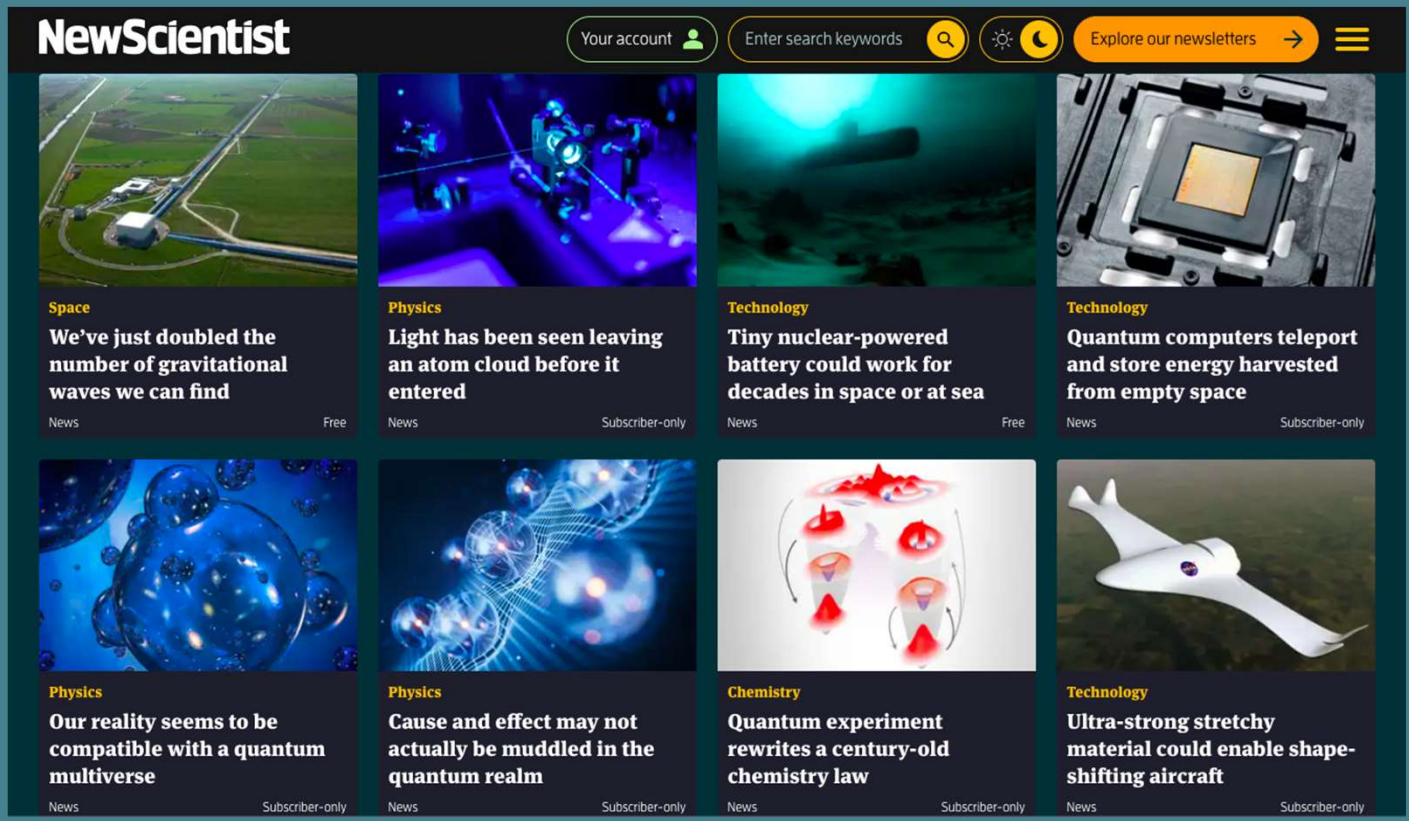
Notes on Science Journalism from a Physicist Turned Writer



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UIUC, September 2023
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Outline

