

MEDG 505 2022W GENOME ANALYSIS

Investigation of genetic information as it is organized within genomes, genetic and physical map construction, sequencing technologies, gene identification, proteomics, database accessing and integration, applications to medicine, functional organization of genomes from contemporary, historic, and evolutionary perspectives.

Credit value: 3

Prerequisite: BIOL 234 (Fundamentals of Genetics).

COURSE COORDINATORS

Dr. Phil Hieter

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Office hours: By appointment

Dr. Mike Kobor

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Office hours: By appointment

COURSE TEACHING ASSISTANT

Kevin Jeffers

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Office hours: Tuesdays (10am to 12pm) and Wednesdays (6pm to 8pm) through Zoom. Daily by e-mail.

CLASS FORMAT

Classes are held on **Fridays, from 9:30am to 12:30pm**. The course consists of guest lectures by invited speakers on their field of interest within genomics. Each speaker selects two papers for students to present and discuss with the class.

09:30am	Lecture by faculty member and on-going discussion
10:35am	More discussion
10:50am	Break
11:10am	Student presentation #1: 25 minutes +10 min discussion
11:45am	Student presentation #2: 25 minutes +10 min discussion

LEARNING MATERIALS

All reading materials will be available as online documents in the course home page on Canvas.

2020W SCHEDULE

Week	Date	Speaker and topic	E-mail
1	Jan 13, 2023	Phil Hieter, Kevin Jeffers Intro to Genome Analysis, Genetic Networks, 1000 genomes	hieter@mssl.ubc.ca
2	Jan 20, 2023	Steve Jones Personal Genomics	sjones@bcgsc.ca
3	Jan 27, 2023	Gregg Morin Proteomics for biology and gene function	gmorin@bcgsc.ca
4	Feb 3, 2023	Jan Friedman Rare Disease Genomics	jan.friedman@ubc.ca
5	Feb 10, 2023	Inanc Birol Antimicrobial Resistance	ibirol@bcgsc.ca
6	Feb 17, 2023	Marco Marra Cancer Genomics	mmarra@bcgsc.ca
7	Feb 24, 2023	Midterm break	kjeffers@cmmmt.ubc.ca
8	Mar 3, 2023	Midterm assignment All students: presentations of Wikipedia articles	
9	Mar 10, 2023	Mike Kobor Epigenomics	michael.kobor@ubc.ca
10	Mar 17, 2023	Colin Ross Personalized Medicine: Pharmacogenomics and Gene Therapy	colin.ross@ubc.ca
11	Mar 24, 2023	Will Hsiao Microbial Genomics and Public Health	william.hsiao@bccdc.ca
12	Mar 31, 2023	Holly Longstaff Ethical, legal, social issues: Genomes	holly.engageassociates@gmail.com
13	Apr 7, 2023	Final project TBD	kjeffers@cmmmt.ubc.ca

COURSE ASSIGNMENTS

▪ Student presentations

Students will give a 25-minute presentation of a paper assigned by the guest speaker and then lead 5 to 10 minutes of discussion with the class. Presentations should include the following items:

- Background
- Methods
- Results, analysis
- Conclusion
- Critique
- Discussion points

▪ Midterm assignment

Students will work in pairs to write and publish a Wikipedia article on a novel technology in genomics. They will present their work in class on March 3, 2023.

▪ Final project

To be determined each year before the mid-term break, and due after classes are completed.

GRADING

The grading scheme is a simple formula. Come prepared for class, read the papers carefully, ask questions, contribute.

25%	Paper presentation
25%	Class participation
25%	Midterm assignment: Wikipedia article
25%	Final project

UNIVERSITY POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the

policies and how to access support are available at <https://senate.ubc.ca/policies-resources-support-student-success>.

ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓ə m (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.