Nick Gurski
Assistant Professor of Mathematics at CWRU

Mathematics Roundtable

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Assistant Professor of Mathematics at CWRU

June 18, 2019

What do mathematicians do?

Most mathematics faculty employed by a college/university do three things:

- teaching,
- research, and
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Specialized lectures notes for advanced graduate courses

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Research papers
Informal expositions of research

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How do you write a research paper?

Here is generally how it goes, I will say more about each step in a moment.

1. Do some research, usually either: exploring some interesting ideas and noticing a pattern, or working towards solving a specific problem.
2. Type it up, almost always in LaTeX.
3. Post it on the arXiv.
4. Submit it to a journal.
5. It gets refereed, and either accepted or rejected.
6. If rejected, try to improve it for resubmission. If accepted, do some revisions and then celebrate.

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Step 1: Do some research

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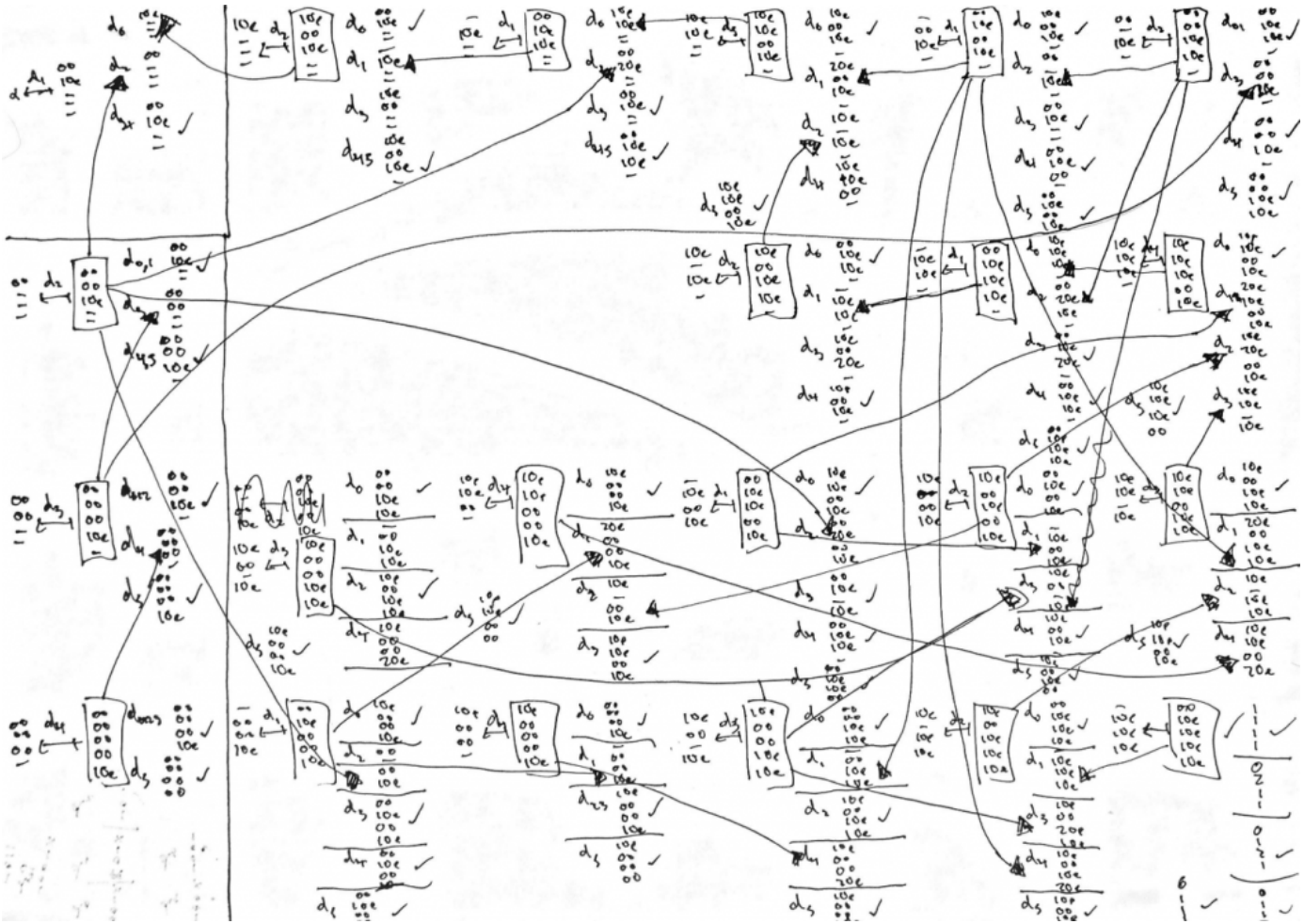
Here is what one attempt looked like:



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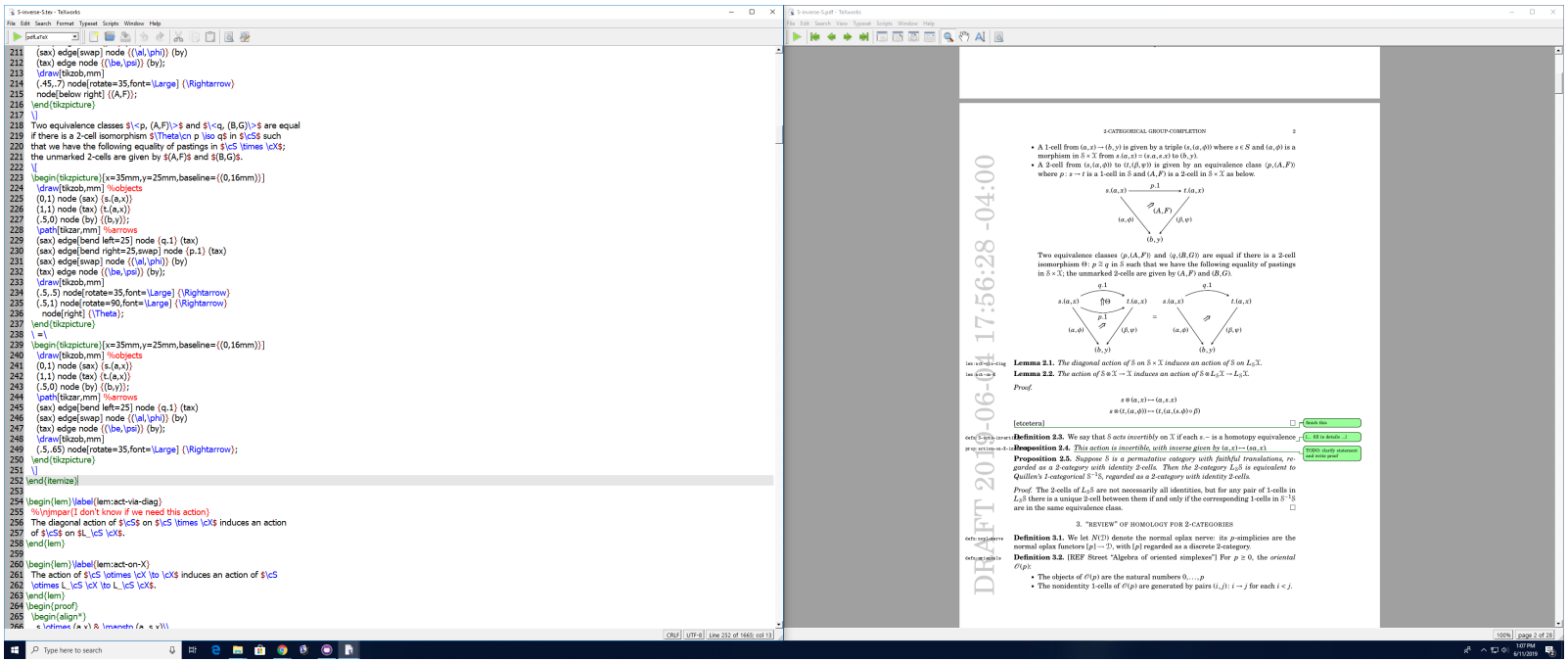
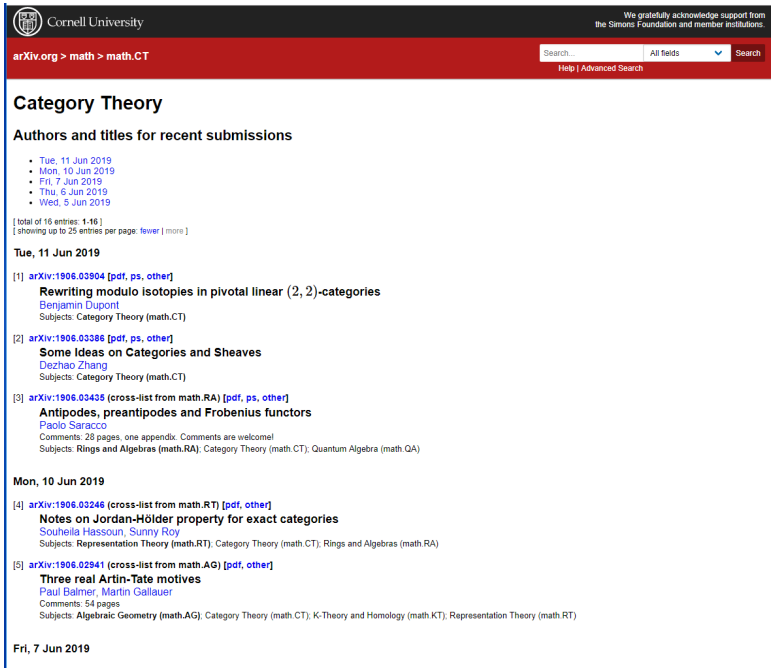
Step 2: Type it up

Here is a paper-in-progress and its code:



Step 3: Post it on the arXiv

This is what the arXiv looks like:



Cornell University

We gratefully acknowledge support from the Simons Foundation and member institutions.

arXiv.org > math > math.CT

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Category Theory

Authors and titles for recent submissions

- Tue, 11 Jun 2019
- Mon, 10 Jun 2019
- Fri, 7 Jun 2019
- Thu, 6 Jun 2019
- Wed, 5 Jun 2019

[total of 16 entries: 1-16]
[showing up to 25 entries per page: fewer | more]

Tue, 11 Jun 2019

[1] arXiv:1906.03904 [pdf, ps, other]
Rewriting modulo isotopies in pivotal linear $(2,2)$-categories
Benjamin Dupont
Subjects: Category Theory (math.CT)

[2] arXiv:1906.03386 [pdf, ps, other]
Some Ideas on Categories and Sheaves
Dezhao Zhang
Subjects: Category Theory (math.CT)

[3] arXiv:1906.03435 (cross-list from math.RA) [pdf, ps, other]
Antipodes, preantipodes and Frobenius functors
Paolo Saracco
Comments: 28 pages, one appendix. Comments are welcome!
Subjects: Rings and Algebras (math.RA); Category Theory (math.CT); Quantum Algebra (math.QA)

Mon, 10 Jun 2019

[4] arXiv:1906.03246 (cross-list from math.RT) [pdf, other]
Notes on Jordan-Hölder property for exact categories
Souheila Hassoun, Sunny Roy
Subjects: Representation Theory (math.RT); Category Theory (math.CT); Rings and Algebras (math.RA)

[5] arXiv:1906.02941 (cross-list from math.AG) [pdf, other]
Three real Artin-Tate motives
Paul Balmer, Martin Gallauer
Comments: 54 pages
Subjects: Algebraic Geometry (math.AG); Category Theory (math.CT); K-Theory and Homology (math.KT); Representation Theory (math.RT)

Fri, 7 Jun 2019

These papers aren't published yet, could contain terrible errors, or could be perfectly correct: you can't tell without very closely reading them. But these preprints are often at the forefront of research.

