December 7, 2016

TO: Members of the Board of Trustees
FROM: Mun Y. Choi, Provost
RE: Master of Science in Genetic and Genomic Counseling

RECOMMENDATION:

That the Board of Trustees approve the Master of Science in Genetic and Genomic Counseling.

BACKGROUND:

Most health-care providers are insufficiently trained to interpret or explain genetic and genomic testing results, and are faced with ever increasing numbers of patients. However, the number of certified genetic counselors, the professionals who assist physicians and patients make sense of the tests and testing results, does not meet the market demand. Genetic counseling is the third fastest growing job in CT yet there are only 31 genetic counseling graduate programs in the country, none in CT.

A Professional Science Master’s (PSM) Degree Program in Genetic and Genomic Counseling will train graduate students to become competent and effective health professionals. Master’s-trained genetic counselors combine expertise in genetics, epidemiology, and counseling theory with skills in risk assessment, education, and counseling to explain test complexity to clients who are afflicted with or are at risk of disease.

The Genetic and Genomic Counseling Program will bring in the most important aspect of genome science, the patient. PSM graduates earn their degree while gaining workplace skills by engagement with stakeholders through internships and acquiring a professional development portfolio (e.g. ethics, communication, regulatory affairs). This innovative Program will be established under the auspices of the Institute for Systems Genomics, its affiliated UConn Departments and teaching hospitals, and the Jackson Laboratory for Genomic Medicine. We are working beyond structural barriers of Colleges and Schools, and coalescing multidisciplinary educational and research expertise in genetics, medicine, education, psychology, social work, allied health sciences, kinesiology and bioinformatics.
Request for New UConn Academic Degree Program

Name of proposed academic degree program: Genetic and Genomic Counseling
Name of sponsoring Department: Institute for Systems Genomics
Name of sponsoring School: The Graduate School
Campuses: Storrs; Farmington

Contact person(s):
  Dr. Marc Lalande
  Chairman, Department of Genetics and Genome Sciences, School of Medicine
  Director, Systems Genomics and Stem Cell Institutes

  Dr. Judy Brown
  Director, Health Care Genetics Professional Science Masters Degree Program
  Interim Director, Genetic and Genomic Counseling Professional Science Masters Degree Program
  Director, AHS co-sponsored Professional Science Masters Degree Programs

Type of Proposal: New
Type of Program: M.S.
Anticipated Initiation Date: August 2018
Anticipated Date of First Graduation: August 2019
Delivery: Hybrid
CIP Code: 51.1509  Title: Genetic Counseling/Counselor
Background & Description

Genetic testing can help a couple decide whether to paint the nursery blue or pink, diagnose diseases such as cystic fibrosis and sickle cell anemia and estimate future risk for conditions including breast and ovarian cancer. DNA testing has moved from its initial purpose of screening parents and newborns for inherited diseases, or identifying the presence of extra chromosomes during prenatal testing to a new age in medical science: the age of Personalized Genomic Medicine, where each patients’ genome sequence data will be integrated into a multifaceted health profile to enable carefully tailored therapeutic strategies provided by healthcare givers. There are now thousands of genetic tests, most of which were brought to laboratories only in the past 10 years. There are 3 billion base pairs of DNA compacted into 46 chromosomes in an individual’s cells and a multitude of testing methodologies and chemistries for the 63,578 Gene Tests\(^1\) available as of June 26, 2016.

Master’s-trained professionals, genetic counselors combine expertise in genetics, epidemiology, and counseling theory with skills in risk assessment, education, and counseling to explain test complexity to clients who are afflicted with or are at risk of disease. Most healthcare providers are insufficiently trained to interpret or explain genetic and genomic testing results\(^2\), and are faced with ever increasing numbers of patients\(^3\). However, the number of certified genetic counselors, the professionals who assist physicians and patients make sense of the tests and testing results, does not meet the market demand. Genetic counseling is the third fastest growing job in CT\(^4\) with a 43.1% growth from 2012-2022, yet there are only 31 genetic counseling graduate programs in the country\(^5\), none in CT, fewer than 300 program graduates in spring 2016\(^6\), ensuring we will fall far short of meeting our state’s market demand.

