consent process.

**26. Can recognize his or her own limitations in knowledge and capabilities regarding medical, psychosocial, and ethno-cultural issues and seek consultation or refer clients when needed**

The student demonstrates the ability to self-assess and to be self-critical. The student demonstrates the ability to respond to performance critique and integrates supervision feedback into his or her subsequent performance. The student is able to identify and obtain appropriate consultative assistance for self and clients.

**27. Can demonstrate initiative for continued professional growth**

The student displays a knowledge of current standards of practice and shows independent knowledge-seeking behavior and lifelong learning.

**Appendix B. ABGC Required Criteria****A. Curriculum****1. Description of the Program**

Educational experiences, including didactic courses, independent study, clinical training, and supplementary activities such as case conferences, seminars, grand rounds, and journal clubs must provide the graduates with the necessary knowledge and skills to perform, accurately and reliably, the functions delineated in the "Description of the Profession" on pages 1-2. The practice-based competencies listed below serve as guidelines for preparing entry-level genetic counselors. Each program will maintain its own curriculum and unique methods for supporting the development of these competencies.

**2. Instructional Content**

General content areas required to support the development of practice-based competencies in genetic counseling include the following.<sup>3</sup>

<sup>3</sup> Walker AP, Scott JA, Biesecker BB, Conover B, Blake W, Djurdjinovic L (1990) Report of the 1989 Asilomar meeting on education in genetic counseling. *Am J Hum Genet* 46:1223-1230.

**a. Principles of Human Genetics**

- (1) Mendelian and Non-Mendelian Inheritance
- (2) Population and Quantitative Genetics
- (3) Basis of Human Variation and Susceptibility
- (4) Family History and Pedigree Analysis
- (5) Normal Development/Abnormal Development
- (6) Human Reproduction

**b. Applicability of Related Sciences to Medical Genetics**

- (1) Cytogenetics
- (2) Biochemical Genetics
- (3) Molecular Genetics
- (4) Embryology/Developmental Genetics
- (5) Teratology
- (6) Cancer Genetics

**c. Principles and Practice of Clinical/Medical Genetics**

- (1) Clinical features and natural history of a broad range of genetic diseases, complex common disorders and syndromes of unknown etiology.
- (2) Understanding the diagnostic process, including dysmorphology, syndromology, and physical assessment.
- (3) Understanding genetic testing, including cytogenetic, molecular, biochemical, prenatal diagnosis, pre-implantation diagnosis and assisted reproductive testing.
- (4) Utilizing risk assessment skills.
- (5) Use of genetics literature, databases, and computerized tools.

**d. Psychosocial Content**

- (1) Theories of Counseling
- (2) Interviewing Techniques
- (3) Individual Psychosocial Development

- (4) Family Dynamics
- (5) Dynamics of Grief and Bereavement
- (6) Multicultural Sensitivity and Competency
- (7) Crisis Intervention

**e. Social, Ethical, and Legal Issues as They Pertain to the Delivery of Genetic Services**

**f. Health Care Delivery Systems and Principles of Public Health**

- (1) Health and Social Policy
- (2) Community, Regional, and National Resources
- (3) Financial/Reimbursement Issues
- (4) Screening
- (5) Genetics as a Component of Public Health Services

**g. Teaching Skills**

Preparation to identify and address the genetics educational needs of clients, community and lay groups, students, and health and human service professionals.

**h. Research Methods**

Familiarity with clinical and laboratory research methodologies and protocols using both quantitative and qualitative methods.

**3. Clinical Training**

- a. **Description:** Clinical training must provide students with opportunities to have firsthand experience with individuals and families affected by a broad range of genetic disorders. These clinical experiences must expose trainees to the natural history and management of common genetic conditions and birth defects and to the relevant psychosocial issues. Students must have the opportunity to develop counseling skills in a variety of clinical settings when genetic services are provided. There must be a sufficient number and variety of clinical activities to ensure that all enrolled students will receive adequate supervised counseling experience. The program must foster and support student independence while providing guidance and the availability of supervisors to discuss student performance with students and Program Directors. In addition, to prepare students to achieve certification successfully, clinical training should encompass the relevant areas in the ABGC Certification Examination content outline. The program must provide each student with supervision by certified genetics professionals and the opportunity for involvement in a variety of cases. The program accreditation process includes approval of clinical training sites where students can obtain clinical experience. The criteria for an approved site include supervision by a certified genetics professional and meaningful student involvement. The ABGC encourages programs to use a variety of clinical training opportunities to enhance the richness of the training experience. Therefore, programs may choose to include clinical training sites that do not qualify as approved sites because they enhance the breadth and depth of clinical experience. As of January 2008, the Logbook of Supervised Clinical Experience will no longer be required for active candidate status. It is now the responsibility of the program to determine that a minimum of 50 cases demonstrating varied experience among patient types and student roles and responsibilities have been seen by the student. Clinical cases should illustrate a diverse and well-rounded training that prepares an individual to provide genetic counseling services in a range of settings and that allows him/her to respond effectively to a spectrum of genetic counseling scenarios.
- b. **Requirements:** A minimum of 50 “core” cases must be face-to-face and involve active trainee participation. Clinical training should focus on the development of the fundamental 12 roles and how they can be applied to a wide variety of clinical settings and service delivery models. To be



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considered a case, participation in at least 3 of the following management and counseling roles during the session must be demonstrated by the trainee:

- case preparation
- contracting
- eliciting of medical history
- pedigree documentation
- risk assessment
- discussion of inheritance/risk counseling
- discussion of diagnosis and natural history
- discussion of testing options/results
- psychosocial assessment
- psychosocial support/counseling
- resource identification/referral
- follow-up

These 50 core cases must be in approved ABGC sites and must be supervised by an ABMG/CCMG certified geneticist and/or ABGC/ABMG certified genetic counselor. Cases must indicate a variety of exposure to genetic issues throughout the life cycle. Therefore, cases should be varied by:

- preconception counseling
- prenatal counseling (routine, abnormal US, maternal disease, teratogen, etc.)
- pediatric genetics (general, disease-specific)
- adult genetics (cancer, cardiovascular, neurogenetic, etc)
- individuals affected with genetic conditions
- family sessions, i.e., sessions in which multiple family members are evaluated and/or counseled (note: these sessions may only count as one (1) case)

To prepare students best for the workforce, clinical training should reflect current trends in the workplace. Demographics from the 2008 ABGC practice analysis survey revealed that the approximate proportion of genetic counselors practicing in various roles is as follows: 40% prenatal, 30% cancer, 25% pediatrics, and 5% adult. Using this information as a guideline, it is the responsibility of the Program Director to ensure that a trainee is exposed to a wide breadth of clinical cases in approximately a similar ratio. It is not appropriate for a student to have an overwhelming majority of cases in any one practice area.

