

Strategies and Mechanisms of Publishing your Research on an Ongoing Basis

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About Me

- Wrote my first paper in 1989/90 as an undergraduate student on "Computer Aided Calculations of Two-phase Flow Pressure Drop in Boilers" – without any formal mentoring
- Became a faculty member at the University of Alberta in 2001
 - Surface Engineering and thermofluid science (a bit of Biomechanics as well!)
- Now at York University in Toronto.
- Became the Editor for Advances in Colloid and Interface Sciences in 2009
- Been a member of Editorial Board of various other journals since 2006
- Supervised more than 100 students at various levels
- Authored to date more than 110 papers in peer reviewed publications, with another 140+ conference presentations
- Co-organized 12 international conferences/symposiums
- Have worked as consultant with many companies in Canada, USA, and Europe

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Warning!

- This presentation contains my personal reflections through-out the time as what and how I have done things, as well as, my perspective on various people doing the same.
 - It also includes some redemption video clips!
 - Starring George Whitesides of Harvard Univ., author of ~ 1100 papers
 - Not all topics relates to all audience, i.e. PhD students, PDF, or Young Faculty, but majority will appeal to all

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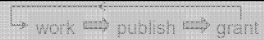
History of Scientific Writing & Peer Review

- Syrian physicians introduce the first form of peer review
 - Ishaq bin Ali Al-Rahwi (854–931): *Ethics of the Physician*
 - Duty of a visiting physician to make duplicate notes of patient condition
 - After patient either was cured or died, notes and performance evaluated by local council of physicians
 - Source: R. Speir, The history of the peer-review process, Trends in Biotechnol, 20,357-8, 2002.
- 1665: First scientific journal: Philosophical Transactions of the Royal Society of London begins publishing
 - All reviews performed by the editor, Henry Oldenburg.
 - Still publishing today!
- 1890's: Invention of typewriter and carbon paper
 - Allows manuscript copies to be sent out to small review committees
- Modern peer review
 - 1959: Invention of Xerox allows widespread peer review, and space in journals becomes limited

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Writing About Your Work

■ Publish or Perish!



- In 1938, the phrase appeared in Association of American Colleges Bulletin, Vol. 24. Also, in "The Academic Man: A Study in the Sociology of a Profession" 1942.

■ Writing is the best way to organize your thoughts/work

- Identifying gaps: logical/data or process-wise (they will stare at you!)
- Record keeping for IP, archival, or remembering purposes
- Helps with efficient interpretation of results, performing work

■ I have done it, why not let others know and learn from it?

- Personal satisfaction
- Duty (you have learned from reading others' work)

■ Writing is a valuable *skill often overlooked* (especially in S&E)

- Career advancement – busy boss syndrome
- Lifetime skill – complaint to car manufacturer

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The Usual Actors in Publishing

■ Resources

- The faculty member (Professor)
- The student
- Funding

■ Other players

- The collaborator
- The Editor
- The Reviewer

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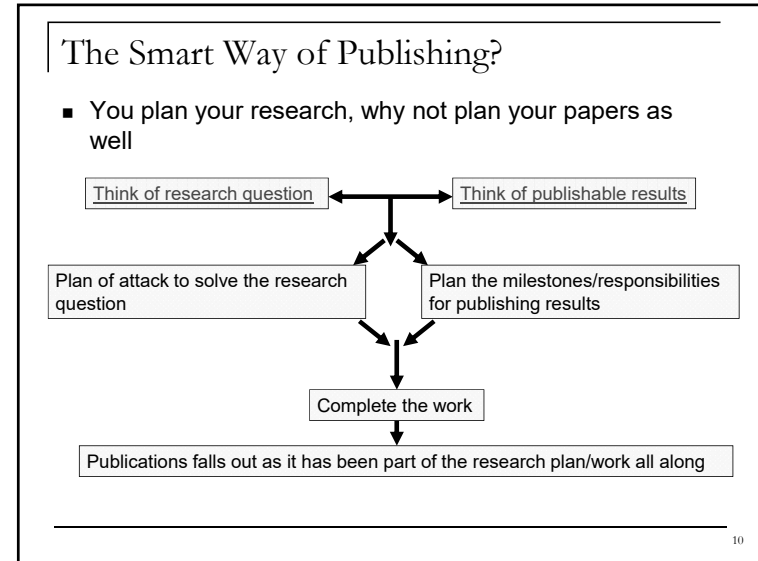
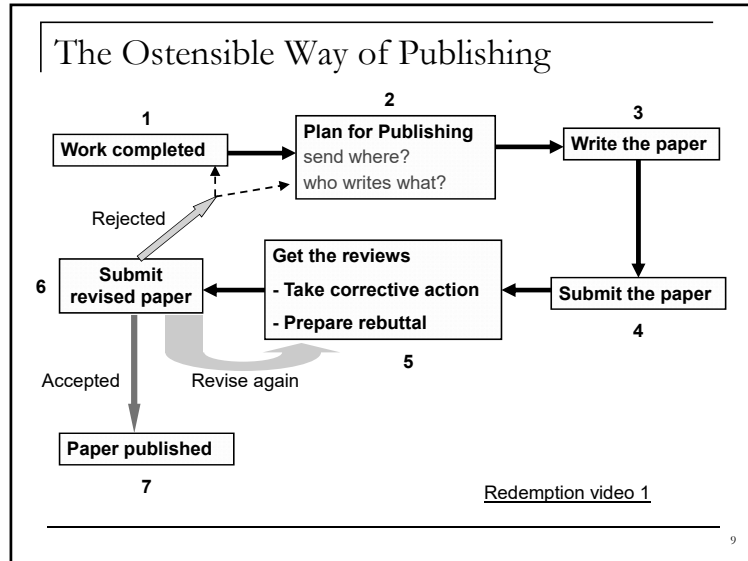
But First
A Discussion on Publishing
Methodology/Philosophy
(my core message for the day)

