Types of papers

• Review papers or chapters
• Case reports
• Peer reviewed papers
  – Short or rapid communications
  – Full communication
Components of a Paper

- Title
- Authors
- Address
- Abstract
- Introduction
- Results
  - Text
  - Figures
- Discussion
- References
- Acknowledgements
Major areas of concern

• Title
• Authors
• Address
• Abstract
• Introduction
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Major areas of concern

• Authorship
• Conflicts of interest
• Dual publication
• Plagiarism
• Falsification and fabrication
• Scholarship
• Quality of writing
• Quality of tables and figures
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Who is an author?

- Program director – provided funds
- Lab director – conceived of question
- Colleague #1 – provided critical antibody
- Grad student – data collection, analysis, 1st draft
- Research assistant – data collection
- Colleague #2 – edited manuscript
What are the criteria?

1. Intellectual contribution
2. Understanding of the content
3. Approval of final draft

How many of these criteria are required?
Who is an author?

- **Program director** – provided funds
- **Lab director** – conceived of question
- **Colleague #1** – provided critical antibody
- **Grad student** – data collection, analysis, 1st draft
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- **Colleague #2** – edited manuscript
What else should be identified?

• Source of funding
• Other sources of assistance (with permission!)
  – Reagents
  – Advice
  – Technical help
• Potential conflicts of interest
Major areas of concern

• Authorship
• Conflicts of interest
• Dual publication
• Plagiarism
• Falsification and fabrication
• Scholarship
• Quality of writing
• Quality of tables and figures
What constitutes dual publication?

<table>
<thead>
<tr>
<th>Contribution #1</th>
<th>Contribution #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference proceeding</td>
<td>Research publication</td>
</tr>
<tr>
<td>English</td>
<td>Another language</td>
</tr>
<tr>
<td>Initial study</td>
<td>Study with more groups</td>
</tr>
<tr>
<td>Initial study</td>
<td>Study with much larger “n”</td>
</tr>
</tbody>
</table>

What is the harm in dual publication?

What to do if comparisons useful?
Major areas of concern

• Authorship
• Conflicts of interest
• Dual publication
• **Plagiarism**
• Falsification and fabrication
• Scholarship
• Quality of writing
• Quality of tables and figures
Is it plagiarism?

We found that the incidence of drug abuse peaks at 18 yrs of age (Jones and Liu, 2011).

• Drug abuse peaks at 18 years of age.
• Drug use is highest at 18 years.
• Risky behavior seems to increase in late teens.

○ Quotation marks?
○ Citation?
○ Nothing
Is it plagiarism?

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What is the harm in plagiarism?
Major areas of concern

- Authorship
- Conflicts of interest
- Dual publication
- Plagiarism
- Falsification and fabrication
- Scholarship
- Quality of writing
- Quality of tables and figures
"You are completely free to carry out whatever research you want, so long as you come to these conclusions."
Falsification and fabrication

- What are they?
- How frequent?
- What is the danger?
Daniele Fanalii
“How many scientists fabricate and falsify research?”

- Meta-analysis of 18 surveys
- Frequency of own misbehavior behavior
  - 2% researchers admitted fabricating/falsifying
  - 34% admitted to other misconduct
- Frequency of misbehavior of *colleagues*
  - Estimate that 14% committed falsification
  - Estimate that 72% committed other misconduct
- Authors believe estimates are conservative
Who is hurt?

• You
• Co-authors
• Lab members
• Institution
• The field
• The public at large
Major areas of concern

- Authorship
- Conflicts of interest
- Dual publication
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- Scholarship
- Quality of writing
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Citing the work of others

• When?
Citing the work of others

• **When?** Whenever credit is due.
Citing the work of others

• **When?** Whenever credit is due.
• **What?**
Citing the work of others

• When? Whenever credit is due
• What? Include earliest peer-reviewed papers

What if not readily accessible?
Citing the work of others

• When? Whenever credit is due
• What? Include earliest peer-reviewed papers
• How many?
Citing the work of others

• When? Whenever credit is due
• What? Include earliest peer-reviewed papers
• How many? As needed up to max. of ~6-7

What is the harm in poor scholarship?
Major areas of concern

• Authorship
• Conflicts of interest
• Dual publication
• Plagiarism
• Falsification and fabrication
• Scholarship
• Quality of writing
• Quality of tables and figures
NO, NO, IF YOU MAKE THE PAPER TOO EASY TO READ, EVERYONE WILL KNOW HOW YOU GOT THE RESULTS!
What does it mean?

“The farmer threw the cow over the fence some hay.”
What does it mean?

“The farmer threw the cow over the fence some hay.”

“Being in a dilapidated condition, I was able to buy the house cheaply.”

– from Stunk and White, *Elements of Style*
What does it mean?

“The farmer threw the cow over the fence some hay.”

“Being in a dilapidated condition, I was able to buy the house cheaply.”

– from Stunk and White, *Elements of Style*

“The physician failed to provide intravenous fluids to the patient although he was severely dehydrated.”
Why so many words?

- The samples were analyzed by the student.
- The student analyzed the samples.
Just say it!

• It is believed that the pharmacological agent may possibly increase blood pressure.

• The drug may increase blood pressure.
Good writing

• Precise
• Concise
• Active
Major areas of concern

- Authorship
- Conflicts of interest
- Dual publication
- Plagiarism
- Falsification and fabrication
- Scholarship
- Quality of writing
- Quality of tables and figures
Immunohistochemistry

TH ipsi

Western Blot analysis
Percent of allegations involving contested images

2.5% (1989-90)

26% (2001)

Krueger JW 2002
<table>
<thead>
<tr>
<th>Year</th>
<th>Postdoc stipend</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$32K</td>
</tr>
<tr>
<td>2011</td>
<td>$33K</td>
</tr>
<tr>
<td>2012</td>
<td>$34K</td>
</tr>
</tbody>
</table>
from http://undsci.berkeley.edu/article/socialsideofscience_06