Through concerted efforts, including targeted faculty recruitment, capital investment and the creation of new institutional partnerships, the University has laid the foundation for a world-class program in genome science. The culmination of this initiative was the formation of a partnership between UConn and the Jackson Laboratories (JAX) and the founding of the Institute for Systems Genomics (ISG). Collaborations within the ISG between the Department of Allied Health Sciences led to the co-sponsorship of a Professional Science Master’s Degree in Health Care Genetics. UConn, in addition to its research strengths in genome sciences, is home to an undergraduate, post-baccalaureate and Master’s degree training program in clinical genetics (Diagnostic Genetic Sciences, Health Care Genetics).

In terms of advancing UConn’s reputation and prominence, genetic counseling is the true translational interface between UConn genomics and our clientele: the public. Our goal now is to launch an interdisciplinary, accredited, Professional Science Master’s (PSM) Degree Program in Genetic and Genomic Counseling. This degree program will bring in the most important aspect of genome science, and that is the patient. PSM graduates earn their degree while gaining workplace skills by engagement with stakeholders through internships and acquiring a professional development portfolio (e.g. ethics, communication, regulatory affairs). This innovative Program will be established under the auspices of the Institute for Systems Genomics, its affiliated UConn Departments and teaching hospitals, and the Jackson Laboratory for

\(^1\) https://www.genetests.org/
\(^2\) (Haga et al. 2012; Hofman et al. 1993; Hunter et al. 1998)
\(^5\) http://gceducation.org/pages/accredited-programs.aspx
\(^6\) http://www.npr.org/sections/health-shots/2016/04/18/473066953/more-people-seek-genetic-testing-but-there-arent-enough-counselors
M.S. in Genetic and Genomic Counseling

Genomic Medicine. We are ignoring structural barriers of Colleges and Schools, and coalescing multidisciplinary educational and research expertise in genetics, medicine, education, psychology, social work, allied health sciences, kinesiology and bioinformatics. Our genetic counseling program would be the first at a New England public institution, and the first in Connecticut.

Reasons for the Proposed Program/Modification/Discontinuation

Evidence of the popularity of genomics is easy to find; a 23andMe television commercial promotes a $99 personal genome sequencing test, Angelina Jolie shares BRCA1 gene test results on Oprah, and President Obama invests $215 million in the Precision Medicine Initiative. Genetic counselors strengthen partnerships with physicians and other health professionals to develop a multi-disciplinary approach to genomic and personalized medicine. Yet, there are only about 4,000 certified genetic counselors in the US⁷, despite increasing demand for these qualified professionals to advise on the selection between complicated genetic tests, weed through “big data” sets, and explain test results not only to patients, in a language they can understand, but also to health care professionals who lack adequate training in these areas⁸. The short supply results from stringent accreditation requirements and limited sites for clinical experiences⁹, with resultant acceptance rates at genetic counseling programs <8%¹⁰. Advances in genomics and laboratory testing, combined with the public’s increased awareness of the benefits of genetic counseling, thanks to the “celebrity effect” of Angelina Jolie, the profession is becoming more popular with young students. A genetic counseling program at UConn can both augment and complement the accredited undergraduate professional Diagnostic Genetic Sciences (DGS) training program. In addition, graduate students in Psychological Sciences, Nursing, Social Work, and in the Health Care Genetics PSM Program will benefit from inter-professional learning activities. The option to transition from a bachelor’s degree in AHS, DGS or other life science majors into a genetic counseling program will be a major draw to the undergraduate degree programs at UConn.

Students will learn and train in a multi-disciplinary approach across departments in the UConn Educational system including Allied Health, Psychological Sciences, Education, Nursing, the Medical School, and the School of Social Work (indicated their interest in participating in the program by allowing genetic counseling students to enroll in existing courses).

Students’ professional and research skills will be expanded by having direct access to advanced genomics technology at the Center for Genome Innovation (CGI), research in the ISG, and clinical resources at UConn Health, the Jackson Laboratory, and Children’s Medical Center. With the availability of NextGenCT training facilities on the UConn campuses, genetic counseling students will learn the technological advances they will later need to prescribe and interpret for their patients. A challenge facing clinical faculty, testing labs, and counseling clinics is what to do with “big data”. How do we analyze, store and interpret the large volumes of NextGenCT genome sequencing data? Drs. Sheida Nabavi and Jill Wegrzyn, Academic Plan ISG hires, are computational biologists who will identify training methodologies and data sets appropriate for all PSM graduate students. UConn Genetic and Genomic Counseling graduates will not only contribute to the expanding job market and gain positions in medical centers,

---

⁹ doi:10.1038/gim.2015.179
¹⁰ (National Society of Genetic Counselors)
physician offices, advocacy organizations, governmental agencies, public health departments, and laboratories, but will be uniquely poised to meet the challenging demands of the rapidly changing field of genomics.

**Curriculum & Program Outline**

The Genetic and Genomic Counseling curriculum was designed to meet the Accreditation Council for Genetic Counseling (ACGC) requirements such that the didactic and experiential components support 22 practice-based competencies categorized in four domains: 1) Genetics Expertise and Analysis, 2) Interpersonal, Psychosocial and Counseling Skills, 3) Education, and 4) Professional Development & Practice. Aspiring to be an affiliated PSM Program, the curriculum is interdisciplinary, has the majority of the course content in the natural sciences, includes a professional skills component, incorporates an experiential component, and culminates in a capstone project which integrates the practical application of scientific and professional knowledge, behavior, and skills. Dr. Brown, has successfully obtained new PSM Program Accreditation and is confident this Program meets the required qualifications for accreditation.

There are classes at the Storrs, Hartford and Farmington campuses which can be supplemented with guest lectures from key partners and specialists (e.g. Dr. Charles Lee, Jackson Laboratories for human variation and disease susceptibility and Dr. Nicole Broderick, an Academic Plan ISG hire, for microbiome and health) to easily meet the Genetics Expertise and Analysis Core Domain. The competencies which fall under the Interpersonal, Psychosocial and Counseling Skills domain include effectively educating clients about a wide range of information based on their needs, their characteristics and the circumstances of the encounter. Basic competencies expected of graduates also include the ability to promote client-centered, informed, non-directive and value-based decision-making that is given in a culturally responsive and respectful manner to all clients, and adaptable to varied service delivery models. The didactic delivery of a portion of these educational domains can be met in some classes listed (instructors have been contacted for approval of enrollment and support for program goals). Not surprisingly given the specialized field of genomic counseling, a single class cannot meet all program objectives. However, the Directors have identified existing courses that, when applied collectively, can successfully support this program. The Program Director will supplement courses as needed with seminars and/or workshops and all competencies in all domains will be supported with experiential learning.

*Educational competencies* incorporate the ability to assess and determine educational goals and learning objectives based on the needs and characteristics of an audience and subsequently effectively educating clients about a range of genetics, genomics and counseling issues in a written and oral format that is concise and understandable for audiences of varying educational backgrounds. This standard will be met through coursework, clinical practicums, and teaching opportunities. Project co-Directors have outlined a scenario in which Health Care Genetics and Genomic Counseling PSM students will organize and teach an undergraduate Honors seminar course.

*Professional Development & Practice Core domain* competencies include acting in accordance with ethical, legal and philosophical principles and values of the genetic counseling profession, demonstrating an understanding of the research process, advocating for individuals, and families, demonstrating an evidenced-based approach to practice, understanding the methods of the process of supervision of trainees, and establishing and maintaining professional
interdisciplinary relationships in both team and one-on-one settings. ACGC accreditation standards include teaching and laboratory research opportunities for students, however given the research efforts in the ISG, and the teaching efforts in AHS, these requirements will easily be met. Clinical Training/Fieldwork Experience must occur under the supervision of a certified genetic counselor or medical geneticist and must provide students with opportunities to have first-hand experience with individuals and families affected by a broad range of genetic conditions. The Program Director will secure memorandum of agreements for research rotations, teaching modules or other research projects within the ISG or other partner departments. A letter indicating a willingness to provide training support has been provided by Dr. Charles Lee at JAX, Dr. Juan Salazar from Children’s Hospital, Dr. Molly Brewer, Chair of OB/GYN at UConn Health, and Dr. Rachel O’Neill, Head of The Center for Genome Innovation. Additionally, we have received email confirmation of support for training from Joanne Florio, MS in the Prenatal Diagnosis Unit at Yale University School of Medicine, Kelly Genzlinger, MS, LCGC, the Cancer Genetic Counselor at Hartford Health Care, and from Sarah Clark, MS, CGC in the Dept of Maternal Fetal Medicine at Stamford Hospital. New training sites will be recruited such that students will meet the required 50 “core cases” from a wide variety of clinical settings and service delivery models.

AH 5700 course content includes legal and ethical considerations in counseling and medical testing, and AH Professional Development Project and Practicum course options are required components of PSM in Health Care Genetics degree. The PSM in Health Care Genetics Degree Program provides advanced level didactic, experiential and professional development training so that graduates excel in laboratory genetics, become public health genomics educational specialists, advance genomics research, improve genomics medicine, and develop genomic policies. The integration of genomic/genetic counseling students with Health Care Genetics PSM student scientists and into course-based experiential learning can easily be coordinated and will add further breadth and depth to the students’ learning experiences.

