Neural Science Honors Seminar — Spring 2016

NEURL-UA.301

Time: Tuesdays 2:00 – 4:00
Location: Meyer Hall, Room 815

Jan 26	1.	Research Foundations: Experimental Design, and Scientific Epistemology *Reading: Hailman and Strier, Ch. 1 - How to Plan Research*
Feb 2	2.	Student Oral Presentations of Research Plan *Each student presents a 5-min research statement, and offers feedback for other presenters*
Feb 9	3.	Exploring the Mentor-Trainee Relationship Discussion: What are the benefits and challenges of collaboration in science? *Reading: Macrina, Ch. 8 - Collaborative Research*
Feb 16	4.	Science Writing *Reading: Hailman & Strier, Ch. 3 - How to Write a Research Report*
Feb 23	5.	Authorship and Publication Practices *Reading: Macrina, Ch. 4 - Authorship and Peer Review* **Journal club article selection due* **Final paper: Introduction due*
Mar 1	6.	Student Journal Club presentations I **1-page journal club link to student's research due*
Mar 8	7.	Student Journal Club presentations II **1-page journal club link to student's research due*
Mar 15	**	SPRING BREAK **
Mar 22	8.	Responsible Conduct of Research — Research Misconduct *Reading: Macrina, Ch. 1 - Methods, Manners, and the Responsible Conduct of Research* *Ch. 2 - Ethics and the Scientist* **Final paper: Methods due*
Mar 29	9.	Ethical Treatment of Research Subjects *Reading: Macrina, Ch. 5 - Use of Humans in Biomedical Experiments* *Ch. 6 - Use of Animals in Biomedical Experiments*
Apr 5	10.	Three-Minute Student Research Presentations Best Practices for Posters and Talks *Reading: Hailman and Strier, Ch. 4 - How to Present Research*
Apr 12	11.	Data Acquisition, Management, and Analysis *Reading: Macrina, Ch. 11 - Scientific Record Keeping* **Final paper: Results and Figures due*
Apr 19	12.	Student Research Presentations and Class Critiques I
Apr 26	13.	Student Research Presentations and Class Critiques II
May 3	14.	Survival Skills for Research-Inspired Careers **Final Paper due*

Text: Hailman, J.P. and Strier, K.B. Planning, Proposing, and Presenting Science Effectively. Cambridge University Press, Cambridge, 2006.

Macrina, F.L. Scientific Integrity, 3rd Ed., ASM Press, Washington, 2005

Grading:

Preliminary statement and review of research goals.....5%
Each student presents a 5-min research statement, and offers feedback for other presenters.

Journal club
Each student chooses an effective research article, and leads a presentation. Class members provide constructive feedback, and discuss the implications of the article. The presenter must manage all of this within 15 mins.
Student submits one-page summary of how the article is relevant to his/her research.

Individual oral presentation.....10%
Class participation.....10%
1-page written account of link to student's research.....4%

Research oral presentation (3 mins).....10%
Each student gives a 3-min presentation of his/her laboratory research, with just one slide, and offers feedback for other presenters.

Research oral presentation (10 mins)
Each student gives a 10-min presentation of his/her laboratory research.
Class members ask questions, and critique the presentation (5 mins).

Individual presentation.....20%
Class participation.....10%

Final research paper
To be submitted electronically no later than 5pm, May 3, 2016.
The paper may serve as a preliminary draft of the Honors Thesis; further details in class.

Preliminary Introduction.....2%
Preliminary Methods.....2%
Preliminary Results and Figures.....2%
Final paper.....25%

TOTAL:.....100%

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