As genetic counselors expand beyond the traditional settings, it is of great benefit for trainees to be exposed to additional clinical opportunities. In order to enhance a trainee's clinical training, we encourage programs to augment the core 50 cases with the following types of experiences:

- non-face-to-face cases (e.g., phone genetic counseling and telemedicine cases)
- laboratory experience
- research/family studies/registries
- clinical experiences supervised by non-genetic providers (physicians, nurse practitioners, etc.)
- cases seen with non-ABGC/ABMG certified genetic professionals
- foreign clinical experiences
- cases seen in public health settings

When utilizing these types of clinical training opportunities, it is important that programs assess and document the credentials and qualifications of those who will be supervising the students, develop clear objectives and outcome measures for student experiences, and monitor the students' activities during the rotation.

**Appendix C: OSU Genetic Counseling Master's Degree Graduate Program Ability-Based Outcomes<sup>3</sup>****OSU Genetic Counseling Master's Degree Graduate Program Ability-Based Outcomes****I. CASE PREPARATION AND HISTORY****A. CASE PREPARATORY WORK**

1. Evaluate referral information (e.g. appropriateness, urgency, need to include relevant family members, need for consultation with other experts/interpreters)
  - a. appropriateness
  - b. urgency
  - c. need for consultation with other experts (e.g., cardiologist, dermatologist, etc.)
  - d. need to obtain additional information
  - e. need to include relevant family members in the evaluation
  - f. need to include interpreters
2. Evaluate medical records
3. Analyze and interpret literature and computerized databases
4. Develop preliminary risk assessment and/or differential diagnosis
5. Identify available genetic testing
6. Arrange preliminary diagnostic tests

**B. CONTRACTING**

1. Establish rapport through verbal and non-verbal interaction or through interpreters
2. Establish a mutually agreed upon genetic counseling agenda with the client
3. Elicit client concerns, expectations, and perceptions
4. Assess client knowledge-base and health literacy
5. Assess client's ethno-cultural background
6. Outline the genetic evaluation process
7. Decrease anxiety for concerns articulated by the client (e.g. on-going emotional distress, stress such as precipitated by the referral, abnormal test results, & perceived goals of genetic testing)
  - a. on-going emotional distress
  - b. stress precipitated by the referral
  - c. abnormal test results
  - d. perceived goals of genetic testing

**C. MEDICAL HISTORY**

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<sup>3</sup> Hampel H, et al. Genetic counseling practice analysis. J Genet Couns. 2009 Jun;18(3):205-16.

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1. Elicit/Review General History (e.g. health problems and age of onset, hospitalizations, surgeries, medications, physical measurements).
2. Elicit/Review Pregnancy History (e.g. LMP, maternal age at delivery, serum screening, ultrasound findings, number and outcome of pregnancies, maternal illnesses/conditions).
3. Elicit/Review Gynecologic History (e.g. menarche, menopause, HRT use, infertility)
4. Elicit/review Developmental History (e.g. milestones, regression, interventions)
5. Elicit/Review Cancer History (e.g. date of/age at diagnosis, anatomic location, pathology, treatment, screening/surveillance).
6. Elicit/Review Exposure History (e.g. type, dose, duration, timing)

**D. PEDIGREE AND FAMILY HISTORY**

1. Tailor questioning for the individual case
2. Elicit history
3. Facilitate recall (e.g., symptoms, diagnoses, treatments)
4. Document ethnicity and consanguinity
5. Construct a complete pedigree using standardized pedigree nomenclature
6. Assess the psychosocial relationships (e.g. family dynamics and emotional responses)
7. Identify any medical diagnoses requiring confirmation

**II. RISK ASSESSMENT AND DIAGNOSIS****A. RISK ASSESSMENT**

1. Analyze Pedigree
  - a. Assess etiology (e.g., hereditary, familial, sporadic)
  - b. Determine mode of inheritance
  - c. Identify ethnicity and consanguinity based risks
2. Integrate medical, laboratory, and genetic information
3. Modify differential diagnosis
4. Perform Quantitative Risk Assessment
5. Select risk assessment model based on client data (e.g., empiric data, Bayesian analysis, Gail model)
6. Calculate risk (e.g., personal health, reproductive, susceptibility)

**B. DIAGNOSIS AND NATURAL HISTORY DISCUSSION**

1. Formulate counseling agenda
  2. Integrate natural history, characteristics, and symptoms of working diagnosis
  3. Incorporate client specific findings and needs
  4. Develop management plan
  5. Convey information about the following:
    - a. diagnosis/indication
    - b. etiology
    - c. natural history
    - d. variable expressivity
    - e. penetrance
    - f. prognosis
    - g. prevention
    - h. treatment
    - i. management
-

6. Tailor management plan according to client circumstances throughout the session

### **C. INHERITANCE/RISK COUNSELING**

1. Educate clients about
  - a. basic genetic concepts
  - b. modes of inheritance
2. Counsel clients about the following
  - a. genetic risks (e.g., carrier, reproductive, predictive)
  - b. risk modifiers
  - c. disease risks
3. Assess client risk perception and address misconceptions

## **III. TESTING**

### **A. TESTING OPTIONS**

1. Explain testing options (pre- and post-natal)
  - a. Diagnostic
  - b. Screening
  - c. Predictive (e.g., pre-symptomatic, susceptibility)
  - d. Research
2. Identify most informative persons for testing
3. Explain possible testing outcomes and implications and turn around time
4. Discuss potential risks, benefits, and limitations of testing
5. Discuss financial/insurance concerns
  - a. costs of genetic services
  - b. benefits, risks and limitations of using health insurance for payment of genetic services (e.g. coverage issues, GINA).
6. Help client anticipate the range of emotional effects client and/or family members may experience
7. Facilitate decision making regarding genetic test
8. Facilitate genetic testing
9. Select the test
10. Select laboratory for testing
11. Discuss test with laboratory
12. Identify specimens for testing
13. Facilitate informed consent

### **B. TEST INTERPRETATION AND RESULTS DISCUSSION**

1. Interpret clinical significance of test results depending on situational variables (e.g., methodology, clinical context, family history, paternity, SNP odds ratios) and literature/resources
  2. Discuss results to include
    - a. Sensitivity and specificity
    - b. Implications of positive, negative, and/or ambiguous results
  3. Recommend additional testing
-

**IV. PSYCHOSOCIAL ASSESSMENT AND SUPPORT****A. PSYCHOSOCIAL ASSESSMENT**

1. Recognize factors that may affect the counseling interaction
2. Assess client and/or family
  - a. Emotional (e.g., grief, guilt, anger, depression)
  - b. Support systems
  - c. Defense mechanisms and coping strategies
  - d. Cultural/religious beliefs and values
3. Evaluate social and psychological histories
4. Assess clients' psychosocial needs and recognize need for referral
5. Assess client understanding and response throughout the session
  1. Modify counseling based on client's understanding and response throughout the session

**B. PSYCHOSOCIAL SUPPORT/COUNSELING**

1. Address client emotion and/or behavior using:
  - a. primary empathic responses (e.g., paraphrasing, summarizing, content and feeling reflections)
  - b. advanced empathic response
  - c. direct statements
  - d. questions
  - e. emotion-specific techniques (e.g., anger, grief, bereavement, anxiety, guilt, shame)
2. Utilize reframing to broaden counselees' perceptions
3. Employ anticipatory guidance
4. Utilize cross-cultural genetic counseling techniques
5. Promote competence and autonomy with direct, supportive statements
6. Address family communication issues
7. Facilitate client decision making
8. Promote client/family coping and adjustment

