

What's in your genes? (Spring 2015)

FFYS 197ANML3 - 01 (19759)

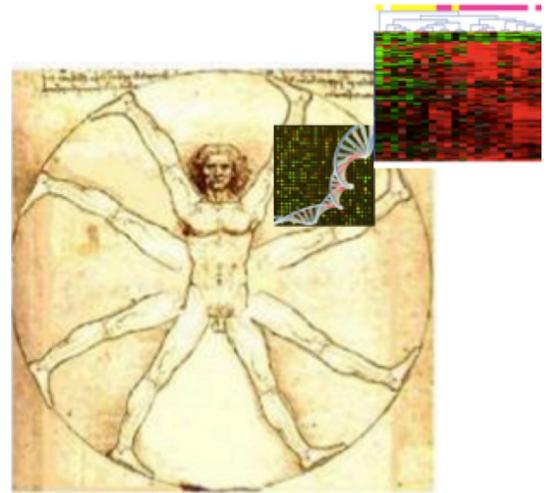
Times: Th 8:30AM - 9:20AM (01/20/2015 - 04/29/2015)

Location: Hasbrouck Lab Add room 106

Changed to ISB 427R beginning 1/29/2015

Instructor: D. Joseph Jerry (ISB427P),

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1. Course description and goals

Discovery and development of antibiotics and vaccines revolutionized healthcare in the 20th century and with it, changed the impact of once deadly infectious diseases. The 21st century marked the dawn of genomics which holds similar promise to revolutionize our understanding of health and disease. The course will discuss the tools used to understand what is coded in our DNA as well as how this genetic plan is modified throughout our lives by exposures that define the “epigenetic” instructions --- the modifiable script in our DNA. Topics from recent news reports will be used to explore the impact of genetic testing and the promise for personalized medicine.

2. Textbook: Selected readings from

- “The \$1,000 Genome” by Kevin Davies (ISBN 978-1-1465-6959-6)
- “The Youngest Science” by Lewis Thomas (ISBN0-670-79533-X)
- Primary journal articles available on Moodle (<https://moodle.umass.edu/>)

3. Evaluation and Grading:

The class will work collaboratively to prepare articles suitable for submission to a newspaper to inform the public on the history, present state and prospects for the role of genomics in our lives. These should provide a balanced discussion of the potential and the risks that genomic information offers.

- 50% Class attendance and participation. As this is a seminar-style, it requires students to be prompt, prepared and share in the discussions.
- 50% Preparation of an article that would engage an audience typical for those reading a newspaper.

4. Class schedule

#	Date	Instructor	Topic
1	Th, Jan 22	D. Joseph Jerry	How big is the genome and who are Craig Venter and Jim Watson? (Chapters 1-2 of \$1,000 Genome)
2	Th, Jan 29	D. Joseph Jerry	Genomics timeline. (Chapters 1-2 of \$1,000 Genome)
3	Th, Feb 5	D. Joseph Jerry	Cancer genetics --- BRCA1/2 testing Assignment: Find resources explaining topics in genetics
4	Th, Feb 12	D. Joseph Jerry	Cease and desist (Chapt 8-9 of \$1,000 Genome) --- Expectations vs actionable information.
5	Th, Feb 19	D. Joseph Jerry	Discussion of resources students find. Selecting topics for news articles.
6	Th, Feb 26	Jacob Mayfield	Mathematics in the 2015 th dimension? Interpreting genomic data.
7	Th, Mar 5	D. Joseph Jerry	What's NOT in your DNA? Nature vs Nurture.
8	Th, Mar 12	D. Joseph Jerry	Review classical epigenetics experiments.
	Th, Mar 19		No class, Spring break
9	Th, Apr 2	Nagendra Yadava	Metabolism and epigenetics
10	Th, Apr 9	Nagendra Yadava	Metabolism and epigenetics

11	Th, Apr 16	D. Joseph Jerry	Review of genetics past, present and future
12	Th, Apr 23	D. Joseph Jerry	Review newspaper articles in class
13	Th, Apr 30		Reading period begins

4. Academic honesty policy

(URL: http://www.umass.edu/dean_students/downloads/AcademicHonestyPolicy.pdf)

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. [See Appendix B for detailed examples of behavior that constitutes academic dishonesty.] Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. [See Appendix C for some suggested ways to deal with issues of academic integrity.] Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. The procedures outlined below are intended to provide an efficient and orderly process by which action may be taken if it appears that academic dishonesty has occurred and by which students may appeal such actions.

Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent.