ESM 512: Research ethics and conduct

Instructor: Mark Buntaine
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Course hours and location: Monday and Wednesday, 3-4pm, Bren 2436
October 2nd - November 1st (10 sessions)

Course credit: 2 credit

Assessment:
- Contributions to class discussions 70%
- Memo on ethical issues in research 30%

Course description:
This course introduces the ethical principles that apply to scientists to incoming PhD students of the Bren School. We will discuss key concepts and cases in research conduct and research ethics. The goal of the course is to provide a good foundation in the principles of ethical research practice, while exploring themes not taught in traditional approaches like open science, reproducible workflow, positionality, and inclusion.

Key Resources:
- Committee on Publication Ethics, COPE database on publication ethics

Course content:

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<th>Content</th>
<th>Readings</th>
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<tr>
<td>1</td>
<td>Introduction: goals of ethical research</td>
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<td></td>
<td>• Trust</td>
<td>Resnik 2020</td>
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<td>• Transparency</td>
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<td>• Equitable credit and benefit sharing</td>
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<td>• Inclusive and diverse scientific community</td>
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<td>Plagiarism</td>
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<td></td>
<td>• What constitutes plagiarism?</td>
<td>Helgesson &amp; Erikkson 2014</td>
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<td>• Self-plagiarism</td>
<td>Mann et al. 2023</td>
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<td>• Historical cases and examples</td>
<td>Case: COPE 21-01</td>
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<td>• Large language models</td>
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<td>Section</td>
<td>Topic</td>
<td>Questions</td>
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| 3 | Falsification and fabrication | - What is falsification and fabrication?  
- What leads to falsification and fabrication?  
- What about selective reporting, p-hacking, etc.? |
| 4 | Authorship | - What contributions warrant authorship?  
- Various norms and disciplinary traditions  
- Author ordering  
- Ghost authorship and honorary authorship |
| 5 | Open science, data sharing, and confidentiality | - Emerging norms about data sharing  
- Open science practices that promote integrity  
- Pre-registration, selective reporting, etc. |
| 6 | Advising, mentoring, and harassment | - Ethical obligations of advisors and advisees  
- “Managing up”  
- Reporting requirements and harassment  
- Bullying |
| 7 | Inclusive science | - Ethics of equity and inclusion  
- Structural racism and science  
- Best practices for inclusive science |
| 8 | Human subjects & bioethics | - Ethical issues involving human subjects  
- Treatment of personal information and privacy  
- Helsinki declaration  
- Protocols / IRB requirements |
| 9 | Positionality, partnerships, and participants | - Privilege and knowledge production  
- International partnerships  
- Working with vulnerable communities |
| 10 | Potential ethical issues in individual research context | student presentations |
Supplementary reading materials

stapels-audacious-academic-fraud.html?_r=1&pagewanted=all&

Nature commentary: Repairing research integrity.  
http://www.nature.com/nature/journal/v453/n7198/full/453980a.html

FiveThirtyEight article: How Two Grad Students Uncovered An Apparent Fraud — And A Way To Change
uncovered-michael-lacour-fraud-and-a-way-to-change-opinions-on-transgender-rights/

NY Times article: Doubts About Study of Gay Canvassers Rattle the Field.  
https://www.nytimes.com/2015/05/26/science/maligned-study-on-gay-marriage-is-shaking
trust.html?_r=0