1. My past life as a physicist

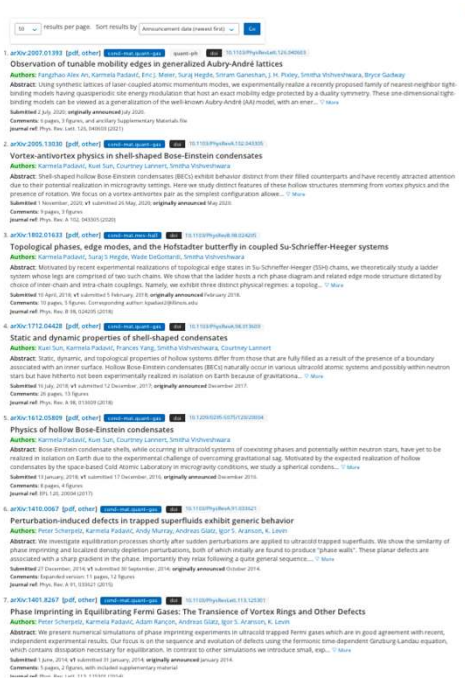
1. How I got into science journalism

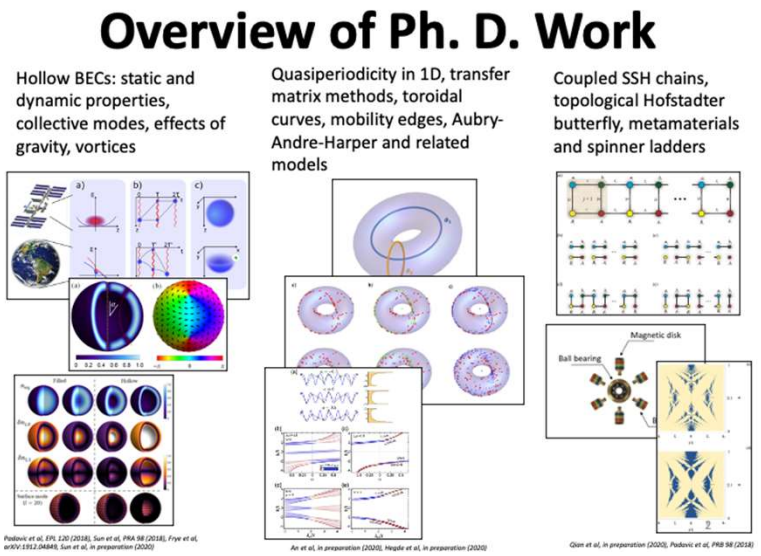
1. How does science journalism “work”

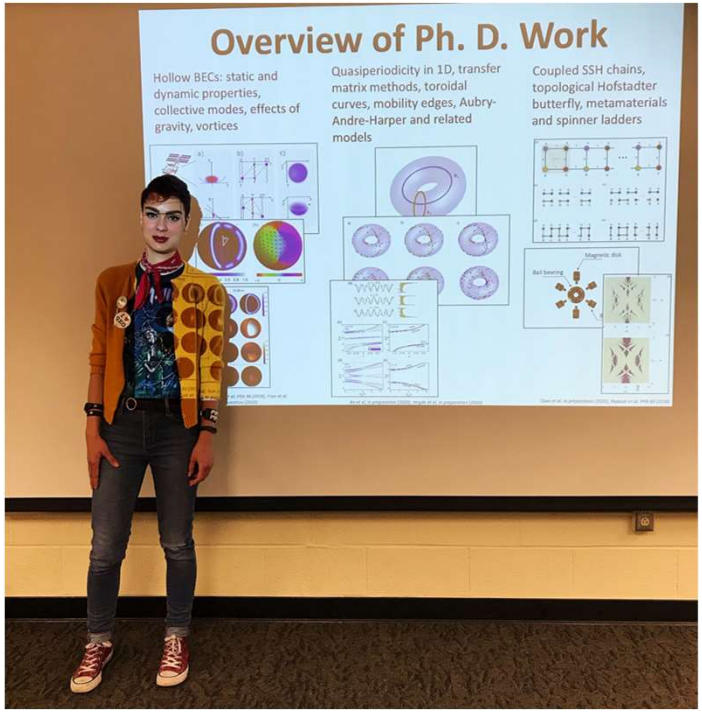
1. Tips on how to engage with journalists

