

Rutgers University
Genetic Counseling Master's Program
New Brunswick, NJ



Interview Materials Packet
February 24, 2023
10:00 am – 2:00 pm PST

About the Program

Program Description

The Genetic Counseling Master's Program (GCMP) at Rutgers University is a 22 month graduate program in which students will be awarded a Master's in Science upon completion. Our program is comprised of three main components: rigorous coursework, a variety of clinical rotations offered throughout the state, and a Master's research project. There are a number of additional rotations and activities that our students participate in that serve to round out their educational experience.

The Rutgers GCMP draws upon the vast resources of a growing Rutgers University.

Our program collaborates with a variety of University departments and other Rutgers professional schools to provide a multi-disciplinary approach to training. Our program leadership includes dedicated genetic professionals, representing a range of specialties, both academic and clinical. Located on the beautiful Busch campus, GCMP students will be able to take advantage of all that a large university has to offer.

In light of the expanding roles that genetic counselors now fulfill, the program was designed to prepare our graduates to pursue a variety of genetic counseling jobs.

Additionally, the program strives to take advantage of the vast number of opportunities within Genetics throughout the state. These goals are reflected in our Mission Statement and Program vision.

Since the beginning of the program, 100% of admitted students have graduated on time, completing the program in 22 months. The Rutgers GCMP has over a 95% employment rate at the time of graduation, and our cumulative board pass rate (first time test takers) is over 90%!

Mission Statement and Vision Statement

To provide excellent, innovative, and interdisciplinary training that prepares our students for the evolving field of genetic counseling.

Graduates of Rutgers GCMP will be empathic and competent counselors, self-directed learners, and respected leaders who strive to advance the profession and are prepared to fulfill a variety of roles in a healthcare system that increasingly utilizes genetic and genomic medicine.

Academics

The GCMP curriculum is designed to provide a challenging, thorough, and well balanced training to our graduate students. The majority of courses have been designed specifically for our genetic counseling students to ensure the effectiveness and specificity of our training. Students will take a four course genetic counseling course that spans across the two years of training. Science curriculum includes Human Genetics and Medical Genetics courses, as well as courses designed to emphasize other specialty areas (Reproductive Genetics and Cancer Genetic Counseling). Our program also take advantage of upon the offerings of Rutgers University by including courses offered by other professional schools including the School of Social Work thus demonstrating our approach to cross disciplinary training and the value of exposing our students to a variety of Rutgers resources. The Rutgers GCMP also participates with NJ LEND, a nation-wide program that prepares graduate-level health care students to address the complex needs of children with autism, related disabilities, and other maternal and child health populations.

The program is 59 credits, spanning five continuous semesters. See below for a summary of the curriculum and program structure.

NOTE: Admitted students will be required to take an online embryology course prior to program start date if course was not taken previously.

Fall First Year (15 Credits)

- Foundations of Genetic Counseling (3) – Rispoli
 - This course will provide an introduction to core genetic counseling skills including constructing a pedigree, contracting, and various techniques surrounding communication, delivery of bad news, and decision facilitation. Emphasis will be placed upon risk assessment,

risk calculation and the fundamentals of case management. This course will provide the framework prior to the genetic counseling clinical rotation. Information discussed in class will be reinforced by bimonthly role play exercises with members of the genetic counseling program faculty.

- Human Genetics (3) – Brzustowicz
 - This course will provide an in-depth introduction to the analysis of human genetic disorders, with a particular emphasis on the analytic methods used to identify genetic defects associated with disorders. The course will consist of a didactic portion that will provide relevant background on important concepts in classical and molecular human genetics, including methods and experimental approaches in current use. The course will also contain data analysis exercises that guide the students through the steps commonly used in the identification of disease-causing mutations. There will be weekly homework assignments and an in-class presentation.
- Clinical Cancer Genetic Counseling (3) – Grumet/McDaniels
 - This course is designed to introduce the principles and practice of genetic counseling for hereditary cancer syndromes. The course will cover topics such as cancer epidemiology and biology, detailed characteristics of common and rare hereditary cancer syndromes (including information on diagnosis and risk management options for various types of cancer), genetic risk assessment, testing strategies, and the psychosocial and ethical aspects of genetic counseling for hereditary cancer syndromes.
- Counseling Techniques for Genetic Counselors II (2) – Rispoli/Seymour
- Research Methods for GC I (2) - Rispoli/Heiman
 - This course is an introduction to various methods of genetic counseling research. Students are introduced to the basic concepts of epidemiology and also work closely with various faculty members to begin the process of designing a Master's thesis project.
- Lab and Clinical Rotation (2)