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Lets get it off the chest, whether we like it or not

- Quality matters
- Quantity matters
- One without the other can run academics into trouble over the course of a normal career
- In the majority of fields, publication means peer reviewed journal and NOT conf. proceedings or professional magazines/articles, or book chapters
- Impact factor, h-index, citations, journals, are not the last words on quality/quantity, but who is listening

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Publications falls out as it has been part of the research plan/work all along

Sounding Easy

Or is it?

- Redemption video 2
- A new way usually means a new challenge
 - Our students/colleagues are usually used to linear task based thinking Redemption video 3
- At the end this way it is easier
 - As when the work is done no need to worry about writing a thesis!
 - Or going through the process of writing when focus is shifting,
 - Also, the work will be stronger benefiting from rigor of writing
- ~5% rejection rate to date

Redemption video 2

Publishing Actors: PI and students

- Publish before graduate!**
 - Mutually beneficial as paper-based thesis are now accepted in many places
- Publication is expected!**
 - Make clear from beginning of the program a high standard of achievement is expected, which usually means publishing
- PhD students higher chance of publishing than MSc**
- Don't forget BSc/MEng student's role in publishing**
 - Proof of concept work
 - Mop up work
- Motivate by conferences**
 - Also nice as they have deadlines!

Publishing Actors: PI and students cont'd

- Do not procrastinate!
- Worry about the pipeline! (especially PIs)
- Go to conferences
 - To have your fingers on the pulse for ideas/trends
 - Networking
 - "S/He is a good researcher must have been very busy" benefit
 - hopefully not: s/he again!!
 - Forget about your group!
- Accept review assignments (papers & grant proposals)
 - Share with students
- No need to chase trend, but BE flexible
 - with field/aspects/methodology of your research

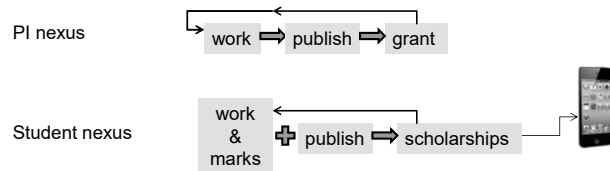
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Publishing Actors: PI and students cont'd

- Worry about quality!
- Position your work
 - Make sure your best work is sent to a journal with the best impact factor (readership) in your field
 - Don't ignore your so so work there is a place for publishing them in tier 3 journals – invest the appropriate time
 - Don't aim your middle work to the top journal.... Don't loose time
- Talk to colleagues and ask for help
 - (we are competing with the World, not each other!)
- Share the writing with your students (*the last mile*)

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Publishing – Funding Nexus



Publishing:

- Let's you to show and NOT tell
 - Credibility and assurance of peer review (Depth, Rigor, Contribution)
- Brings people to you
- Allows you to promote or create awareness about you and your work/ideas → funding
 - Need to build this into your papers ([redemption video 4](#))

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Other Players: Collaborators

- Cooperation/collaboration with others
 - Your field (power house)
 - When I fall, you pick up
 - Efficiency in getting things done
 - New ways of doing the same
 - Sounding board
 - Other than your field (complementary – interdisciplinary)
 - Attacking the same problem using a different tool
 - Numerical vs. experimental
 - Opening a new field (be first)
 - Freezing cell example
- 1- Quality**
2- Innovation
3- Quantity
4- fun!
- A word of caution: do not over do it, or have variety

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Other Players: Editors

- Editors re responsible for handling of your paper
 - Initial submission and checking for compliance with journal's mandate and scope
 - Initiate peer review
 - Be the final arbiter about publication of your work
- Editors are human!
 - Make it easy for them