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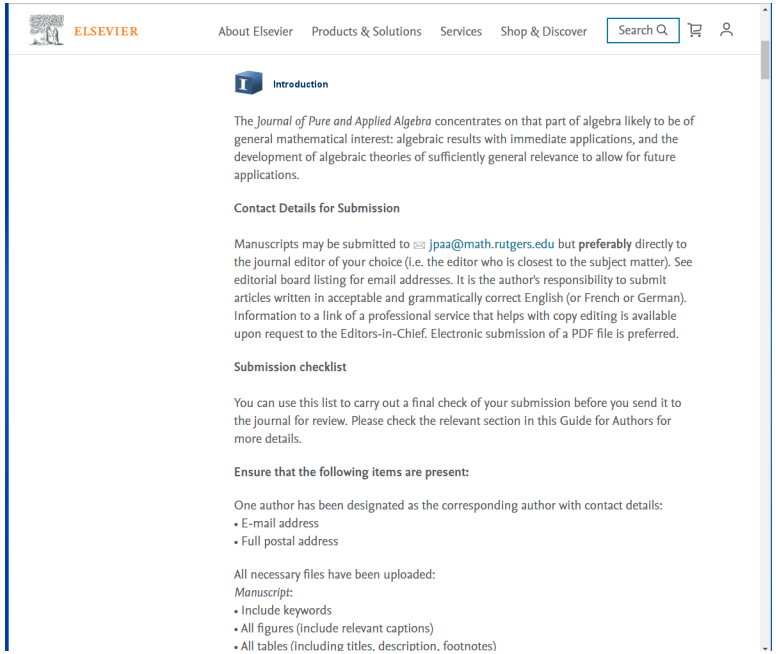
Steps 4 and 5: Submission and refereeing

Submission is easy and can often be done with just an email.



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Introduction

The *Journal of Pure and Applied Algebra* concentrates on that part of algebra likely to be of general mathematical interest: algebraic results with immediate applications, and the development of algebraic theories of sufficiently general relevance to allow for future applications.

Contact Details for Submission

Manuscripts may be submitted to jpaa@math.rutgers.edu but **preferably** directly to the journal editor of your choice (i.e. the editor who is closest to the subject matter). See editorial board listing for email addresses. It is the author's responsibility to submit articles written in acceptable and grammatically correct English (or French or German). Information to a link of a professional service that helps with copy editing is available upon request to the Editors-in-Chief. Electronic submission of a PDF file is preferred.

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
- E-mail address
- Full postal address

All necessary files have been uploaded:
Manuscript:
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)

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Steps 4 and 5: Submission and refereeing

Submission is easy and can often be done with just an email.

Refereeing is hard work, takes a lot of time and energy, and is frequently thankless.

Step 6: Revision and beyond

A referee's report will contain suggested revisions, either as a condition for acceptance or as general advice for the author when submitting to another journal after rejection.

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I have gotten referee's reports back with 2 suggestions, and reports with $100+$ suggestions.

Step 7: What does a journal do?

Once a paper is accepted, you get to do these kinds of things.

1. Relinquish your copyright
2. Pay a fee for open access
3. Put your carefully written LaTeXcode into their style

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What does a journal not do?

1. Help with any of the content
2. Make your paper look better
3. Hire a professional editor/proofreader to improve the writing
4. Pay anyone involved in the math

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So what good is publishing in a journal?

In my opinion, there are two primary benefits to publishing a paper in a journal.

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In my opinion, there are two primary benefits to publishing a paper in a journal.

1. A preprint might have serious errors, but a published paper went through one to three referees who (in theory) made sure the work was correct.
2. Journals have a nebulous sense of prestige attached to them, and publishing in a better journal signals better research. This signal can lead directly to more grants, more students, and faster promotion.

Some final thoughts

1. Every mathematician wants every other mathematician to be able to read their work.

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3. You can read about the UC system or various European countries breaking off their deals with big publishers.
4. You can also read about editorial boards leaving these publishers and going independent.

Thanks!