Spring First Year (14 Credits)

- Genetic Counseling II: Reprogenetics (4) - Ashkinadze/Seymour
 - This course focuses on issues surrounding genetic counseling in the reproductive setting. Topics covered will include artificial reproductive technologies (ART), prenatal screening and diagnostic testing, fetal ultrasound assessment, fetal interventions/therapy, teratogen counseling, basic aspects of common pregnancy complications, evaluation of miscarriages and stillbirths, perinatal bereavement and ethical and legal considerations in prenatal diagnosis. This course will provide the framework prior to the genetic counseling clinical rotation and builds upon concepts taught in Foundations of Genetic Counseling I. Information discussed in class will be reinforced by weekly case presentations.
- Research Methods for Genetic Counseling (2)- Heiman
 - The objective of this course is to help students gain competence in initiating and conducting an empirical research study. The course is designed to guide genetic counseling students in developing their topic and research question for their independent research thesis. Topics include the selection and framing of a research question, building hypotheses, developing measurements, designing appropriate methods (such as experimentation, survey, field work, and using available data), drafting a research proposal, submitting an institutional review board (IRB) protocol, conducting a literature review, and creation of a thorough, clear, well-organized research report. Assessment of outcome will be based on completing CIDI human subjects training, formulating thesis project, identifying data source for project, and submission of a written research proposal.
- Medical Genetics I (3) – Botti
 - This course introduces medical cytogenetics, Mendelian and non-Mendelian inheritance and laboratory technologies relevant to the practice of genetic counseling. It focuses on cytogenetics including chromosome pathology such as aneuploidy, structural rearrangements and copy number variants. It introduces students to genetic conditions resulting from aneuploidy, Mendelian and non-Mendelian inheritance. It introduces the concepts of precision

medicine, pharmacogenomics. It begins the introduction to dysmorphology and system based genetics as well as multifactorial genetics. Students will consider ethical and psychosocial issues surrounding genetics and clinical application of genetic testing and integrate the knowledge gained to propose diagnostic strategies for cytogenetic conditions and provide risk assessment.

- Counseling Techniques for Genetic Counselors (2)- Rispoli
 - This course will focus on instruction, delivery, and practice of psychosocial assessment and counseling skills often employed during a genetic counseling session. In addition to effectively communicating genetic information, genetic counselors should also be familiar and proficient with employing basic counseling skills including but not limited to facilitating difficult decisions, crisis intervention and management. Through this course, the genetic counseling students will be introduced to a variety of psychological techniques and philosophies. Psychosocial aspects of genetic disease will also be studied (for example, guilt, shame). Content addressed in lecture format may be reinforced through structured role play.
- Applied Medical Genetics (1) - Seymour
 - This is an active learning workshop designed to provide students with the opportunity to apply the lecture content from Medical Genetics I. Through a variety of interactive assignments, students will practice all aspects of case management including pedigree taking, test selection and strategy, as well as opportunities to practice communication of this information through mock role play sessions. This class will require critical thinking skills and an understanding of Medical Genetics course materials. Most classes will involve a combination of the below activities in large or small group settings in the context of selected cases.
- Lab and Clinical Rotation (2)

Summer (7 Credits)

- Loss Across the Lifespan (3)

