

Scientific Peer Review

What is peer review?

- Corner stone of science
- Process to evaluate the quality of a scientist's research
- By peers
- Reviewers and decision makers
- Peer Review Process for Scholarly Publication

Why do scientists want to publish?

- I did/discovered/proved it the first.
- You may create a permanent record with your name
- Promote research interest
- “Publish or perish”
- Reputation of a journal

Peer Review Process

- An “interesting” research question.
- Due diligence
- Do your research
- Find a “right” place to publish
- Document your discovery

Peer Review Process

- Journal Editor
- Associate Editor
- Reviewers
- 4 weeks later ...
- Associate Editor
 - Accept without changes / Accept with minor changes
 - Major revision / Rewrite and resubmit / Reject

Peer Review Process

- Conference program committee
- Reviewers
- 4-6 weeks later
- Rebuttal
- PC chairs make final decision
 - Accept or reject

Anonymity

- Single-blind review
- Double-blind review
- Open peer review
 - arXiv
 - Perelman's 2002 proof of Thurston's geometrization conjecture
 - Vinay Deolalikar's proof of $P \neq NP$ in 2010 (unfortunate, the proof has an error)
 - Norbert Blum's proof of $P \neq NP$ in 2017 (a contraction was shown)

The Value of Peer Review

- Quality control
- Authors
- Journals
- Other scientists
- Outside the science community

Limitations of Peer Review

- Peer review may not increase the quality of published research
- Peer review is not fraud-detection system
 - Jan Hendrik Schön
 - Chunyu Han
- Does peer review increase the pace of scientific research?

Impact Factor (IF)

- Year Journal Citation Reports
- $IF = \frac{\text{number of citations the papers published in that journal in the previous two years}}{\text{total number of papers published in the two years in that journal}}$
- IF should be used cautiously
- 5-year IF

How do I get my paper published?

- Select a research topic
- Literature review
- Do the research, hopefully get interesting results
- Identify a target journal/conference
- Write, revise, polish
- Submit
- Be a reviewer!

After first round of review

- Read it and put it aside for a few days
- Most reviewers are trying to help you
- Address all the review comments and resubmit