

# Ethics in Mathematics and Statistics

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University of Alberta

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# Outline

Ethics

AMS Ethics Guide

SSC Ethical Code

Questions ?

Case Studies

# References

- Laura Shanner, Prof. for Ethics, Public Health, UofA
- UofA, A Guide to Academic Integrity for Graduate Students
- Statistical Society of Canada: Code of Ethical Statistical Practice
- American Mathematical Society: Ethical Guidelines

# Ethics

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Hillen:

*Treat your neighbor as you like to be treated yourself.*

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- **Ask Questions:** Get help

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- Sometimes it is not clear what to do
- It's OK to be confused, uncertain, frustrated
- You are never alone on this journey

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# AMS Ethics Guide

## Honesty and Integrity:

*The public reputation for honesty and integrity of the mathematical community and of the society is its collective treasure and its publication record its legacy.*

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*The correct attribution of mathematical results is essential.*

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- correct mistakes in a timely manner.
- take care of yourself and get help if needed.

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- The referee process is completely confidential.

# Conflict of Interest

*A bias in reviewing, refereeing, grand decisions must be avoided.*

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- No one should be exploited by the offer of a temporary position at an unreasonably low salary and/or an unreasonably heavy work load.



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- avoid disclosure of any confidential material, data, results, and conclusions

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- accept responsibility and be prepared to defend your work.
- refuse to accept agreements which are linked to a certain outcome.

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- (c) F. Adler and G. de Vries *et al.*

## Case Study 2: Thesis

- A student reads some of my papers, continues work in this direction and writes a thesis.
- He wants to honor my original ideas and uses parts of my paper in his thesis.
- Is this OK?

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1. Can I referee a paper of a friend/collaborator?
2. The publication of my paper is linked to the success of the first paper of which I am referee. Is this a conflict?
3. Apparently, almost the same paper has been submitted twice. Is this OK? What shall I do here?

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- I rejected the second (almost identical) contribution right away, explaining the self-plagiarism issue to the editor.
- I.N. Visible has damaged his integrity and reputation. I was very disappointed and I am no longer sure if I want to publish with him.



## Case Study 4: Dead Author

- Student A works for his PhD with supervisor B. His thesis is almost complete when B suddenly dies.
- Professor X agrees to take over and lead the student to a successful defense.
- Professor X and student A write a paper about the thesis work.

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- Professor X and student A write a paper about the thesis work.
- Should the former supervisor B be a co-author?

## Case Study 5: Submission

- I wrote a joint paper with a postdoc N.N.. The paper got rejected since there were mathematical problems.
- N.N. found a job somewhere else. I gave the same problem to a PhD student to find all mistakes and correct them and I informed N.N. about this.

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- **Now what?**

## Case Study 6

You make a scientific picture for a paper of your supervisor. The supervisor uses the picture, but does not mention your contribution. What do you do?

- What is the ethical dilemma here?
- How can it be resolved?

## Case Study 7

During your PhD you are able to publish a paper. A few years later, you want to use this result as a chapter in your thesis. Can you do that? How do you do that?

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## Case Study 8

Your supervisor is still unhappy after the  $n + 1$ -st revision of the proof of Lemma 12. He says "give me the LaTeX file", and he starts writing the proof himself. Is that OK? What should you do?

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## Case Study 9

Another student and you work closely together to solve a hard problem. Either of you want to use the material for their thesis. What do you do?

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## Case Study 10

You are thinking about a small little piece for your main result. At a scientific meeting you talk to one of the authorities in the field, and she writes some ideas on the black board. After a while you realize that these ideas do solve your last problem. How do you acknowledge her original idea?

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## Case Study 11

You submit your thesis, go to convocation, take pictures with your Prof. and family, get drunk ... and then you realize that there is a mistake in your thesis. What do you do?

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## Case Study 12

A colleague of mine and I discussed the idea to write a joint paper on Butterflies. We both start working on that problem and after about 1/2 year, I get a 33 pages manuscript. It is mostly complete and there are only a few minor changes to be made. The paper carries both of our names in alphabetical order. Is it still OK if I am a coauthor?

- What is the ethical dilemma here?
- How can it be resolved?

## Case Study 13

Your supervisor helps you a lot during your research. As it comes to publication, she insists that you are the single author on this paper. Is that appropriate?

- What is the ethical dilemma here?
- How can it be resolved?

## Case Study 14

A company offers you a handsome amount of money to analyse the data about the toxicity of their trailing ponds. What do you do?

- What is the ethical dilemma here?
- How can it be resolved?

## Case Study 15

You get a data set to analyse to see if a new medication is effective. It turns out that the medication is effective in most cases, but there are two clear outliers. Based on your previous experience in this area, you are certain that these are outliers. What do you do? Can you just remove those two values?

- What is the ethical dilemma here?
- How can it be resolved?