**C. RESOURCES AND FOLLOW-UP**

1. Communicate follow-up plan
2. Present case information (e.g., to clients, to healthcare providers, to insurers)
3. Deliver oral case summary
4. Compose written case summary
5. Adhere to the medical and legal requirements of case documentation
6. Advocate for clients in medical and non-medical settings
7. Evaluate resources and services
  - a. support groups
  - b. community agencies
  - c. other medical experts
  - d. client education materials
8. Refer to other professionals and agencies

## **V. ETHICAL/LEGAL/PROFESSIONALISM**

1. Comply with privacy and confidentiality regulations regarding personal health information
2. Inform clients of potential limitations to maintaining privacy and confidentiality of genetic information
3. Comply with National Society of Genetic Counselors Code of Ethics
4. Employ ethical principles to address clinical dilemmas
5. Seek consultation with experts (e.g., hospital ethics board, NSGC Ethics Committee)
6. Practice in accordance with published position statements (e.g., testing of minors, duty to re-contact) - Recognizing discrepancies, critical thinking of contradictory statements, akin to this under literature review session.
7. Practice in accordance with published practice guidelines
8. Develop professionalism skills (e.g. integrity, problem solving, communication, choices, goal setting, conflict resolution)

## **VI. RESEARCH/STUDY COORDINATION**

1. Comply with federal regulations for protection of human subjects in research
2. Maintain a database
3. Design research study
4. Interpret data analyses
5. Submit abstracts to scientific meetings

## **VII. EDUCATION**

1. Conduct effective presentations
    - a. Develop public speaking skills
    - b. Tailor talk to the audience
    - c. Develop effective audiovisual aids
    - d. Develop learning objectives
  2. Develop education materials
-

**Appendix D Additional Ability-based Outcomes for OSU Genetic Counseling Clinical Doctorate and Transitional Clinical Doctorate Graduate Program**

**OSU Genetic Counseling Clinical Doctorate Graduate Program Additional Ability-Based Outcomes**

**I. POLICY**

1. Diagnose genetic health problems in the community
2. Develop policies and plans that support individual community genetic health efforts
3. Understand the role of government in regulating technological development
4. Apply the legal doctrine of privacy, informed consent, and professional liability

**II. ADMINISTRATION**

1. Utilize negotiation skills
2. Develop mechanisms for billing in alignment with current billing and reimbursement regulations
3. Conduct needs assessment for services
4. Develop and implement methods for practice improvement (e.g. quality assurance)
5. Develop and implement marketing plans
6. Create project implementation strategies
7. Facilitate staff and personal professional development (e.g. time management, training and coaching, motivation).
8. Develop leadership skills

**III. EDUCATION**

1. Develop learner-centered educational programming
2. Utilize an array of teaching modalities
3. Employ a variety of teaching styles
4. Utilize formative and summative assessment
5. Develop coordinate courses or conferences
6. Provide effective feedback
7. Develop clinical assessment tools

**IV. RESEARCH/STUDY COORDINATION**

1. Develop protocol
2. Obtain protocol approval, continuing review, and amendments from the IRB
3. Coordinate recruitment/accrual process
4. Disseminate research findings (e.g. publications, presentations at scientific meetings)
5. Understand the components of a grant application
6. Identify appropriate funding sources for research projects

**V. PSYCHOSOCIAL COUNSELING**

1. Conduct an interview that demonstrates and appreciation of counseling theories



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2. Address client emotion and/or behavior using: confrontation
3. Address client emotion and/or behavior using: crisis-intervention techniques
4. Employ modeling
5. Employ anticipatory guidance

**Appendix E Master's Degree Course List**Semester I Fall

INTMED7000	Foundations in Medicine I – (3 credits)
INTMED7020	Foundations in Genetics I – (3 credits)
INTMED7040	Foundations in Genetic Counseling I – (3 credits)
INTMED7060	Biostatistics ( <i>alternates yearly with Epidemiology</i> ) - (2 credits)
INTMED7070	Epidemiology ( <i>alternates yearly with Biostatistics</i> ) - (2 credits – 1 day/week)
INTMED7189	Clinical Practicum I – (3 credits)

Semester II Spring

INTMED7010	Foundations in Medicine II – (3 credits)
INTMED7030	Foundations in Genetics II – (3 credits)
INTMED7050	Foundations in Genetic Counseling II – (3 credits)
INTMED7998	Research Methods – (2 credits)
INTMED7189.1	Clinical Practicum II – (3 credits)

Semester III Summer

INTMED7189.2	Summer Clinical Practicum I (4 credits)
INTMED7189.3	Summer Clinical Practicum II (4 credits)
INTMED7999	Thesis I (2 credits)

Semester IV Fall

INTMED7080	Advanced Genetic Counseling I – (3 credits)
INTMED7100	Advanced Clinical skills I – (3 credits)
INTMED7060	Biostatistics ( <i>alternates yearly with Epidemiology</i> ) - (2 credits)
INTMED7070	Epidemiology ( <i>alternates yearly with Biostatistics</i> ) - (2 credits)
INTMED7189.4	Clinical Practicum III (4 credits)
INTMED7999	Thesis II (4 credits)

Semester V Spring

INTMED7090	Advanced Genetic Counseling II – (3 credits)
INTMED7200	Advanced Clinical skills II – (3 credits)
INTMED7300	Public Health Genetics - (2 credits)
INTMED7189.5	Clinical Practicum IV - (4 credits)
INTMED7999	Thesis III (Thesis Dissertation/Defense) – (2 credits)

**Appendix F Clinical Doctorate Degree Course List**Semester I Fall

INTMED7000	Foundations in Medicine I – (3 credits)
INTMED7020	Foundations in Genetics I – (3 credits)
INTMED7040	Foundations in Genetic Counseling I – (3 credits)
INTMED7060	Biostatistics ( <i>alternates yearly with Epidemiology</i> ) - (2 credits)
INTMED7070	Epidemiology ( <i>alternates yearly with Biostatistics</i> ) - (2 credits – 1 day/week)
INTMED7189	Clinical Practicum I – (3 credits)

Semester II Spring

INTMED7010	Foundations in Medicine II – (3 credits)
INTMED7030	Foundations in Genetics II – (3 credits)
INTMED7050	Foundations in Genetic Counseling II – (3 credits)
INTMED7780	Research Methods – (2 credits)
INTMED7189.1	Clinical Practicum II – (3 credits)

Semester III Summer

INTMED7189.2	Summer Clinical Practicum I (4 credits)
INTMED7189.3	Summer Clinical Practicum II (4 credits)
INTMED7999	Thesis I (2 credits)