My work in physics

- BA in Physics and a BS in Math from the University of Chicago
- PhD from University of Illinois Urbana-Champaign CMT and AMO theory
- Three points of focus: novel geometries for BECs, SSH ladders and topology, generalized AAH and quasiperiodicity







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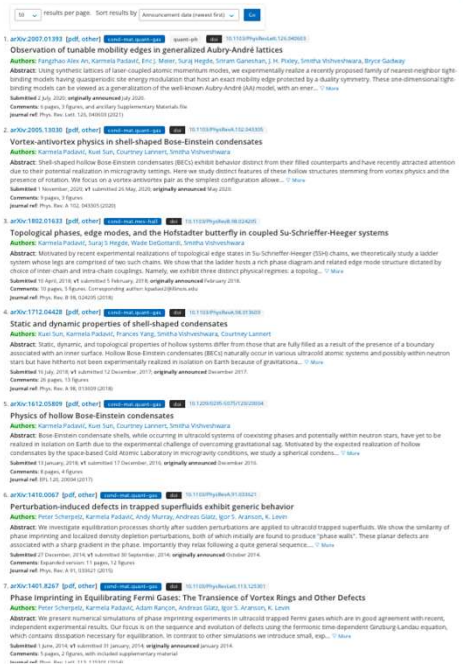
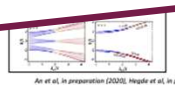
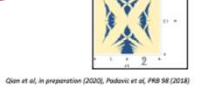
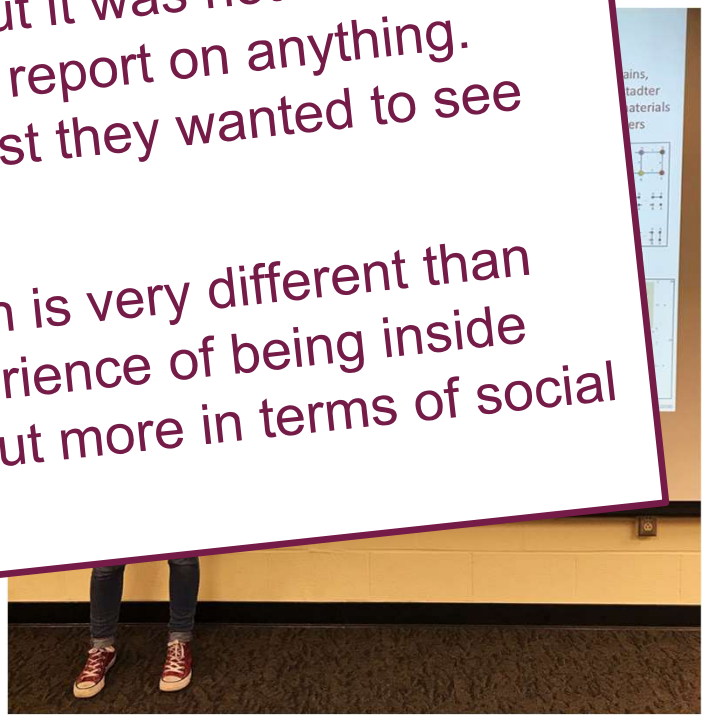
Having content expertise in condensed matter physics certainly helped me as a writer but it was not crucial as a good journalist should be able to report on anything. When I was hired at New Scientist they wanted to see my past writing, not my papers.

Some of the research I report on is very different than what I did but I believe my experience of being inside academia still helps me here, but more in terms of social norms.