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Other Players: Editors

- Cover letter
 - Submission: to highlight the findings in a nutshell
 - Revision: to highlight the actions taken in a nutshell (avoid generic fluff)
- VERY IMPORTANT: Rebuttal letter to be
 - thorough,
 - factual based on literature,
 - easy to navigate and relate to the manuscript
- Sometimes (rarely) need to go over the head of reviewers
 - Write with your concerns directly to the Editor not just rebuttal letter

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Other Players: Editors

- If you don't hear from Editor (2-3 m) write to him/her and inquire
- Provide review services to your journals
- If a journal has a long turn around time ,e.g. 1 year... publish somewhere else? Let publisher know
- Be very polite but firm in your dealings with Editors
- Be factual and do not sound opinionated ... always use "others work" as backup
- Be prepared for disappointment, you will be..... Direct your energy to submit elsewhere, but take into heart the criticism

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Other Players: Reviewer

- Reviewer' comments should be welcomed and treated seriously!
 - This is free consulting/evaluation from an expert
 - Can help to improve quality of your publication
- Understand the comments and questions
 - Paraphrase them
- Be humble and don't take matters personally
- Don't forget that you as the authors need to highlight your research contribution.
 - The reviewers and the editor need to be convinced of the contribution in your work

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Other Players: Reviewer cont'd

- To the point in your response!
 - Acknowledge their perspectives and state your perspectives
 - Never attack other people's work, politely identify shortcomings
 - It is OK to disagree sometimes
 - If the changes being suggested are unreasonable, explain why, and look for a way to compromise to at least partially appease the reviewer
- MY RULE: Try to make one change for every reviewer comment to show action
 - If the reviewer was off base, explain that there was a misunderstanding. Take responsibility for not having written clear enough and make changes to clarify

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Where to publish?

- Belief : the value of a research is defined eventually by its own quality rather than where it was published
- Exciting results of current interest: fast review (fast acceptance/rejection), and fast publication
- Solid results: a well-known journal (your colleagues could see) not necessarily always with a particularly high impact factor
- If you very much care about the impact-factor of the journals: publish a series of your research first in journals of higher impact factor, then followed by journals of relatively lower impact factor

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Some final tips

- Write it as a reviewer!
 - Think what can be wrong with your arguments/data, i.e. limitations, and address them there and then
- Read it like a student!
 - See if the messages are simple and educational
- Pitch it like a colleague
 - Be passionate about the "science/discovery" the same way you have heard a colleague pitch an idea to you.... likely to get you to do some work!
- Contextualized it like an Editor
 - Make sure that the significance of your messages is well put in the bigger context of status quo (or future) of your field

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Some final tips cont'd

■ Military – Lawyer Nexus

Writing: Keep it clear and simple!

- Write clearly and simply, and maximize information density
 - Use minimum number of words necessary to make your point.



"If you can't explain something simply, you don't understand it well."



"Simplicity is the ultimate sophistication."



"Whatever is worth saying can be stated in fifty words or less."



"I believe more in the scissors than I do in the pencil."

From Prof. M. Papini

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Final Thought

- Very rewarding to see as a result of publication
 - Student has got career advancement
 - You have been recognized

Publishing book chapters, conf. proceeding, magazine articles very nice bonuses and must be pursued as either preparatory work for journal papers or consolidated form of papers published etc.

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A sincere thank you to:

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**Thank you!
&
Organizers**

Questions?

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The Research Question

- Questions - Step 1 (Tactical)
 - Motivation of the selected topic?
 - Intellectual pursuit
 - Industrial problem
 - Futuristic solution
 - What has been done?
 - What needs to be done?
 - What you can work on given the resources?
 - Human
 - Facilities
 - How are you going to prove or demonstrate the novelty of your idea/work?
 - Experiment, theory, simulation, or combination

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The Research Question cont'd

- Questions - Step 2 (Strategic)
 - Short-term impact?
 - Hot topic of current interest?
 - Open/unsolved key issues of wide interest?
 - Bring funding, or open career opportunity?
 - Long-term impact?
 - *Try* to identify a research topic which is not yet popular, but likely to be popular in the near future
 - *Try* to be the first one or one of the first – rather than following an established research track opened by others
 - *Try* to attack key issues which others simply cannot go around – rather than less-relevant issues of insignificant importance
 - *Try* to make your idea/method/results unique – different than others (even it is not better than the others in some aspects).

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The Research Question cont'd

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Publishable Results

- Something that has not been done before, is NOT necessarily significant for scientific publishing
 - Press fitting of a shaft rather than fixing by bolt in the development of a safe new swing
 - Doing tests at different pressures when pressure would have insignificant effect on results or a predictable one
- An "artificial" problem or a mathematical manipulation of known facts with no physical significance is usually not publishable...
- Possess **significant novelty**: an answer to a "gap" in literature, OR:
 - Novel: idea, theory, or analysis
 - Novel: implementation
- Technically sound
 - Methodology
 - Theory
 - Implementation
- Comprehensive comparative studies (do not confuse with Reviews)

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