We are confident that UConn can successfully train genetic counselors especially given the evidence of interest and support from our colleagues. Funding the start of this program will help cement UConn’s reputation as a leader in Bioscience CT.

First Year – Fall term – 11 credits
MEDS 5309 Molecular Basis of Disease: 2 credits
Kimberly Dodge –Kafka, Cell Biology, UConn Health
EPSY 5308 Counseling: Theory and Practice: 3 credits
TBD, Educational Psychology
KINS 6094 Inherited Metabolic Disorders: 3 credits
Elaine C. Lee, Kinesiology
BASC 5361 Hum Behav Soc Env Micro Theor: 2 credits
Ellen Smith, School of Social Work
AH 5XXX Clinical Internship I: 1 credit

First Year – Spring term – 13 credits
AH 5XXX Clinical Internship 2: 1 credit
MEDS 5369 Adv Genetics & Mol Biol: 3 credits
Asis Das, Molecular Biology & Biophysics, UConn Health
M.S. in Genetic and Genomic Counseling

COMM 5770 Health Communications: 3 credits
   Leslie Snyder, Communications
AH 5710 Genetics & Genomics of Health: 3 credits
   Judy Brown, Allied Health Sciences
NURS 5020 Statistical Methods in Nursing: 3 credits (Online)
   Amy Kenefick Moore, School of Nursing

First Year – Summer – 7 credits
AH 5XXXX Clinical Practicum Internship 3: 3 credits
AH 5720: 08 Principles of microarray analysis: 1 credit (hybrid)
   Judy Brown, Allied Health Sciences
AH 5099 Research: 3 credits

Second Year – Fall term – 12 credits
AH 5720:09 Principles of Teratology: 1 credit
   Sharon Voyer Lavigne, Genetics and Genome Sciences, UConn Health
POPR 5310: Program Plan, Develop & Eval: 3 credits
   TBD, Social Work, Hartford Campus
AH 5XXX Clinical/Lab Practicum 4: 1 credit
AH 5720: 03 Genomic Data in the Clinical Lab: 1 credit (Hybrid)
   Judy Brown, Allied Health Sciences
PSYC 5120: Health Psychology: 3 credit
   Crystal Park, Professor, Psychological Sciences
AH 5700 Ethical Considerations in Genetic Testing & Research: 3 credits
   Judy Brown, Allied Health

Second Year – Spring term – 6 credits
AH 5XXX Clinical/Lab Practicum 5: 1 credit
AH 5XXX Capstone Project: 2 credits
MEDS 6447 Tool Kit Scientific Communications: 1 credit
   Caroline Dealy, Associate Professor, UConn Health
AH 5715: Current Topics in clinical genetics: 1 credit
   Judy Brown, Allied Health Sciences
   Ginger Nichols, Genetics and Genome Sciences, UConn Health
   Joe Tucker, Genetics and Genome Sciences, UConn Health
AH 5720:11 Next Generation Sequencing: 1 credit
   Bo Reese, PhD, Senior Facility Research Scientist, ISG and Academic Assistant, Biotech
   and Bioservices Center

{60 credits is not outside the norm for this type of program \(^{11}\)}

\(^{11}\) http://www.augie.edu/academics/graduate-education/master-science-genetic-counseling/degree-requirements
Learning Outcomes

The Genetic and Genomic Counseling Program will train graduate students to become competent and effective health professionals. The American Board of Genetic Counseling (ABGC), the accrediting body for genetic counseling graduate programs in North America, defines the following Practice-Based Competencies that an entry level genetic counselor must demonstrate. The competencies are categorized into the following domains: Communication Skills; Critical-Thinking Skills; Interpersonal, Counseling, and Psychosocial Assessment Skills; and Professional Ethics and Values. Some competencies may pertain to more than one domain. These domains represent practice areas that define activities of a genetic counselor. Successful completion of the Professional Science Master’s Degree Program in Genetic and Genomic Counseling indicates the graduate will be able to

Domain I: Genetics Expertise and Analysis

1. Demonstrate and utilize a depth and breadth of understanding and knowledge of genetics and genomics core concepts and principles.