Semester IV Fall

INTMED7080	Advanced Genetic Counseling I – (3 credits)
INTMED7100	Advanced Clinical skills I – (3 credits)
INTMED7060	Biostatistics ( <i>alternates yearly with Epidemiology</i> ) - (2 credits)
INTMED7070	Epidemiology ( <i>alternates yearly with Biostatistics</i> ) - (2 credits)
INTMED7189.4	Clinical Practicum III (4 credits)
INTMED7999	Thesis II (4 credits)

Semester V Spring

INTMED7090	Advanced Genetic Counseling II – (3 credits)
INTMED7200	Advanced Clinical skills II – (3 credits)
INTMED7300	Public Health Genetics - (2 credits)
INTMED7189.5	Clinical Practicum IV - (4 credits)
INTMED7999	Thesis III (2 credits)

Semester VI – Summer

INTMED8999	Thesis IV – (4 credits)
INTMED8189	Summer Clinical Practicum III– (4 credits)

Semester VII – Fall

INTMED8189.1	Clinical Practicum V – (4 credits)
INTMED8999	Thesis V: Thesis Dissertation/Defense – (2 credits)
INTMED8000	Leadership skills/Professional Development – (2 credits)
INTMED8189.2	Clinical Practicum VI - (4 credits)

Semester VIII – Spring

INTMED8010	The Business of Genetics - (2 credits)
INTMED8020	Genetics, Law, and Social Policy – (2 credits)

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INTMED8189.3	Clinical Practicum VII – (4 credits)
INTMED8030	Learning Styles/Teaching Skills - (2 credits)
INTMED8040	Supervision/Feedback Skills - (2 credits)

## **Appendix G Transitional Clinical Doctorate Degree Course List**

### **Semester I**

INTMED8050	Current Technologies – (2 credits)
INTMED7300	Public Health Genetics - (2 credits)
INTMED8000	Leadership skills/Professional Development (2 credits)
INTMED8070	Master Counseling Skills I - (4 credits)

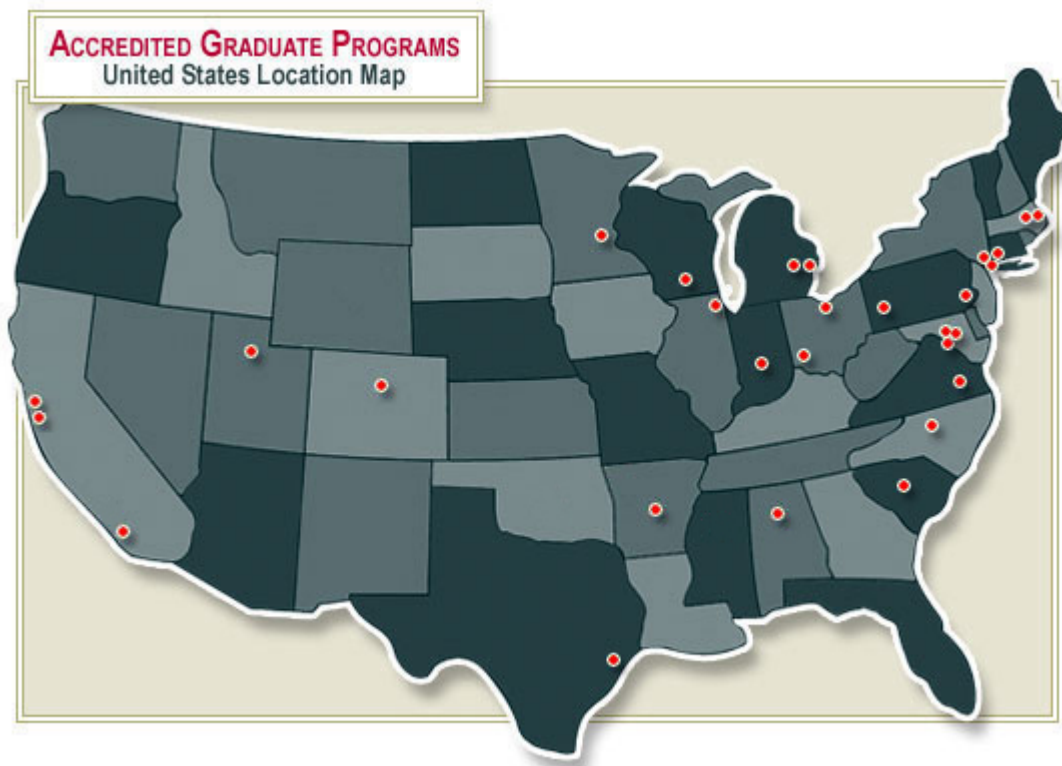
### **Semester II**

INTMED8010	The Business of Genetics - (2 credits)
INTMED8020	Genetics, Law, and Social Policy – (2 credits)
INTMED8090	Emerging Clinical Areas - (2 credits)
INTMED8080	Master Counseling Skills II - (4 credits)

### **Semester III**

INTMED8030	Learning styles/Teaching - (3 credits)
INTMED8040	Supervision/Feedback - (3 credits)
INTMED8100	Advanced Epidemiology - (4 credits)

