

Fall 2018

# BIOL 320-H01-H03: Discovering Biological Research

Simon Garnier, Kirsten Severi

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### BIOLOGY 320 H01 - H03: DISCOVERING BIOLOGICAL RESEARCH

<b>INSTRUCTORS:</b>	Dr. Simon Garnier & Dr. Kristen Severi	<b>PHONE:</b>	973-596-8371 [Garnier] 973-596-5307 [Severi]
<b>OFFICE:</b>	Central King Building 428A [Garnier] Central King Building 420A [Severi]	<b>EMAIL:</b>	<a href="mailto:garnier@njit.edu">garnier@njit.edu</a> <a href="http://www.theswarmmlab.com">http://www.theswarmmlab.com</a> <a href="mailto:severi@njit.edu">severi@njit.edu</a> <a href="https://kristenseveri.wixsite.com/severilab">https://kristenseveri.wixsite.com/severilab</a>
<b>OFFICE HOURS:</b>	R: 3:00pm -4:00pm [Garnier] R: 3:00pm -4:00pm [Severi]	<b>COURSE SCHEDULE:</b>	M,W: 11:30AM – 12:50PM <a href="#">course times &amp; locations</a>
		<b>COURSE WEBSITE:</b>	<a href="http://moodle.njit.edu">http://moodle.njit.edu</a>

#### COURSE DESCRIPTION:

Success in the constantly evolving field of biology necessitates staying current in scientific literature. This requires competency in skills such as analysis of primary sources, synthesis of information from multiple sources, and oral and written communication skills. This course focuses on these competencies. Students will develop skills need to read and analyze scientific literature, and to communicate science. Each semester the content theme of the course will change depending on the expertise of the faculty member teaching the course. This course is a prerequisite for NJIT's Honors Capstone course (BIOL 495).

**COURSE PREREQUISITES:** Hum 102, R120:201/202, and BIOL 205/206.

**REQUIRED TEXTBOOKS:** None

**RECOMMENDED TEXTBOOKS:** "Reading Primary Literature: A practical guide to evaluating research articles in biology" by Christopher M. Gillen – ISBN-13: 978-08053-4599-5 ISBN-10: 0-8053-4599-X.

#### LEARNING EXPECTATIONS AND ASSESSMENT:

This course is designed to introduce students to primary literature in the research sciences and enable to find, read, and understand scholarly papers that relate to their interests and assignments. During the first half of the course, class meetings will consist of a few lectures that will cover essential aspects of primary literature organization and understanding, and of directed exercises and assignments aimed at practicing primary literature reading and summarizing. Students are expected to complete all assigned reading in advance of the class meeting.

The second half of the course will focus on producing popular science pieces (short videos, podcasts, blog posts) that will explain in layman's terms a recent scientific finding on a topic chosen by teams of 2-4 students and approved by the instructors. Each team will design and produce all the components of their respective popular science pieces. The resulting pieces will be displayed on the class website. A selection of them will be showcased on the NJIT website.

At the end of this course students should have the necessary skills to:

- 1) Read, analyze and interpret scientific data.
- 2) Give an effective scientific presentation of a scientific result or concept.
- 3) Communicate scientific facts through audio, video and written media.
- 4) Find and evaluate scientific literature relevant to their interests and needs.

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### LEARNING EXPECTATIONS AND ASSESSMENT CONT'D:

This course will fulfill the following NJIT Institutional Learning Goals (<https://www5.njit.edu/irp/assessment/index.php>):

1. Research-based Inquiry: Students employ investigative methods
2. Collaboration: Students work effectively in teams to engage multidisciplinary perspectives
3. Engagement: Students are active and committed learners

It will also fulfill the following Program Learning Goals in Biology:

1. Analyze and interpret in writing scientific information gathered through laboratory, field, and library research.
2. Speak effectively about scientific topics, issues, and problems in formal and informal contexts.
3. Interact with others in a skilled, cooperative fashion to discuss issues and solve problems.

Finally, this course will improve the following Core Competencies of the students

(<https://www5.njit.edu/irp/assessment/index.php>):

1. Writing, Reading, and Critical Thinking
2. Information Literacy

### GRADING POLICY & SCALE:

- Assignments after each class will count for 50% of the final grade. Assignments will be graded using a PASS/FAIL scale.
- The final project will count toward the remaining 50% of the final grade. This includes participation in the project discussions, quality of the final project and quality of the final presentation of the project.

ASSIGNMENT	PERCENTAGE	GRADING SCALE			
Participation	20%	A	88-100	C	60-66
Assignments	20%	B+	81-87	F	0-59
Midterm Exam	30%	B	74-80		
Presentation & Blog	30%	C+	67-73		
<b>TOTAL</b>	<b>100%</b>				

### CLASS POLICIES:

- ☐ **Cell Phones:** The use of cell phones during class or exam times is prohibited.
- ☐ **Makeup Exam Policy:** There will be no makeup exams, except in rare situations where the student has a legitimate reason for missing an exam, including illness, death in the family, accident, requirement to appear in court, etc. The student must notify the Biological Sciences office and the Instructor that he/she will miss an exam. In all cases, the student must present proof for missing the exam TO THE DEAN OF STUDENTS OFFICE, e.g., a doctor's note, police report, or court notice, etc., clearly stating the date and times.
- ☐ **Academic Integrity:** Students are reminded of the Honor Code each one has agreed to abide by (at Rutgers or NJIT). Violations of Academic Integrity will be dealt with according to the guidelines indicated in the NJIT Academic Honor Code (<https://www.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>). Please re-read Article III of the Honor Code (page 4), which describes conducts that are considered unacceptable (cheating, violating the US Copyright law, etc.). Rutgers has similar rules (<http://www.ncas.rutgers.edu/oas/ai>).

## BIOLOGY 320 H01- H03: DISCOVERING BIOLOGICAL RESEARCH

### CLASS MEETS:

Monday & Wednesday, 11.30am to 12.50pm. When necessary, lectures will take place in CKB 116 (section H01 & H03 together). The rest of the time, section H01 & H03 will work separately in CKB 310 and 114 respectively.

### COURSE OUTLINE:

WEEK			CHAPTER - TOPIC
1	M,W	5-Sept.	Intro Lecture + Guided Exercise: Finding Scientific Literature
2	M,W	10-Sept.	Guided Exercises: Paper Summary I + Method Description
3	M,W	17-Sept.	Guided Exercises: Result Summary + Paper Summary II
4	M,W	24-Sept.	Story Telling Lecture + Guided Exercise: Explain Like I'm Five I
5	M,W	1-Oct.	Guided Exercise: Explain Like I'm Five II & III
6	M,W	8-Oct.	Team Formation + Project Selection & Preparation
7	M,W	15-Oct.	10-min Project Presentation + Collective Review
8	M,W	22-Oct.	Tools for Audio and Video Edition Lecture I & II
9	M,W	29-Oct.	Storyboard + Outline Preparation + Collective Review of Progress
10	M,W	5-Nov.	Storyboard + Outline Preparation + Collective Review of Progress
11	M,W	12-Nov.	Writing + Filming + Audio Recording + Collective Review of Progress
12	M,W	19-Nov.	Writing + Filming + Audio Recording + Collective Review of Progress
13	M,W	26-Nov.	Writing + Filming + Audio Recording + Collective Review of Progress
14	M,W	3-Dec.	Final Collective Review + Final Project Corrections
15	M,W	10-Dec.	Public Final Project Presentation
<b>FINALS:</b>			<b>FINALS WEEK: DECEMBER 15-21,2018</b>

Final project is due Wednesday, December 12, 2018.