- Loss is a universal human experience, asserts Bertha Simos, yet we have a tendency to only acknowledge losses due to death as worthy of therapeutic attention. This course starts with a unique premise: all of life is about loss and therefore it is imperative for social workers to be skilled at identifying less recognizable losses as well as more common ones. The course will start with an overview of loss as a normal and necessary part of life and growth. It will provide the foundations of classical grief theory as well as its evolution through more recent understandings about continuing bonds, meaning making and the hazards of phase theories of grief. While death and dying at different stages in the lifespan will be addressed, each life stage will also be explored for the normative losses that occur at that stage.
- Clinical Rotation (4)

Fall Second Year (14 Credits)

- Genetic Counseling III: Current and Advanced Topics (2) - Seymour
 - This course will focus on advanced areas of genetic counseling including issues surrounding and impact of cutting edge genetic technologies. A section of the course will also be dedicated to further exploration of cultural and ethical issues in genetic counseling. Examination of current topics will be addressed through lectures, discussion of journal articles, and student presentations.
- Medical Genetics II (3) – Botti
 - Using a systems-based approach this course expands on content and concepts learned in Medical Genetics I. It builds a clinical knowledge base, including but not limited to, the etiology, presentation and natural history of genetic diseases. It will continue to discuss dysmorphology assessment, diagnosis, treatment/management, and prognosis of selected genetic conditions and birth defects streaming from an understanding of normal versus abnormal embryological development. The focus will be on biochemical genetics to allow students to learn about the diagnosis, treatment, management and prognosis of selected inborn errors of metabolism and newborn screening. Knowledge surrounding biochemical genetics, neurologic

and neuropsychiatric will be enhanced and students will integrate the knowledge gained to provide risk assessment, propose diagnostic strategies, and provide genetic counseling for these conditions. Students will build upon previous knowledge gained to consider ethical and psychosocial issues surrounding genetics, genetic testing and integrate the knowledge gained to provide risk assessment and propose diagnostic strategies for these conditions.

- Counseling Techniques for Genetic Counselors II (2) – Rispoli/Seymour
 - This course will focus on instruction, delivery, and practice of psychosocial assessment and counseling skills often employed during a genetic counseling session. Considerable course time will be spent processing and analyzing cases from clinical rotations. Students will be expected to critique and process their clinical experiences to enrich course material. Counseling concepts will also be practiced and reinforced through role play exercises.
- Research (3)
- Clinical Rotation (4)

Spring Second Year (10 Credits)

- Genetic Counseling IV: Genetic Counseling in the 21st Century (3) – Seymour
 - This course will focus on the professional issues surrounding the genetic counseling profession. Students will participate in a number of activities that will assist with securing a job upon graduation, including development of CV and information on successful interviewing. Other professional issues including billing and state licensure will be addressed by content experts. A key component of this course will include a placement with a genetic counselor working in a non-clinical setting in an effort to expose the student to a variety of job opportunities. The class will include several forums, providing the students the opportunity to present to and process with one another their work placements.
- Research (3)
- Clinical Rotation (4)

Research Thesis

Completion of a research project is a GCMP requirement. The goal of the research project is to (1) learn how to synthesize and critique the research literature; (2) formulate a specific hypothesis and determine an appropriate study design and analysis plan; (3) understand research methodology; and (4) organize research results in a coherent and meaningful manner.

The research project is driven by the interests of the individual student supported by the program faculty and/or clinical supervisors. Starting in the fall of the first year, students take an introductory graduate-level course in Epidemiology where they learn about study design, variables, and analysis. Then, in the spring of the first year, students take the Research Methods for Genetic Counseling course where they are guided in designing their thesis project, choosing a thesis committee, and writing a research proposal. By the end of the first year, students should have an approved thesis project and they can begin the process of obtaining approval by the Institutional Review Board (IRB). After IRB approval, student can begin collecting, analyzing, and writing the thesis. The research typically begins before the end of the summer.

Clinical Rotations

Clinical rotations are an essential component to the training of genetic counselors. The program at Rutgers demonstrates its commitment to clinical training by offering a variety of clinical training sites, spanning both years of training.

During year one, students will be assigned to work with a variety of genetic counselors to observe and begin to practice beginning skills. The goal of these assignments is to begin to apply the knowledge learned in class and appreciate what these beginning skills look like in a clinical setting. First year students will spend on average 3-4 days per month with a genetic counselor.