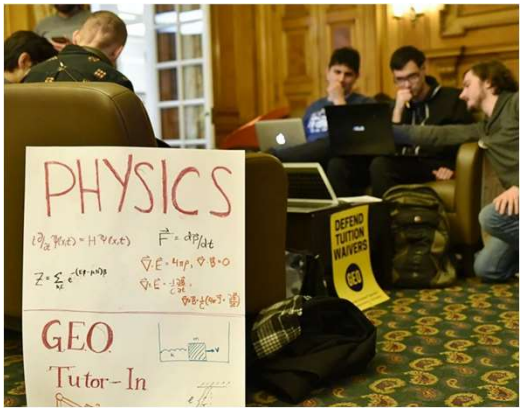


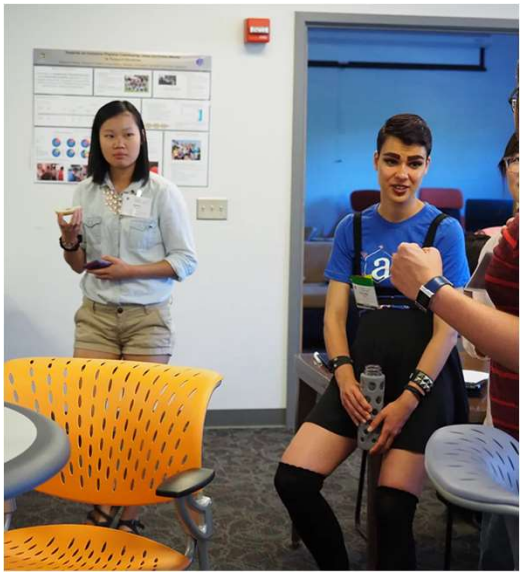




Graduate School Experience

- Mentoring and JEDI work
- Advocacy for women and gender minorities
- Labor organizing for grad workers
- Physics/Art





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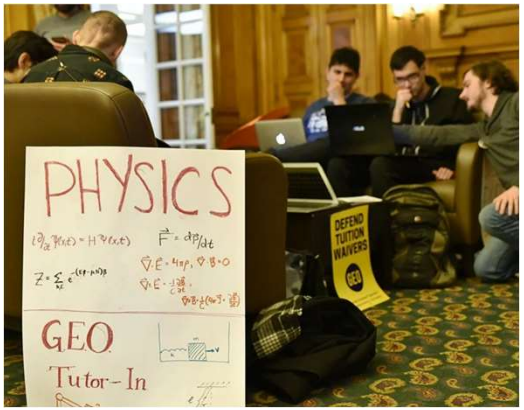

Some of these things were helpful to me in developing as a writer, but mostly they helped me get a teaching job that allowed me to have financial security while I was writing freelance

My employer: New Scientist

- Weekly print magazine for science enthusiasts, since 1956 in the UK
- Website updates multiple times a day
- London newsroom + New York newsroom (since 2021)
- Science-only coverage, mostly pegged to peer reviewed journal papers and science events (rocket launches, AI demos…)
- Simple, accessible language + lots of short, to-the-point news stories and a few in-depth features
- Millions of readers globally