2. Integrate knowledge of psychosocial aspects of conditions with a genetic component to promote client well-being.

3. Construct relevant, targeted and comprehensive personal and family histories and pedigrees.

4. Identify, assess, facilitate, and integrate genetic testing options in genetic counseling practice.

5. Assess individuals’ and their relatives’ probability of conditions with a genetic component or carrier status based on their pedigree, test result(s), and other pertinent information.

6. Demonstrate the skills necessary to successfully manage a genetic counseling case.

7. Critically assess genetic/genomic, medical and social science literature and information.

Domain II: Interpersonal, Psychosocial and Counseling Skills

8. Establish a mutually agreed upon genetic counseling agenda with the client.

9. Employ active listening and interviewing skills to identify, assess, and empathically respond to stated and emerging concerns.

10. Use a range of genetic counseling skills and models to facilitate informed decision making and adaptation to genetic risks or conditions.

11. Promote client-centered, informed, non-coercive and value-based decision-making.

12. Understand how to adapt genetic counseling skills for varied service delivery models.

13. Apply genetic counseling skills in a culturally responsive and respectful manner to all clients.
M.S. in Genetic and Genomic Counseling

Domain III: Education

14. Effectively educate clients about a wide range of genetics and genomics information based on their needs, their characteristics and the circumstances of the encounter.

15. Write concise and understandable clinical and scientific information for audiences of varying educational backgrounds.

16. Effectively give a presentation on genetics, genomics and genetic counseling issues.

Domain IV: Professional Development & Practice

17. Act in accordance with the ethical, legal and philosophical principles and values of the genetic counseling profession and the policies of one’s institution or organization.

18. Demonstrate understanding of the research process.

19. Advocate for individuals, families, communities and the genetic counseling profession.


21. Understand the methods, roles and responsibilities of the process of clinical supervision of trainees.

22. Establish and maintain professional interdisciplinary relationships in both team and one-on-one settings, and recognize one’s role in the larger healthcare system.

Enrollment & Graduation Projections

The Professional Science Master’s Program in Genetic and Genomic Counseling proposes an enrollment target of 10 students per year. The limiting factor to class size is the number of affiliated/internship sites at which students will complete the required clinical training in the various genetic counseling modalities (e.g. prenatal testing, adult genetics, pediatric genetics, cancer genetics, etc). Time to graduation is two years. The inaugural class was originally projected and budgeted to be Fall 2017, an extension will be requested given the time limiting factor of a required full-search to hire a program director.

- Fall (Aug) 2018 – enrollment projection 10 students
- Fall (Aug) 2019 – enrollment projection 20 students
- May 2020 – graduation projection 10 students
- Fall (Aug 2020) – enrollment projection 20 students
- May 2021 – graduation projection 10 students

Financial Resources

The Program was proposed and selected as a grant project for funding through the UConn Academic Plan Proposal competition. The Program will be funded at the $300,000 level ($100K per year for three years) with the first $100K dispersed July 1, 2016. The grant principle investigators (Lalande and Brown) have established an entrepreneurial revenue-sharing model with the Provost’s Office. The Provost’s investment for year 1 will be used to identify and hire a qualified Program Director and Medical Director. The grant dollars will continue to fund the
M.S. in Genetic and Genomic Counseling

Program until July 1, 2019, at which time the Program will request a no-cost roll-over of funds given that the Program is unable to start until a Program Director is hired. The program should be self-reliant on tuition return revenues and laboratory fees in 2020. Provided the Program is at full enrollment (20) henceforth, the tuition dollars are budgeted to be sufficient to support program personnel, accreditation fees, and required continuing education activities. Students will not receive tuition assistance in the form of research assistantships or teaching assistantships. Student labor positions may be available from various facilities or faculty.

Facilities//Equipment/Library/Special Resources

Program Director office space is available in Koons Hall. Classroom space is scheduled by the University Registrar’s office. Professional Science Master’s Students will take courses online, and on the UConn-Storrs, UConn-Health, and/or UConn Hartford campuses. Academic resources include computer and audio/visual equipment; instructional materials; technological resources that provide access to the Internet, and the full text of current books, journals, periodicals and other reference materials related to genetics and genomics and counseling as subscribed to by UConn Storrs and the Health Center.

Laboratory training will be provided on the Storrs campus in Koons Hall Room 2, 11, 22, and 218 which are equipped as a teaching laboratory for cytogenetics, basic molecular biology, and chromosome imaging. Advanced genetic laboratory training will be provided in the Center for Genome Innovation in which is located on both the Storrs and Farmington campuses and whose infrastructure serves as a nexus for computational biology support and incorporates instrumentation including ABI Genetic Analyzer Capillary Electrophoresis Sequencer; BioRad CFX96 Real-Time PCR machine; Affymetrix Gene Atlas System; Affymetrix Gene Chip System; and, Roche 454 GS FLX+. UConn also has 4 Next Generation Sequencing instruments (2 Illumina NextSeq 500 and 2 Illumina MiSeq sequencers). Support for these technologies is available in the form of experienced user access, hands-on assistance, training and/or consultation.

Special resources and access to patients, medical records, etc will be as needed during clinical training and internships at off-site locations. The Program will maintain an affiliation agreement with all non-UConn student training sites.

Program Administration

The ISG Professional Science Masters (PSM) Genetic and Genomic Counseling (GGC) program will be administered through the office of the Director of the Institute for Systems Genomics and the Program Director will hold an academic appointment in the Department of Allied Health Sciences (AHS). PSM curriculum development, additions and implementation will be overseen by the ISG Courses & Curriculum (C&C) committee (Dr. Marc Lalande, Dr. Michael O’Neill, Dr. Judy Brown, TBN Program Director).

Course additions and changes will be handled by the home departments’ curricular and courses committees. The Program Director will report directly to the Director of the ISG and the AHS Department Head as stipulated in a Memorandum of Agreement. Decisions regarding faculty merit and re-appointment will be made at the Departmental and College level as per typical faculty appointments, with recommendations from the Educational Committee of the Institute for Systems Genomics (currently Dr. Marc Lalande, Dr. Michael O’Neill, Dr. Judy Brown, and Dr. Joseph Tucker). Teaching assignments, program goals and workload will set on
an annual basis in discussion with the Director of the ISG, with input from the Department Head of AHS, as stipulated in a Memorandum of Agreement.

**Faculty**

The Program Faculty must have specific qualification to meet accreditation standards.

1. Required qualifications for the Program Director include a MS in genetic counseling or beyond, certification in genetic counseling and a minimum of 5-years of experience.
2. Accreditation guidelines indicate a minimum of 5% of an FTE Medical Director who holds a Medical Degree and ABMG certification. Dr. Joe Tucker will fill this role.
3. Dr. Judy Brown will serve as Associate Program Director until the GGC Program has achieved accreditation from the ACGC, affiliation with the National Professional Science Masters Association, and/or until a qualified Associate Program Director is hired. Thereafter, Dr. Brown will continue in her role on the ISG Educational Committee and in her role as Director of AHS co-sponsored PSM Programs.
4. Teaching faculty and rank are listed below each course of the curriculum on page 7-8.

**Similar Programs in Connecticut or Region**

There are no genetic counseling graduate programs in CT, RI, ME, NH, or VT. Although there are two graduate genetic counseling programs in MA; Boston University School of Medicine and Brandeis University and three programs in New York; Long Island University, Mt. Sinai School of Medicine and Sarah Lawrence College, there are, however, only 4,000 certified genetic counselors in the US\(^\text{12}\), resulting in delays to patient diagnosis and treatment. Professionally trained, certified genetic counselors are in short supply because the accreditation requirements and clinical experiences at the accredited US programs limits class sizes to between 4-25\(^\text{13}\). As a result, genetic counseling programs are very competitive, with acceptance rates <8 percent\(^\text{14}\). A genetic counseling graduate program at a public institution in CT will be a welcomed addition by all professionals and candidates, and bound to very popular given the highly competitive tuition rate.

The total tuition cost (without student fees), for the BU Genetic Counseling Program is currently $67,700\(^\text{15}\), for the Brandeis program is $47,300\(^\text{16}\), and at Sarah Lawrence, the cost for year 1 is $33,350 and for year 2 is $22,678\(^\text{17}\). An in-state full-time graduate student at UConn will pay ~$8,000 for tuition in FY 16-17, and an out-of-state student will pay ~$13,000.

\(^{12}\) [https://abgcmember.goamp.com](https://abgcmember.goamp.com) accessed March 10, 2016

\(^{13}\) [https://abgcmember.goamp.com](https://abgcmember.goamp.com) accessed March 10, 2016

\(^{14}\) (National Society of Genetic Counselors)


\(^{16}\) [http://www.brandeis.edu/gsas/financing/cost.html](http://www.brandeis.edu/gsas/financing/cost.html)

\(^{17}\) [https://www.sarahlawrence.edu/financial-aid/graduate/tuition.html](https://www.sarahlawrence.edu/financial-aid/graduate/tuition.html)