Curriculum for Genetics Counseling Program

Requirements:

1. Four full-time semesters and summer clinical work
2. 60 total credit hours
3. Seven clinical rotations
4. Research projects –
   A. Can be laboratory, clinical, development of educational materials, patient protocols
   B. Reviewed by research committee of at least three faculty members
5. Weekly research seminars

Curriculum: The curriculum includes knowledge of both medical and clinical genetics and their application. It provides breadth and depth of this knowledge base to insure students are prepared for clinical practice. A summary of the curriculum from the program website is:
“The Genetics Counseling Program at VCU Medical Center provides students with opportunities to gain experience in a variety of ways. Clinical training and curriculum provide exposure to many genetic conditions and the development of the practice-based competencies in the nine general content areas established by the American Board of Genetic Counseling. Design of clinical training allows the student to acquire more than the required number of cases to be eligible to take the American Board of Genetic Counseling certification examination. The students are provided with opportunities to work with increasingly complex cases, critical thinking experiences and ultimately independent case management. This begins with an observational role in the first semester, progresses to a participatory role in the second and third semesters and culminates in a fully supervised independent case management role by completion of the degree requirements. Students work with medical professionals including genetic counselors, physician geneticists, genetic fellows, other physicians, medical residents and other students.”

Instructional content: We evaluated the courses in the program to verify they cover the nine general content areas. Each VCU course corresponding to the content areas listed in the AGCG standards is listed below.

1. **Principles of Human Genetics**
   HGEN 501, 502 - Human genetics
   HGEN 527 – Medical Genetics

2. **Applicability of related sciences to Medical Genetics / Genomics**
HGEN – 501, 502 – Human Genetics
HGEN – 520 – Molecular and Cytogenetics – Practicum 2
HGEN – 525, 526 – Practice of Genetic Counseling
HGEN – 527 – Medical Genetics
HGEN – 622 – Cancer Genetic Counseling

3. **Principles and practice of Clinical / Medical genetics**
   - HGEN – 502 – Advanced Human Genetics
   - HGEN – 525 – Practice of Genetic Counseling
   - HGEN – 526 – Practice of Genetic Counseling (literature review)
   - HGEN – 600 – Clinical Genetics
   - ANAT – 691 – Embryology

4. **Psychosocial Content**
   - CLED – 601 – Theories of Counseling
   - HGEN – 526 – Practice of Genetic counseling

5. **Social, Ethical and Legal Issues in Genetics**: privacy issues, discrimination legislation, code of ethics
   - HGEN 501 – Human Genetics
   - HGEN 525, 526 – Practice in Genetic Counseling
   - Clinical Rotations and weekly Clinical Conferences

6. **HealthCare Delivery Systems and Principles of Public Health**
   - HGEN – 525 – Practice of Genetic Counseling
   - Clinical services – Massey Cancer Center
   - Clinical rotations – new techniques and testing
   - Professional Development/Self-Care: CV development, negotiation techniques, stress management, ABGC certification exam readiness, self-care topics to prepare students for the emotional as well as intellectual strain of clinical practice

7. **Education**
   - HGEN – 690 – Special Topics in Genetics - Genetic Research Seminar
   - HGEN – 697 - Directed Research in Genetics

8. **Research methods** - funding and publication topics (grant writing, data analysis, abstract development, preparation of a manuscript for publication)
   - HGEN – 690 – Special topics in Genetics - Genetic Research Seminar presentation to faculty in spring of senior year – manuscript and oral defense required
   - HGEN – 697 - Directed Research in Genetics with research advisor
   - SLWK – 609 – Social Research Methods

9. **Professional Development / Self-Care**: CV development, negotiation techniques, stress management, ABGC certification exam readiness, self-care
topics to prepare students for the emotional as well as intellectual strain of clinical practice.
CLED – 602 – Techniques in Counseling
Most students are members of the American Society of Human Genetics, American College of Medical Genetics or the National Society of Genetic Counselors
Clinical rotations, formal organizational meetings with director (quarterly)
HGEN - 525,526

Electives:
HGEN - 602 – Animal models of disease
HGEN - 620 – Behavioral Genetics
HGEN - 517 – Intro to Statistical Programming in R
HGEN – 691-801 Statistics for Genetics Studies I/II
HGEN – 603 - Mathematical Statistics
HGEN – 614 – Molecular Genetics
HGEN – 619 – Quantitative Genetics
IDDS - 691 –Special Topics in Developmental Disabilities – comprehensive team taught course in public health, DD education and health care disparities

The Genetic Counseling curriculum at VCU was compared to curriculum listed on websites of several other universities. While we had much more information available to us about the VCU program, it appears comprehensive and in many ways similar to other programs.