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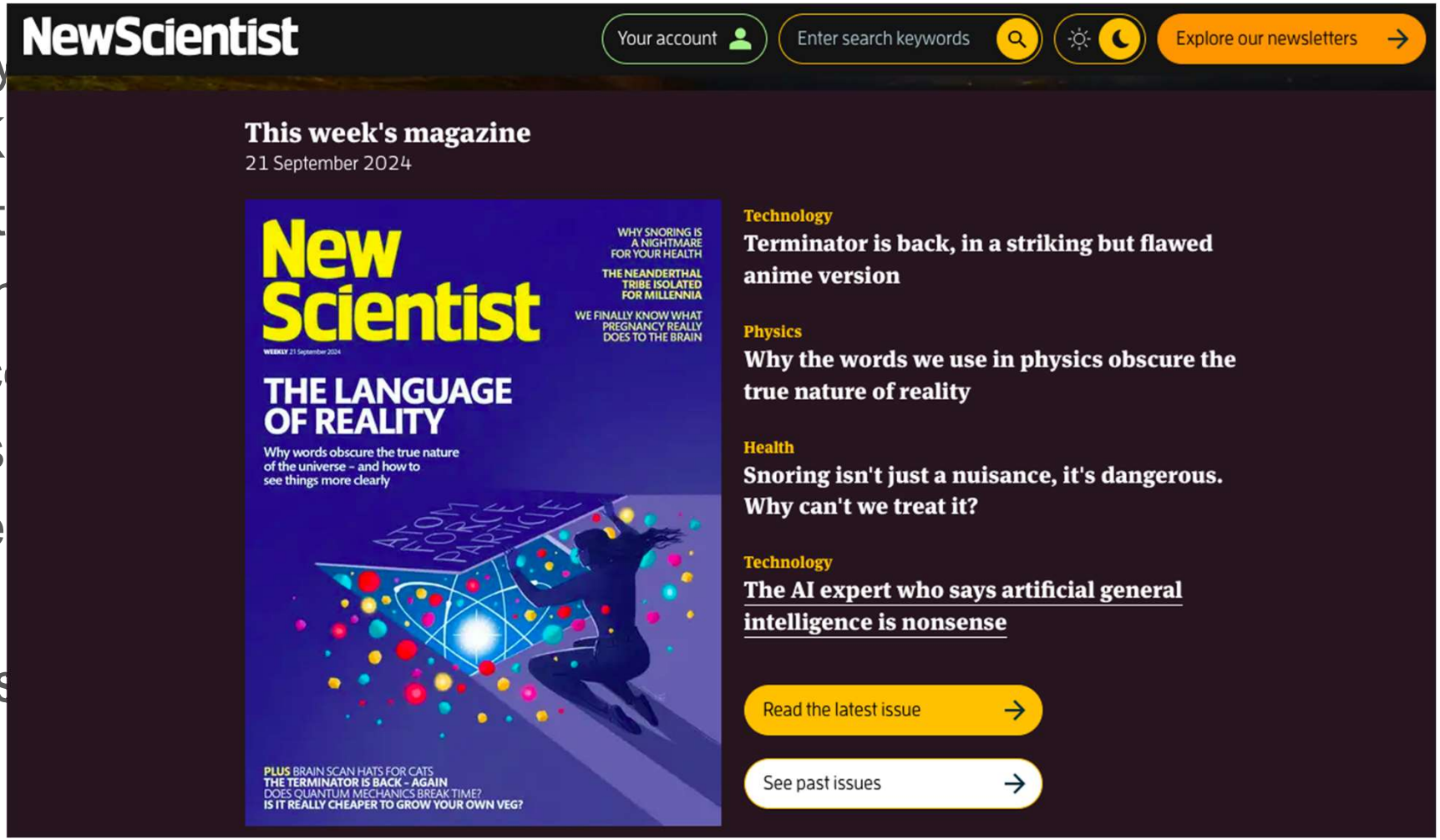


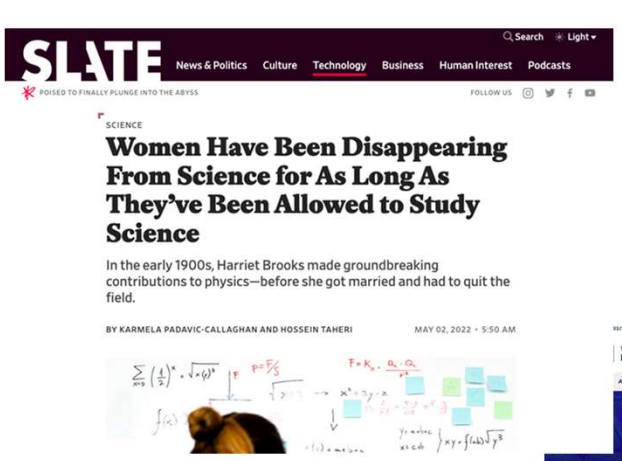
Science journalism vs. science communication?

