

Free Revealing in Computational Science

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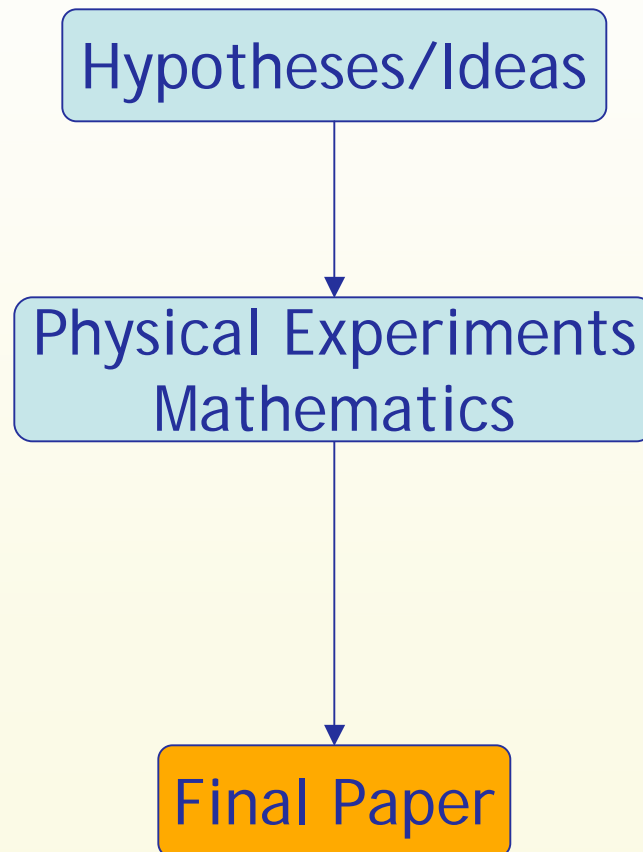
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*Workshop on Intellectual Property Law and
Open & User Innovation*

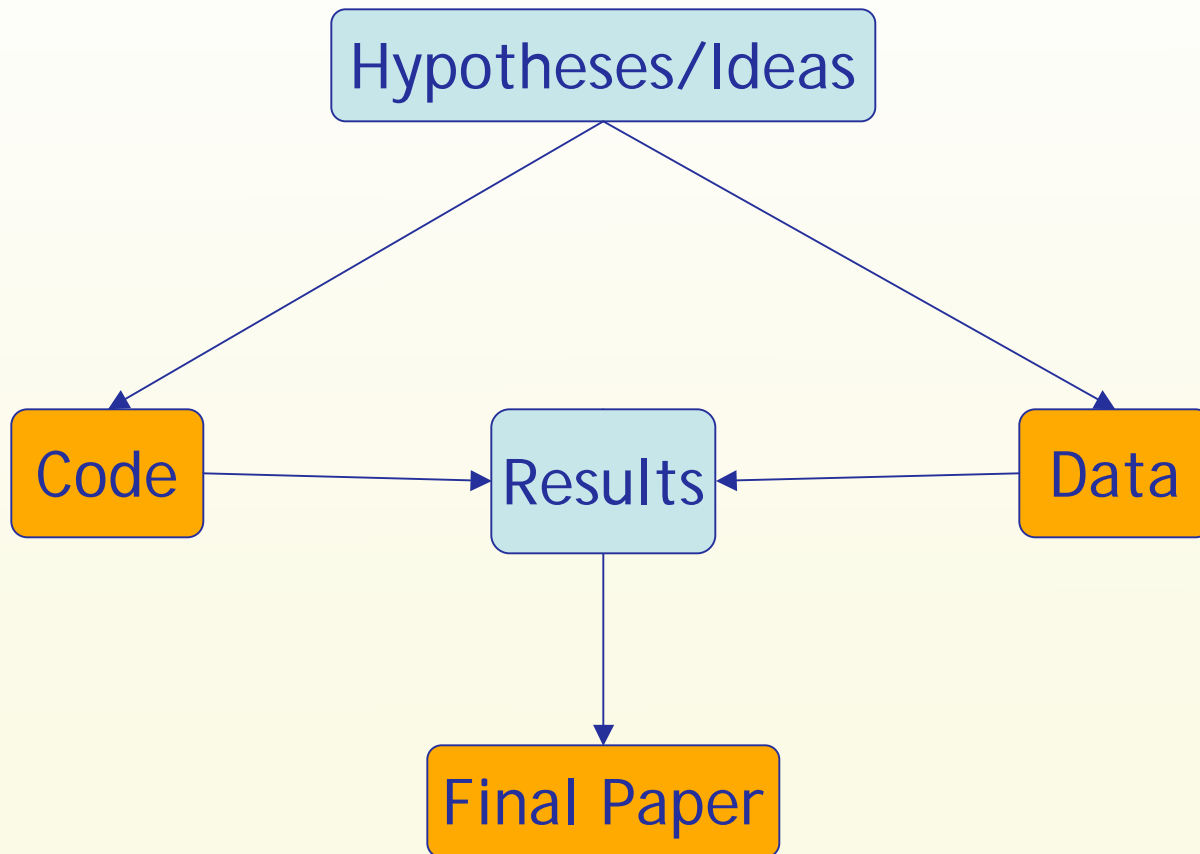
MIT Sloan School of Management

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Scientific Output is Changing



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Why Don't Scientists Reveal?

Hypotheses:

1. Scientists are primarily motivated by personal gain or loss.
2. Scientists are worried about being scooped.

Survey of Computational Scientists

- *Subfield:* Machine Learning
- *Sample:* American academics registered at the top Machine Learning conference (NIPS).
- *Respondents:* (ongoing) 60 responses from 290 requests.

Caution...



Preliminary Data....

Top Reasons Not to Share

<i>Share Code</i>		<i>Share Data</i>
72%	Time to document and clean up	53%
58%	Dealing with questions from users	42%
45%	Not receiving attribution	48%
25%	Competitors may get an advantage	37%
23%	Competition in the area is intense	37%
35%	Possibility of patents	-
28%	Loss of future publications	35%
19%	Legal barriers such as copyright	25%

Top Reasons to Share

<i>Share Code</i>		<i>Share Data</i>
88%	Encourage scientific advancement	73%
88%	Encourage sharing in others	72%
82%	Improve the caliber of research	70%
82%	Be a good community member	75%
82%	Increase in publicity	67%
77%	Set a standard for the field	72%
73%	Get others to work on the problem	70%
68%	Finding collaborators	65%

Preliminary Findings

- *Surprise*: Scientists are generally motivated to share by communitarian ideals.
- *Not surprising*: Reasons for not revealing reflect private incentives.
- *Surprise*: Scientists not that worried about being scooped.
- Legal barriers a factor: Reproducible Research Standard