

Neural Science Honors Seminar (NEURL-UA.301) — Fall 2016

Time: Tuesdays 2:00 – 4:00

Location: Meyer Hall, Room 807

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| Sep 6 | 1. Research Foundations: Experimental Design, and Scientific Epistemology
<i>Reading: Hailman and Strier, Ch. 1 - How to Plan Research</i> |
| Sep 13 | 2. Presenting Research: Organization and Presentation Skills
Student Oral Presentations of Research Plan
<i>Each student presents a 5-min research statement, and offers feedback for other presenters</i> |
| Sep 20 | 3. Science Writing
Overview of Writing Tutor Program (w/ Natasha Zaretsky)
<i>Reading: Hailman & Strier, Ch. 3 - How to Write a Research Report</i> |
| Sep 27 | 4. Exploring the Mentor-Trainee Relationship
Discussion: What are the benefits and challenges of collaboration in science?
<i>Reading: Macrina, Ch. 8 – Collaborative Research</i> |
| Oct 4 | 5. Responsible Conduct of Research
<i>Reading: Macrina, Ch. 1 - Methods, Manners, and the Responsible Conduct of Research</i>
<i>Ch. 2 - Ethics and the Scientist</i>
<i>*Final paper: preliminary Introduction due</i> |
| Oct 11 | ** NO CLASS – MONDAY SCHEDULE ** |
| Oct 18 | 6. Authorship and Publication Practices
<i>Reading: Macrina, Ch. 4 - Authorship and Peer Review</i>
<i>*Journal Club article selection due</i> |
| Oct 25 | 7. Student Journal Club Presentations
<i>*1-page Journal Club link to student's research due</i> |
| Nov 1 | 8. Ethical Treatment of Research Subjects
<i>Reading: Macrina, Ch. 5 - Use of Humans in Biomedical Experiments</i>
<i>Ch. 6 - Use of Animals in Biomedical Experiments</i>
<i>*Final paper: preliminary Methods due</i> |
| Nov 8 | 9. Oral Presentation Skills: Best Practices for Posters and Talks
<i>Reading: Hailman and Strier, Ch. 4 - How to Present Research</i> |
| Nov 15 | ** NO CLASS – SFN CONFERENCE ** |
| Nov 22 | 10. Three-Minute Student Research Presentations |
| Nov 29 | 11. Data Acquisition, Management, and Analysis
<i>Reading: Macrina, Ch. 11 - Scientific Record Keeping</i>
<i>*Final paper: preliminary Results and Figures due</i> |
| Dec 6 | 12. Student Research Presentations and Class Critiques |
| Dec 13 | 13. Survival Skills for Research-Inspired Careers
<i>*Final Paper due</i> |

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 research4%

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 presentation20%
Class participation.....10%

Final research paper

To be submitted electronically no later than 5pm, Dec 13, 2016.

The paper may serve as a preliminary draft of the Honors Thesis; further details in class.

Preliminary Introduction.....2%
Preliminary Methods2%
Preliminary Results and Figures2%
Final paper25%

TOTAL:..... 100%

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