**Appendix H: ABGC-accredited Genetic Counseling Graduate Programs**

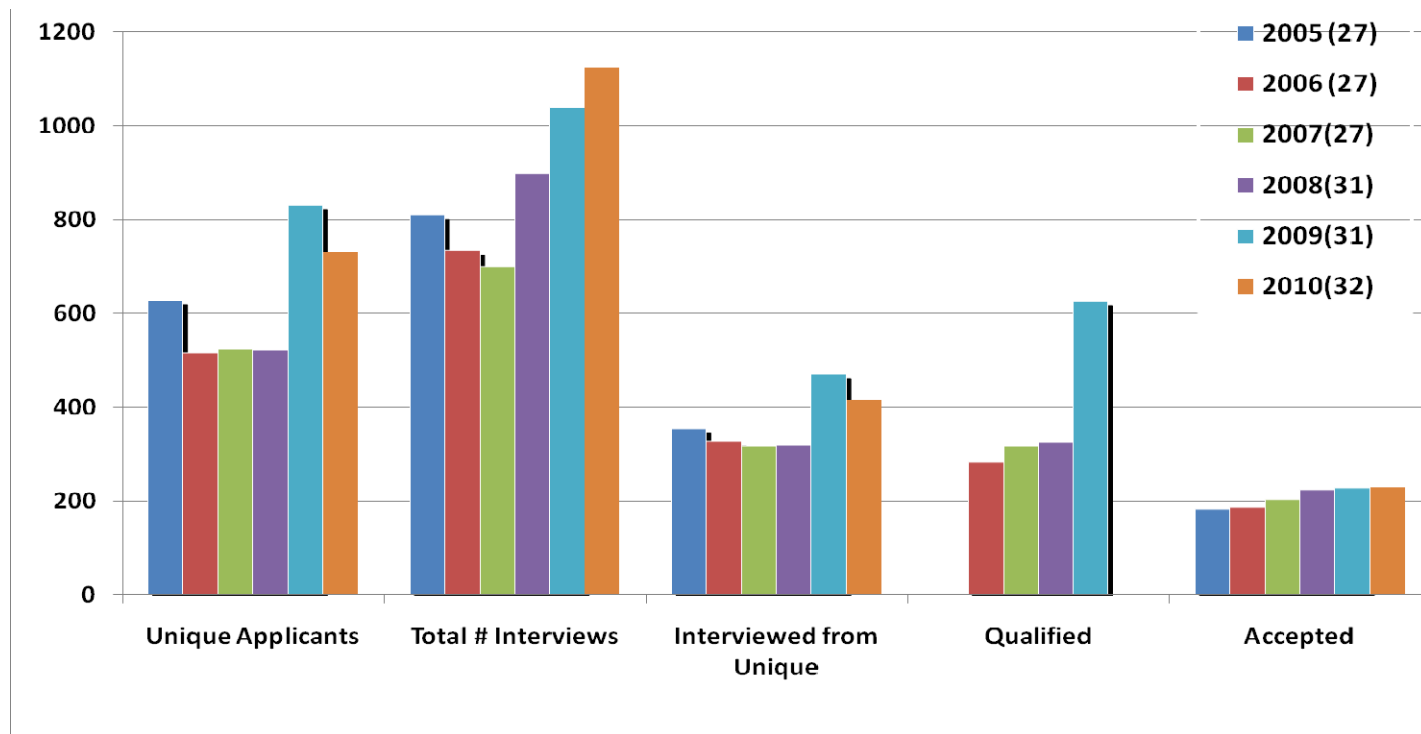


State	Program	Accreditation Status
AL	University of Alabama at Birmingham <a href="#">Master of Science in Genetic Counseling</a>	Provisional
AR	University of Arkansas Medical Sciences <a href="#">Master of Science in Genetic Counseling</a>	Full
CA	University of California , Irvine <a href="#">Master of Science in Genetic Counseling Program</a>	Full
CA	California State University -Stanislaus(SF Bay Area) <a href="#">Master of Science in Genetic Counseling</a>	Provisional
CA	Stanford University, Stanford <a href="#">Master of Science in Genetic Counseling</a>	Provisional
CO	University of Colorado Denver <a href="#">Graduate Program in Genetic Counseling</a>	Full
DC	Howard University <a href="#">Master of Science in Genetic Counseling</a>	Full
IL	Northwestern University Medical School <a href="#">Graduate Program in Genetic Counseling</a>	Full
IN	Indiana University Medical Center <a href="#">Program in Genetic Counseling</a>	Full

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MD	Johns Hopkins University/National Human Genome Research Institute <a href="#"><u>Genetic Counseling Training Program</u></a>	Full
MD	University of Maryland School of Medicine <a href="#"><u>Master's degree in Genetic Counseling</u></a>	Full
MA	Boston University School of Medicine <a href="#"><u>Masters in Genetic Counseling Training Program</u></a>	Full
MA	Brandeis University <a href="#"><u>Master of Science Program in Genetic Counseling</u></a>	Full
MI	University of Michigan <a href="#"><u>Genetic Counseling Program</u></a>	Full
MI	Wayne State University <a href="#"><u>Genetic Counseling Graduate Program</u></a>	Full
MN	University of Minnesota <a href="#"><u>Graduate Program of Study in Genetic Counseling</u></a>	Full
NY	Long Island University - CW Post <a href="#"><u>Clinical Genetics Program</u></a>	Provisional
NY	Mt. Sinai School of Medicine <a href="#"><u>Master of Science Program in Genetic Counseling</u></a>	Full
NY	Sarah Lawrence College <a href="#"><u>Joan H. Marks Graduate Program in Human Genetics</u></a>	Full
NC	University of North Carolina at Greensboro <a href="#"><u>Master of Science Program in Genetic Counseling</u></a>	Full
OH	Case Western Reserve University <a href="#"><u>Genetic Counseling Training Program</u></a>	Full
OH	University of Cincinnati College of Allied Health Sciences <a href="#"><u>Genetic Counseling Program</u></a>	Full
PA	Arcadia University <a href="#"><u>Genetic Counseling Program</u></a>	Full
PA	University of Pittsburgh <a href="#"><u>Genetic Counseling Program</u></a>	Full
SC	University of South Carolina <a href="#"><u>Genetic Counseling Program</u></a>	Full
TX	University of Texas Graduate School of Biomedical Sciences at Houston <a href="#"><u>Program in Genetic Counseling</u></a>	Full
UT	University of Utah <a href="#"><u>Graduate Program in Genetic Counseling</u></a>	Full
WI	University of Wisconsin-Madison <a href="#"><u>Genetic Counseling Master's Program</u></a>	Full
VA	Medical College of Virginia / Virginia Commonwealth University <a href="#"><u>Genetic Counseling Program</u></a>	Full

**Appendix I: Genetic Counseling Graduate Program Applicant Trends 2005-2010**



Numbers in parentheses indicate the number of training programs accepting students for that academic year.



## Appendix J: Faculty

### OSU Division of Human Genetics, Department of Internal Medicine faculty

- Dawn Allain, MS, CGC, Co-Director, Genetic Counseling graduate program
- Heather Hampel, MS, CGC, Co-Director, Genetic Counseling graduate program
- Leigha Senter-Jamieson, MS, CGC, Director of Clinical Supervision, Genetic Counseling graduate program
- Kandamurugu Manickam, MD, Medical Director, Genetic Counseling graduate program
- Judith Westman, MD, Clinical Director, Division of Human Genetics
- Doreen Agnese, MD, Surgical Oncologist, Cancer Geneticist
- Rebecca Nagy, MS, CGC, Genetic Counselor
- Robert Pilarski, MS, CGC, LSW, Genetic Counselor, Licensed Social Worker
- Kate Shane, MS, CGC, Genetic Counselor
- Kevin Sweet, MS, CGC, Genetic Counselor
- Amy Sturm, MS, CGC, Genetic Counselor

### OSU Department of Neurology faculty

- Allison Seward, MS, CGC, Genetic Counselor

### OSU Department of Pathology faculty

- Thomas Prior, MD, PhD, Director, Division of Molecular Pathology
- Nyla Heerema, PhD, Director, Cytogenetics

### OSU Maternal Fetal Medicine, Department of Obstetrics and Gynecology

- Britton Rink, MD, MS, Perinatologist, Medical Geneticist
- Laura Montgomery, MS, CGC, Genetic Counselor
- Betsy Schmalz, MS, CGC, Genetic Counselor
- Katie Ziegler, MS, CGC, Genetic Counselor

### Department of Pediatrics faculty (located at Nationwide Children's Hospital)

- Dennis Bartholomew, MD, Chief of Molecular and Human Genetics
- Joan Atkin, MD, Medical Geneticist
- Scott Hickey, MD, Medical Geneticist
- Kim McBride, MD, MS, Medical Geneticist
- Annemarie Sommer, MD, Medical Geneticist
- Sawona Biswas, MS, CGC, Genetic Counselor
- Matthew Pastore, MS, CGC, Genetic Counselor
- Shannon Garner, MS, CGC, Genetic Counselor
- Sara Fitzgerald-Butt, MS, CGC, Genetic Counselor
- Emily Hansen, MS, CGC, Genetic Counselor
- Theresa Michalic, MS, CGC, Genetic Counselor
- Paula Pietryga, MS, CGC, Genetic Counselor
- Karen Siklosi, MS, CGC, Genetic Counselor
- Elizabeth Varga, MS, CGC, Genetic Counselor