The main clinical rotations are held during the summer semester and then in the fall and spring of the 2nd year. Students receive 4 credit hours for spending a minimum of 20 hours of week at their clinical placement. These rotations are 10-12

weeks long as we believe that a lengthier clinical rotation allows for the most growth and exposure to a wide variety of genetic indications. Students will be assigned to work with experienced, board certified genetic counselors specializing in prenatal, pediatric, cancer, and other sub-specialties.

Some of our clinical rotations include:

- Rutgers Robert Wood Johnson Pediatrics
- Rutgers Robert Wood Johnson Division of Maternal Fetal Medicine
- Cancer Institute of New Jersey
- St. Peters Department Medical Genetics and Genomic Medicine
- Morristown Medical Center
- Meridian Health Cancer Genetic Counseling
- Monmouth Medical Center
- New Jersey Perinatal
- St. Joseph's Medical Center

We are excited to offer students the opportunity to work closely with genetic counselors working in a variety of settings. In addition to three unique hospital based rotations, in the Spring of the 2nd year, each student will also have the opportunity to work with a genetic counselor working in a non-hospital based role. An emerging trend in the genetic counseling work force is the increasing variety of job opportunities. Genetic counselors are expanding their role beyond the hospital and are working for a variety of genetic testing companies, in research, or other industry jobs.

As part of the Spring second year course, Genetic Counseling in the 21st Century, students will perform an additional "rotation" with a genetic counselor working in non-hospital based setting. This placement will occur over the course of the semester, with a minimum of 60 contact hours. As experiences are expected to vary among the students, class time will be dedicated to student discussion of the experiences.

Some examples of the companies we have partnered with for our Non-Hospital Rotations include:

- CooperGenomics
- GeneDx
- Genetic Prediction
- Genome Medical
- PWN Health
- 23andMe

Why Rutgers?

- **1. Reputation.** A degree from Rutgers speaks for itself! Rutgers University is rated in the top 5 for public universities in the Northeast and top 25 public universities in the nation. We are happy to offer in-state tuition to NJ residents.
- **2. New program** designed to train genetic counselors for the 21st century. Our faculty as created a program in response to the evolving and expanding genetic counseling profession. Our program is designed to train genetic counselors who are prepared to fulfill a variety of jobs, both in clinical and non-clinical settings.
- **3. Dedicated and energetic faculty** with great and varied experience. Our leadership and faculty have years of teaching and supervising experience in a variety of specialties. We are fortunate to have the wisdom and enthusiasm of such a dedicated group!
- **4. Clinical resources** of Rutgers Biomedical and Health Sciences (RBHS). The merger between Rutgers University and Robert Wood Johnson hospital opened the door for our students to have access to New Jersey's leader in academic health care. Our students will learn from academic professors from a variety of research and clinical specialties.
- **5. Exposure to diverse patient populations.** New Jersey is one of the top five diverse states in the country. Thus, our students gain in experience with working with a variety of patient populations during their training.
- **6. Over 20 clinical rotations - all in NJ!** Our students have access to a variety of clinical rotations all within short drive. Rutgers GCMP has a large network of internal and external rotation sites across the state.
- **7. Opportunity to work with genetic counselors in non-clinical settings.** For an entire semester, all second year student work closely with a genetic

counselor who works in industry, research, or in a lab based position. This additional rotation helps our students experience the ever growing field of genetic counseling.

- **8. Vibrant academic setting.** Housed in the School of Graduate Studies, our genetic counseling students meet and interact with students pursuing a variety of career paths. Students are able to take advantage of a variety of student resources and services, offered by the University.
- **9. Location, location, location.** Hop a train and in an hour or less be in NYC or Philadelphia. Rutgers is also a quick 30 minute drive to the Shore. Rutgers University – New Brunswick is centrally located to these destinations!
- **10. A graduate school experience that will lead to a great first job** in genetic counseling. Given today's hot job market, our graduates are mentored by and network with a variety of NJ genetic counselors. For students who may want to start their career in NJ, this is the program for you!

