Publishing Your Research

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Andrea Danylik, Williams College
Margaret Martonosi Intro #1: The Technical Me...
Cornell BS EE ’86 -> Stanford PhD, 1994
Princeton 1994-now: Assist., Assoc., Full...
Margaret Martonosi Intro #2: Non-Technical Me
• Married 17 years to Kevin Burkman
• Met when we were both hike leaders for the Appalachian Mountain Club
• Other fun: Running, swimming, travel
Andrea Danyluk Intro #1: The Technical Me...
Vassar BA ‘84 -> Columbia PhD, 1992
NYNEX Science and Technology, Expert Systems Lab, 1990-94
Williams College 1994-now: Assist., Assoc., Full...
Year off from Williams 2018-19: Academic director of Align M.S. in CS at Northeastern University
Research: Machine Learning. Also CS Curriculum and Data Science Curriculum.
Sabbaticals: NYNEX/Bell Atlantic (1997-98); NYU (2015-16)
Andrea Danyluk Intro #1: Non-Technical Me...
Married 35 years; Son (26); Daughter (24)
Fun: Hiking, travel, reading, crossword puzzles
Publishing Your Research

Part 1 - The Publishing Process
Part 2 - The Writing Process

Thanks to Holly Rushmeier for some of the material in these slides, which she, in turn, had adapted from previous Grad Cohort presentations and a Grace Hopper presentation by Jaime Teevan.
The Publishing Process
The “Writing Bug”

Why?
It feels good:
• to share what you’ve done
• for others to be interested
• to say how you’ve advanced state of the art!

So keep doing it -- as much as you can?
• **Quality!** Quantity varies by area
• Citations matter as career progresses
• Venue matters

It’s addictive!
Avenues for Publication

Examples from Machine Learning

Machine Learning journal

International Conference on Machine Learning (ICML)

Workshop on Adaptive Learning Agents (16th was held at the Federated AI Meeting in Stockholm)

Workshop on Network Interpretability in Deep Learning (held at AAAI 2019)
Avenues for Publication

Examples from ML

Machine Learning journal

International Conference on Machine Learning (ICML)

Workshop on Adaptive Learning Agents (16th was held at the Federated AI Meeting in Stockholm)

Additional

Workshop Abstracts
Doctoral Consortia Abstracts/Posters
Conference/Workshop Posters

Other Outlets

Thesis
Software, patents, books, data repositories
Social media: blogs, Twitter, YouTube
Publication Development

Peer-Reviewed Workshop

Conference

Journal

Authors are NOT tied to this pipeline!

beginning of an idea, some evaluation

more evaluation, well thought out

well evaluated, complete idea
Focus*: Conferences

Conference status is different in CS than other disciplines
- Primary outlet for CS (selective)
- Place to meet for other disciplines (not selective)

Not all conferences are equivalent
- Know top-tier conferences in your research area
- Acceptance rates/citations
- Sponsoring organizations

Acceptance requires that an author attend
Visibility can be very high from giving a talk or meeting with other researchers

*Be sure to understand what is primary in your area of CS (especially if doing interdisciplinary research)
Conference Process

Uniform Submission Date
  - Typically once/year
  - May have separate abstract deadline

Program Committee
  - May be hierarchical, may have non-committee reviewers

Decisions
  - Single decision or rebuttal

Details vary by area and year
  - Read the CFP carefully!!!
  - Talk to Grad Cohort speakers from your area
Peer Review Process

- **Reviewer selection**
  - Drawn from citations, contacts, lit search
  - Uses keywords or categories (beware of choosing too broadly)
  - Experts in the field
  - No conflicts of interest

- **Single-blind** - author does not know reviewers
- **Double-blind** - reviewers do not know author, author does not know reviewers
What Reviewers Look For

Clear contribution
Technical soundness
Solid evidence

Rejection!
- What didn’t reviewers understand?
- How can I make it clearer?

Good writing will never make a paper. But, it helps to make contribution, technical soundness, and strong evidence clear!
The Writing Process
Writing Effectively

• Empathy for reader:
  – Get out of your head and into yours.
  – They haven’t been “riding along with you” during your work; they just got here. Avoid “kidnapping them”. Tell them where you are going and why it matters

• Short sentences
  – Humans stop and process information at the period (.). Give them more places to pause and process.

• Outline, clear sequencing, and topic sentences
  – Write out an outlined bullet list of sections and clearly sequenced key points.
  – Turn each key point as the topic sentence of a paragraph.
The Intro

- What is the problem?
- Why is it important?
- What have others done about it?
- What are you doing about it? (What is novel/different from others?)
- What are the takeaways? should the world learn from your work?
Improving some writing: With your neighbor…

• Read each other’s abstracts
• Offer 1-2 specific bits of positive feedback.
  – Find things they did well
• Offer constructive feedback to improve
  – Specific wording markups
  – Overall writing/explanation strategies

**Keep in Mind**

• The Big Questions your abstract should answer:
  – What is the problem?
  – Why is it important?
  – What have others done about it?
  – What am I doing about it?
  – [if appropriate] One results number for reader to remember
Resources

• Strongly Suggest: “The Science of Scientific Writing” by Gopen & Swan
• Very short – just a few pages, but gives great strategies to work on.