### Department of Laboratory Medicine faculty (located at Nationwide Children's Hospital)

- Julie Gastier-Foster, PhD, Director, Cytogenetics & Molecular Laboratory

MS, DGC, and transitional DGC in Genetic Counseling

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- Caroline Astbury, PhD, Associate Director, Cytogenetics & Molecular Genetics Laboratory
- Rob Pyatt, PhD, Assistant Director, Cytogenetics & Molecular Genetics Laboratory
- Shalini Reshimi, PhD, Assistant Director, Cytogenetics & Molecular Genetics Laboratory
- Devon Lamb Thrush, MS, CGC, Genetic Counselor
- Sayaka Hashimoto, MS, CGC, Genetic Counselor

**Clinical practicum sites**

- Nationwide Children's Hospital
- The Ohio State University
  - Division of Human Genetics
  - Maternal Fetal Medicine
  - Department of Neurology
  - Center for Personalized Health Care
- OhioHealth
- Mount Carmel Health System
- Children's Medical Center of Dayton
- Miami Valley Hospital
- Akron Children's Hospital
- University of Toledo Medical Center

**Appendix K: Master's Program Budget**

**Marginal Gain scenario of starting new Masters Program**

	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Students ‡	8	16	16	16	16	16	16
Credit Hours per Stdt ▲	40	35	35	35	35	35	35
Total Hours	320	560	560	560	560	560	560
Prior 2 year Avg Hours		160	440	560	560	560	560
Out of state Tuition	\$30,000	\$31,500	\$33,075	\$34,729	\$36,465	\$38,288	\$40,203
Tuition Per Student (5% inc)	\$20,000	\$21,000	\$22,050	\$23,153	\$24,310	\$25,526	\$26,802
Grad Rate	\$15,120	\$15,876	\$16,670	\$17,503	\$18,378	\$19,297	\$20,262
Tuition Generated	\$180,000	\$357,000	\$374,850	\$393,593	\$413,272	\$433,936	\$455,633
Marginal Revenue	\$120,960	\$297,960	\$17,850	\$18,743	\$19,680	\$20,664	\$21,697
Tax on Marginal Revenue	-\$29,030	-\$71,510	-\$4,284	-\$4,498	-\$4,723	-\$4,959	-\$5,207
Marginal Revenue from Fees	\$91,930	\$226,450	\$13,566	\$14,244	\$14,957	\$15,704	\$16,490
Fees above Grad Rate (Untaxed)	\$59,040						
<b>Subsidy Revenue</b>							
Effective Rate	237.51	242.94	248.49	254.17	259.99	265.93	272.01
Total Subsidy Generated		\$38,870	\$109,337	\$142,338	\$145,592	\$148,921	\$152,326
Marginal Subsidy		\$38,870	\$70,467	\$33,001	\$3,254	\$3,329	\$3,405
Tax on Marginal Subsidy		-\$9,329	-\$16,912	-\$7,920	-\$781	-\$799	-\$817
Marginal Revenue from Subsidy		\$29,541	\$53,555	\$25,081	\$2,473	\$2,530	\$2,588
Masters II - most common subsidy within COM.							
<b>Student Services Assessment (SSA)</b>							
Combined Pools	243.94	249.52	255.22	261.06	267.03	273.13	279.38
Full Assessment		-\$39,923	-\$112,299	-\$146,193	-\$149,536	-\$152,954	-\$156,451
Same increase used as Subs Revenue. FY08-FY09 increase not relevant because of policy change							
Summary of Marginal Revenue	FY13	FY14	FY15	FY16	FY17	FY18	FY19

MS, DGC, and transitional DGC in Genetic Counseling

Marginal Fees		\$297,960	\$17,850	\$18,743	\$19,680	\$20,664	\$21,697
Marginal Subsidy		\$38,870	\$70,467	\$33,001	\$3,254	\$3,329	\$3,405
Tax on Marginal Revenue		-\$80,839	-\$21,196	-\$12,418	-\$5,504	-\$5,758	-\$6,024
Marginal SSA		-\$39,923	-\$72,376	-\$33,895	-\$3,342	-\$3,419	-\$3,497
<b>Total PBA Generation</b>	<b>\$59,040</b>	<b>\$216,068</b>	<b>-\$5,255</b>	<b>\$5,430</b>	<b>\$14,087</b>	<b>\$14,815</b>	<b>\$15,580</b>
<b>Cash Reconciliation at Yr End</b>	<b>\$91,930</b>						
<b>PBA Earnings By Program</b>	<b>\$59,040</b>	<b>\$275,108</b>	<b>\$269,853</b>	<b>\$275,283</b>	<b>\$289,371</b>	<b>\$304,186</b>	<b>\$319,766</b>
<b>Expenses</b>							
Personnel	-\$223,245	-\$234,789	-\$241,833	-\$249,088	-\$256,560	-\$264,257	
Start-up/Infrastructure	-\$6,000	-\$10,000	-\$10,000	-\$10,000	-\$10,000	-\$10,000	
<b>Total Income</b>	<b>-\$78,275</b>	<b>\$30,319</b>	<b>\$18,021</b>	<b>\$16,196</b>	<b>\$22,811</b>	<b>\$29,929</b>	<b>\$319,766</b>

‡ Assuming program starts and enrolls 8 students in FY12 for 10 hours per quarter Additional 8 students start in FY13.

▲ First year students (40 hours) second year students (30 hours)

Assumes 2 out of state students in each new class per year

Exhibit shows PBA increases only. GFSA (Cash) margin would be settled in first year of program

