Principles of Human Genetics (PoHG) – FOM1
FM-101 40 course hours
Updated March 2021

Human genetics underlies almost every aspect of human health. Recent advances in human genome sciences makes knowledge of this fast-paced field imperative for future clinicians and researchers. PoHG course is offered in early fall of FOM1 that focuses on clinically relevant human genetics with emphasis on the basic underlying scientific mechanisms and concepts, including recent advances in epigenetics, genomics and translational genetics. This course cover foundational genetics concepts like chromosomal, single gene, multifactorial and non-mendelian inheritance and apply that knowledge to applied human genetics and translational medicine covered in the later part of the course. This course will provide a framework for understanding a fast growing and highly technical field, and an appreciation of how current genomics research impacts most aspects of medicine, biomedical research, and public health policy. The course presumes a general knowledge of the basic paradigm of molecular biology (DNA makes RNA makes protein) (see Jump Start material). The course includes small group sessions, independent learning modules and patient sessions which allows students to interact with patients with genetic disorder. Many concepts overlap with content taught in the concurrent BWCT course. PoHG and BWCT courses coordinate the sessions to make it easier to understand the genetic basis of some disorders. Evaluations will test not only knowledge base, but problem-solving skills and the ability to seek and analyze appropriate information. Problem solving will involve clinical, molecular and quantitative data.

Upon completion of the Principles of Human Genetics course, MS1 students will be able to:

1. Recognize the pervasiveness of human genetics throughout medicine and apply the important foundational genetics concepts and vocabulary to the larger fields of applied human genetics and translational medicine as well as their future medical education and careers (Physician as Scientist, Clinical Problem Solver, Professional and Person)
2. Apply foundational human genetics concepts and problem-solving skills related to familial recurrence risks and inheritance on problem sets, quizzes, exams and small group sessions using clinical, molecular and quantitative data (Physician as Scientist, Clinical Problem Solver and Person)
3. Research and interpret human genetics information independently using web-based medical genetic resources and published literature (Physician as Scientist, Clinical Problem Solver, Professional, and Person)
4. Explain effectively foundational genetics concepts to patients, lay-people and co-workers (Physician as Scientist, Communicator, Clinical Problem Solver, Professional, Advocate, and Person)
5. Identify the ethical, legal, and social issues related to human genetics and recognize the stigma connected to sensitive topics (Physician as Scientist, Communicator, Clinical Problem Solver, Professional, Advocate, and Person)

Co-Directors:

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