Program Leadership

Jessica Rispoli, MGC, CGC

Director

Jessica Rispoli is a board certified genetic counselor and is the Director of the Genetic Counseling Master's Program at Rutgers University. Ms. Rispoli received her Master's in Genetic Counseling from the University of Maryland. Before coming to Rutgers, Ms. Rispoli served as the Assistant Program Director at the University of Maryland for over ten years. She has over 15 years of clinical experience providing genetic counseling in oncology, pediatric, and neurology clinics.

Christine Seymour, MS, CGC

Assistant Program Director

Christine P. Seymour is a board certified genetic counselor and is the Assistant Director of the Genetic Counseling Master's Program at Rutgers University. Christy received her undergraduate degree in biology from the University of Scranton, followed by her master's degree in genetic counseling at Arcadia University. Before joining the leadership at Rutgers, she had over 15 years of clinical experience

providing genetic counseling in prenatal and pediatric clinics as well as the industry setting.

Gary Heiman, PhD

Director of Student Research

Dr. Gary Heiman is an Associate Professor in the Department of Genetics at Rutgers University where he serves as the Vice Chair and Undergraduate Director. He received a master's in Genetic Counseling and subsequently earned his Ph.D. in epidemiology from Columbia University, specializing in genetic epidemiology of neuropsychiatric disorders.

His research program focuses on understanding the relationship between neurological and psychiatric disorders. Dr. Heiman and others established the Tourette International Collaborative Genetics (TIC Genetics) study, a sharing resource of clinical, biomaterial, and genetic data of individuals with Tourette and their family members. The goal of this international study is to identify genetic (inherited) factors that play a role in causing TD and comorbid disorders such as Obsessive-Compulsive Disorder and Attention-Deficit/Hyperactivity Disorder. TIC Genetics brings together a team of clinicians, geneticists, and statistical geneticists from 24 sites across the US, Europe, and South Korea and is now the largest sharing cell and DNA repository for Tourette disorder (TD). Dr. Heiman serves on the TIC Genetics Executive Committee, heads the Data Coordinating Center, and the principal investigator at the Rutgers recruitment site.

Elena Ashkinadze, MS, LGC

Ms. Ashkinadze is a licensed and board certified genetic counselor who specializes in reproductive genetics. She received her genetic counseling degree from Sarah Lawrence College. She is the senior genetic counselor in her department and has been supervising genetic counseling students for over 15 years. In addition to her clinical work, Ms. Ashkinadze has played an active role in state-wide professional issues. She is the course director of the Foundations of Genetic Counseling: Reproductive Genetics course and serves on various GCMP committees.

Christina Botti, MS, LGC

Christina Botti is a licensed and board certified genetic counselor. She received her undergraduate degree in biotechnology at Rochester Institute of Technology followed by her master's degree in genetic counseling at Arcadia University. She currently serves as Adjunct Instructor in the Department of Pediatrics and Clinical Instructor in the Department of Obstetrics, Gynecology & Reproductive Sciences at Rutgers – Robert Wood Johnson Medical School.

Sherry Grumet, MA, MS, LGC

Sherry Grumet is a licensed, board-certified genetic counselor working as the Director of the LIFE Center at The Rutgers Cancer Institute of New Jersey. She received a B.S. in Cell Biology and Anthropology from the University of Illinois, a M.A. in Human Biology from Washington University in St. Louis, and a M.S. in Human Genetics and Genetic Counseling from Sarah Lawrence College. After graduation, Mrs. Grumet worked as a genetic counselor at Fox Chase Cancer Center, Mount Sinai School of Medicine at Englewood Hospital and Monmouth Medical Center. She has over 20 years of clinical experience in cancer risk assessment and genetic counseling.