**Appendix L: Clinical Doctorate Program Budget**

**Marginal Gain scenario of starting new Clinical Doctorate Program**

	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Students	8	16	24	24	24	24	24
Credit Hours per Std $\blacktriangle$	53	48	40	40	40	40	40
Total Hours	424	768	960	960	960	960	960
Prior 2 year Avg Hours		212	596	864	960	960	960
Out of state Tuition	30,000	31,500	33,075	34,729	36,465	38,288	40,203
Tuition Per Student (5% inc)	\$20,000	\$21,000	\$22,050	\$23,153	\$24,310	\$25,526	\$26,802
Grad Rate	\$15,120	\$15,876	\$16,670	\$17,503	\$18,378	\$19,297	\$20,262
Tuition Generated	\$180,000	\$357,000	\$529,200	\$555,660	\$583,443	\$612,615	\$643,246
Marginal Revenue	\$120,960	\$297,960	\$172,200	\$26,460	\$27,783	\$29,172	\$30,631
Tax on Marginal Revenue	\$(29,030)	\$(71,510)	\$(41,328)	\$(6,350)	\$(6,668)	\$(7,001)	\$(7,351)
Marginal Revenue from Fees	\$91,930	\$226,450	\$130,872	\$20,110	\$21,115	\$22,171	\$23,279
Fees above Grad Rate (Untaxed)	\$59,040						
Mas Subsidy Revenue				0.8	0.775	0.775	0.775
Effective Rate	237.51	242.94	248.49	254.17	259.99	265.93	272.01
Total Subsidy Generated		\$51,503	\$148,102	\$175,686	\$193,430	\$197,852	\$202,375
Marginal Subsidy		\$51,503	\$96,599	\$27,583	\$17,744	\$4,422	\$4,523
Tax on Marginal Subsidy		\$(12,361)	\$(23,184)	\$(6,620)	\$(4,259)	\$(1,061)	\$(1,086)
Marginal Revenue from Subsidy		\$39,142	\$73,415	\$20,963	\$13,485	\$3,361	\$3,438
Masters II - most common subsidy within COM.							
Doc Subsidy Revenue				0.2	0.225	0.225	0.225
Effective Rate	397.41	421.25	446.53	473.32	501.72	531.82	563.73
Total Subsidy Generated				\$81,790	\$108,371	\$114,873	\$121,766
Marginal Subsidy				\$81,790	\$26,582	\$6,502	\$6,892
Tax on Marginal Subsidy				\$(19,629)	\$(6,380)	\$(1,561)	\$(1,654)
Marginal Revenue from Subsidy				\$62,160	\$20,202	\$4,942	\$5,238

MS, DGC, and transitional DGC in Genetic Counseling

Masters II - most common subsidy within COM.

Student Services Assessment (SSA)

Combined Pools	243.94	249.52	255.22	261.06	267.03	273.13	279.38
Full Assessment		\$(52,898)	)	)	)	)	\$(268,202)
Same increase used as Subs Revenue. FY08-FY09 increase not relevant because of policy change							

Summary of Marginal Revenue	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Marginal Fees		\$297,960	\$172,200	\$26,460	\$27,783	\$29,172	\$30,631
Marginal Subsidy		\$51,503	\$96,599	\$109,373	\$44,326	\$10,925	\$11,416
Tax on Marginal Revenue		\$(83,871)	\$(64,512)	\$(12,970)	\$(10,926)	\$(8,063)	\$(8,437)
Marginal SSA		\$(52,898)	\$(99,216)	\$(73,442)	\$(30,791)	\$(5,861)	\$(5,995)
<b>Total PBA Generation</b>	<b>\$59,040</b>	<b>\$212,694</b>	<b>\$105,072</b>	<b>\$49,421</b>	<b>\$30,391</b>	<b>\$26,173</b>	<b>\$27,615</b>
<b>Cash Reconciliation at Yr End</b>	<b>\$91,930</b>						
<b>PBA Earnings By Program</b>	<b>\$59,040</b>	<b>\$271,734</b>	<b>\$376,806</b>	<b>\$426,227</b>	<b>\$456,617</b>	<b>\$482,790</b>	<b>\$510,405</b>
<b>Expenses</b>							
Personnel	-223,245	-234,789	-241,833	-249,088	-256,560	-264,257	-272,185
Start-up/Infrastructure	-6,000	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000
<b>Total Income</b>	<b>\$(78,275)</b>	<b>\$26,945</b>	<b>\$124,973</b>	<b>\$167,139</b>	<b>\$190,057</b>	<b>\$208,533</b>	<b>\$228,220</b>

▲ First year students (53 hours) second year students (43 hours) - 3rd year students 27 to get to even 120  
Assumes 2 out of state students in each new class per year

Exhibit shows PBA increases only. GFSA (Cash) margin would be settled in first year of program

**From:** [Elliot Slotnick](#)  
**To:** [Allain, Dawn](#); [Hampel, Heather](#)  
**Cc:** [Carlson, Jennifer K](#); [Dolby, Penny](#); [Lucey, Catherine](#); [Dena Myers \(myers.663@gradsch.ohio-state.edu\)](#); [Elliot Slotnick \(slotnick.1@gradsch.ohio-state.edu\)](#); [Patrick Osmer](#); [Susan Reeser](#); [smith.70@osu.edu](#); [Soave, Melissa](#)  
**Subject:** Genetics Counseling Proposal  
**Date:** Saturday, July 02, 2011 12:00:14 PM

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Dear Dawn and Heather,

I am writing to let you know that your proposal to create MS., professional doctoral (DGC) , and transitional professional doctoral (TDGC) degrees in Genetic Counseling were vetted by the Graduate Council's Curriculum Committee on Thursday. They received universal endorsement without a single request for revision. (Well, if truth be told, I will have to change the reference on page 8 to the Office of Graduate **Education** to Graduate **Admissions!**) Congratulations on this remarkable achievement. In about a dozen years over here I cannot recall a proposal of such magnitude having such a smooth initial ride in the first stages of the approval process. I well know, having worked with the two of you the past couple of years, that this is truly testimony to the incredible effort, including not only substantive but extraordinary legwork (as well as heart and soul) that the two of you have poured into the sale and drafting of the proposal. Again, congratulations on reaching this proximate milestone!

So, what next? As I think you know, the Council on Academic Affairs (CAA) has just about reached the stage in its docket where it can begin to vet new proposals that go beyond its voluminous semester conversion workload. CAA is the next stop for your proposal once it emerges from the Graduate School through approval by our Graduate Council. While our Council does not meet during the summer, I have requested that we send this forward to the membership through an electronic voting process. If/when approved, I can send the proposal forward to CAA which does, indeed, meet through the summer. I should note that two Graduate Council members presently serve on our Curriculum Committee and have already endorsed the proposal. Thus, I don't anticipate any problem getting this on to CAA—just the necessity for some passage of time.

Once this moves to CAA, Randy Smith and his assistant Melissa Soave will keep you apprised of any questions being raised and, as well, the scheduling of the proposal for a CAA vote. I'm hopeful that both our remaining action (a Graduate Council vote) and CAA approval can be accomplished through the summer. My best laid plan is to be able to send the proposal starting on its way through statewide review processes by circulating the Program Development Plan through the Regents RACGS committee review by Labor Day pending, of course, gaining Randy's go-ahead. In the best case scenario, I would love to see this complete all of its statewide approvals and internal signoffs (Graduate Council, CAA, University Senate and OSU Board of Trustees) by the end of the calendar year. We shall see—but I am copying Randy Smith on this notice to give him a heads up on what, I hope, will shortly be heading his way.

Congratulations on reaching this important stage in the curriculum development process and thanks so much for all of the hard work that has gotten us to this point. I hope that you are having a good holiday weekend.

All best,  
Elliot

Elliot E. Slotnick  
Associate Dean  
The Graduate School





Office of the Dean  
College of Medicine  
The Ohio State University

254 Meiling Hall  
370 West 9th Avenue  
Columbus, OH 43210  
Phone: 614.292.2600 / Fax: 614.292.4254

May 27, 2011

Elliot Slotnick, PhD  
Associate Dean  
Graduate School Administration  
250D University Hall  
230 N. Oval Mall  
Columbus OH 43210

Dear Dr. Slotnick:

I am delighted to forward the attached proposal for new Masters and clinical Doctoral level degree programs in Genetic Counseling.

Advances in genetic diagnosis and the promise of personalized medicine have left the nation with a deficit of adequately trained genetic counselors. You may be aware that The Ohio State University Medical Center has a uniquely strong clinical genetic counseling program led by Dawn Allain, Heather Hampel and Dr. Judy Westman. In addition, trends in genetic counseling suggest that future cohorts of genetic counselors may need the advanced training supported by a clinical doctorate. Ms. Dawn Allain and Dr. Westman have therefore constructed a traditional professional Masters program with the ability to transition to a clinical Doctorate.

This program has been reviewed and endorsed by The Ohio State University College of Medicine Graduate Studies and Research Education Committee. We therefore submit this program proposal to you for approval at the graduate school and university level.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Catherine R. Lucey', with a long, sweeping underline.

Catherine R. Lucey, MD FACP  
Interim Dean and Vice Dean for Education  
The Ohio State University College of Medicine

Attachment



Department of Pathology

129 Hamilton Hall  
1645 Neil Avenue  
Columbus, OH 43210  
Fax: (614) 292-7072

23 May, 2011

Dr. Catherine Lucey, Interim Dean  
Associate Vice President for Health Sciences Education  
OSU College of Medicine  
254 Meiling Hall  
370 W. 9<sup>th</sup> Avenue  
CAMPUS

Dear Dr. Lucey,

The COM Research Education Curriculum Committee has carefully reviewed the attached Program Development Plan for the Master's and clinical Doctoral level degree programs in Genetic Counseling. Following the inclusion of suggested minor modifications, the Committee strongly endorses creation of the proposed programs. Ms. Dawn Allain and Ms. Heather Hampel, Division of Human Genetics, are to be commended for the development an exceptionally well-organized, thoughtful, and thorough proposal.

The sequencing of the human genome and the subsequent rapid advance in our understanding of functional genomics has greatly increased the need for skilled genetic counselors, with demand currently exceeding the supply. Furthermore, the dawn of the era of personalized medicine and the progressive accumulation of new knowledge of specific genetic contributions to multiple distinct disease processes dictates that genetic counseling must be an evolving discipline. The development of the proposed graduate programs in Genetic Counseling provides the OSU College of Medicine with a unique opportunity to take a leading role in the training of individuals with not only the clinical skills to provide excellence in patient care, but also the research skills to advance the discipline and to continuously adapt and incorporate new genetic knowledge as it becomes available.

In summary, considering the clearly identified need to increase the ranks of qualified genetic counselors and the excellence and detail provided by the submitted development plan, as well as the unique opportunity to assume a leadership role in the training of these professionals and the outstanding resources available in the Ohio State University College of Medicine, the Research Education Curriculum Committee strongly recommends expeditiously moving forward with creation of the proposed graduate programs.

If you require additional information, or if you would like meet personally to discuss the proposal, please feel free to contact me.

Respectfully,

W. James Waldman, Ph.D.  
Associate Professor  
Department of Pathology  
Department of Molecular Virology,  
Immunology, and Medical Genetics  
Director, Pathology Graduate Studies  
Chair, COM Research Education Curriculum Committee

Good news, Susan, thanks! I am taking then liberty of sending the attached materials on to Melissa Soave so that the proposal can now be placed in the queue for CAA review.

Thanks,  
elliott

**From:** Susan Reeser  
**Sent:** Monday, July 18, 2011 3:58 PM  
**To:** Elliot Slotnick (slotnick.1@gradsch.ohio-state.edu)  
**Cc:** Karen Mayer (mayer.113@gradsch.ohio-state.edu)  
**Subject:** Graduate Council approves proposal to create an MS in Genetic Counseling

Dear Elliot:

I'm writing to let you know that I have received nine (9) responses to the e-mail below approving the proposal to create the MS degree in Genetic Counseling.

The nin Council members who approved the proposal are: Enrico Bonello, Theresa Early, Bernadette Minton, John Oberdick, Robert Perry, Roberto Rojas, Harald Vaessin, Mike Vasey, Karla Zadnik

I did not receive responses from Ana Azevedo, Joe Arena, Ginny Bumgardner, Margaret Newell, James Phelan

I'll let you know if I receive any additional responses.

Susan Reeser

**From:** Patrick Osmer  
**Sent:** Tuesday, July 05, 2011 1:23 PM  
**To:** ANA CLARA AZEVEDO (azevedo.3@buckeyemail.osu.edu); Enrico Bonello (bonello.2@osu.edu); arena.8@osu.edu; Ginny Bumgardner; Theresa Early; Minton, Bernadette (minton\_15@fisher.osu.edu); Margaret Newell; oberdick.1@osu.edu; Robert Perry (perry@pacific.mps.ohio-state.edu); James Phelan (phelan.1@osu.edu); roberto\_rojas@engadmin.ohio-state.edu; Harald Vaessin; vasey.1@osu.edu; 'Zadnik, Karla'  
**Cc:** Patrick Osmer; Ann Salimbene; Elliot Slotnick; Kathleen Wallace; Dena Myers (myers.663@gradsch.ohio-state.edu)  
**Subject:** Vote needed on Curriculum proposal to create an MS in Genetic Counseling

Dear Graduate Council Members,

I am writing to request your endorsement of three recommendations for new degrees that our Curriculum Committee has approved. Elliot's message below and the attachments provide information for your review. If we can gain approval by electronic ballot, it will expedite significantly the further review process for the degrees.

Please respond to Susan Reeser ([reeser.1@osu.edu](mailto:reeser.1@osu.edu)) with your vote by July 12.

Thanks very much, and I hope your summer is going well,

Pat

**From:** Elliot Slotnick  
**Sent:** Saturday, July 02, 2011 11:27 AM  
**To:** Patrick Osmer  
**Cc:** Susan Reeser; Dena Myers ([myers.663@gradsch.ohio-state.edu](mailto:myers.663@gradsch.ohio-state.edu)); Elliot Slotnick ([slotnick.1@gradsch.ohio-state.edu](mailto:slotnick.1@gradsch.ohio-state.edu))  
**Subject:**

Pat,

This proposal for three new degrees out of the Medical School—the MS in Genetic Counseling, Doctor of Genetic Counseling (DGC) and a Transitional Doctor of Genetic Counseling (TDGC) were all passed unanimously and enthusiastically by our Curriculum Committee at its meeting last week. All three need Graduate Council Approval so that they can be forwarded to CAA for the next step of review—and CAA is actually now ready and poised to receive new proposals post-semester conversion...

Can this be sent out to the Graduate Council for an endorsement vote, along with the proposed change in the semester conversion rule for outside hours in our GIS programs in the coming week? It would be terrific if we can have both of these important matters approved and ready for sending on to their next port of call when we return from California. Note, by the way, that the curriculum proposal has already passed the scrutiny of two Council members—Enrico and Theresa.....

Thanks, in advance...

Cheers,

elliott