Shama Khan, MPH, MS, LGC

Shama Khan is a board-certified and licensed genetic counselor currently working in Perinatal Genetics as a Research Study Manager for the Division of Maternal Fetal Medicine at Rutgers Robert Wood Johnson Medical School. Shama's role within the GCMP is project coordinator for the Alliance to Increase Diversity in Genetic Counseling (AID-GC) initiative, serving as the main liaison between Rutgers and other consortia programs. She also serves as a mentor to scholarship recipients. Shama received her Master of Science in Genetic Counseling from Arcadia University, an MPH in Epidemiology from Tulane School of Public Health and Tropical Medicine and an M.S. in Human Genetics from Tulane University School of Medicine. She is a member of the Human Genetics Association of New Jersey and her interests include the promotion of family health history awareness in the Muslim community.

Teaching Faculty

Molly Ciarlariello, MS, LGC

Molly Ciarlariello is a board-certified and licensed genetic counselor, currently working in perinatal genetics at Rutgers Robert Wood Johnson Hospital. She received her Master's degree at the University of Pittsburgh, and her BA in Genetics and Psychology at Rutgers University. She has previously worked in both pediatric and cancer genetics in Staten Island, NY. She is an active member of HGANJ and has helped create and coordinate expanded carrier screening outreach in the Rutgers community.

Sandra D'Elia, MS, LGC

Sandra D'Elia is a board certified genetic counselor working in the LIFE Center at The Rutgers Cancer Institute of New Jersey. Ms. D'Elia received her Bachelor of Arts degree in Genetics from Rutgers, The State University of New Jersey and her Master's degree in Genetic Counseling from Arcadia University. Her thesis focused on The Prevention and Detection of Breast Cancer in BRCA1/2 mutation carriers. She has clinical expertise in cancer risk counseling and genetic predisposition to cancer. After graduation Ms. D'Elia worked as a Cancer Genetic Counselor at Memorial Sloan Kettering Cancer Institute and has been providing cancer genetic counseling services through the LIFE Center since 2012. She oversees the outreach clinics in Hamilton and Princeton, NJ.

Christina Kresge, MS, LCGC

Christina (Bond) Kresge is a board certified and licensed genetic counselor currently working in pediatric genetics at the Rutgers New Jersey Medical School in Newark, NJ. She received her Bachelor of Science degree in Diagnostic Genetic Sciences from the University of Connecticut, and her Master of Science degree in Genetic Counseling from Sarah Lawrence College. In addition to providing pediatric genetic counseling services, she also provides prenatal counseling and cancer counseling in both English and Spanish, and is the clinic coordinator for the University Regional Metabolic Treatment Center at Rutgers New Jersey Medical School. She is treasurer of the Human Genetics Association of New Jersey, and has been a supervisor for genetic counseling students for five years.

Brianna Jeffreys, MS, LGC

Brianna Jeffreys is a board certified and licensed genetic counselor, currently working in the LIFE Center at the Rutgers Cancer Institute of New Jersey. She received her Master of Medical Science in Human Genetics and Genetic Counseling from Emory University in Atlanta, GA in May of 2018. Her thesis focused on developing an educational tool that could be used to provide genetic counseling to patients undergoing tumor genomic profiling at Emory's Winship Cancer Institute. After being influenced by her personal experience with a rare disease, Brianna helped to establish the first National Organization for Rare Disorders (NORD) Student Chapter on Emory's campus and served as the organization's first president. Prior to attending Emory, she obtained her Bachelor's degree in Genetics from Rutgers University and participated in the Genetic Counseling Certificate Program. She is excited to begin supervising students in near the future!

Melissa Gandhi, MS CGC

Melissa Gandhi is a board-certified and licensed genetic counselor at the Rutgers Cancer Institute of New Jersey. She received her undergraduate degree in Genetics with a minor in Psychology at Rutgers University, where she also received her Master's degree. She is an active member of HGANJ, and her interests include healthcare literacy and equity especially in underrepresented populations.

Relevant FAQs

Are scholarships available for incoming students?

Yes, we are pleased to offer merit-based scholarships to incoming students. The scholarship opportunities are likely to vary from year to year. More information about available scholarships will be discussed at the time of interviews. Rutgers students will also be eligible to work with our financial aid department for loan assistance.

How big is the Rutgers genetic counseling program?

Our program will accept approximately 10-12 students per year.