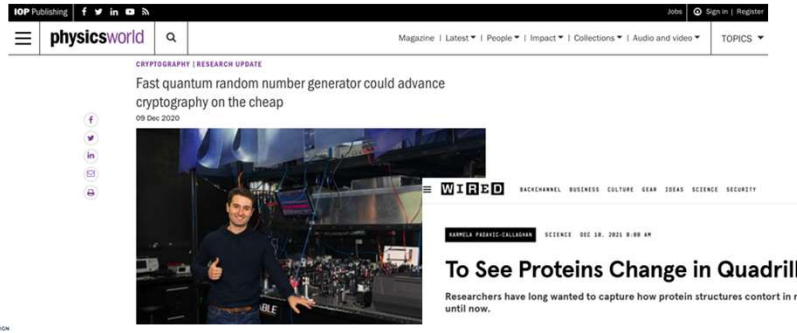
- Science communicators set out to explain and educate, sometimes about very recent research, sometimes about general or fundamental topics
- Science journalism is more timely and can be more critical …. because it's journalism!
  - A journalist's job is not so much to educate as much as to report facts in a timely manner as objectively as possible (if someone says a paper is bad on record, we print that!) and with enough context for a non-scientist to quickly grasp the significance of the work
  - Journalists have "beats" which are sort of like subject areas but rarely write about a topic and almost always write about an event, whether it's work that was just published or a technology that was just demonstrated
- Science communicators are often scientists themselves, many science journalists are not - they went to journalism school (typically an MA degree)

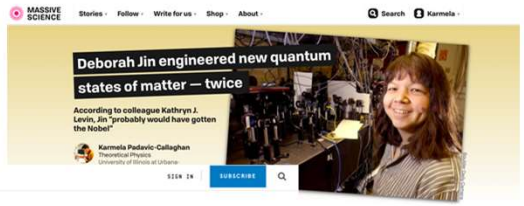
How did I get into science journalism?

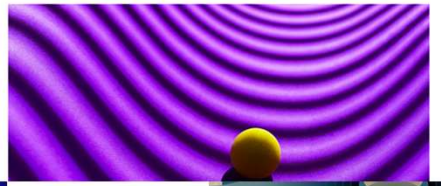
- I've done some sort of personal writing almost all my life, so I started with a strong writing practice (but being a writer is different from being a journalist)
- The Xylom + ComSciCon-AIP + Science Talk + Massive Science + a whole lot of networking
- Opinion piece in Scientific American (workshopped at ComSciCon-AIP, help with pitching)
- Public information (comms) work at UIUC
- More networking through various Slack channels and Facebook groups (mostly to get editors emails)
- Started pitching to magazines: Scientific American, WIRED, Quanta, Slate, Aeon, MIT Technology Review, Physics World…
- Joined National Association of Science Writers + support group for early career science writers that meets in-person in New York City
- Offered a full time position at New Scientist as a Physics Reporter on the news desk (good enough to leave my job teaching high school!)

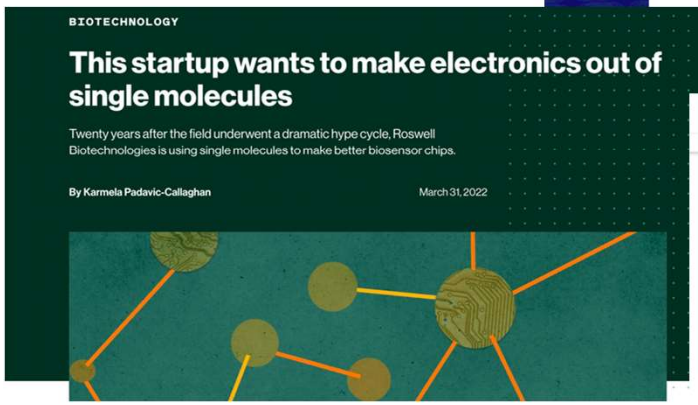
Freelance work: more freedom to choose topics, way less financial stability

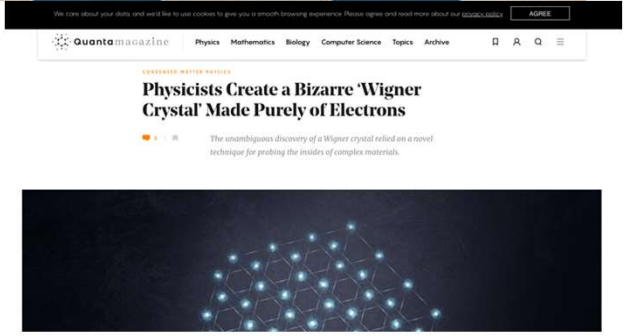












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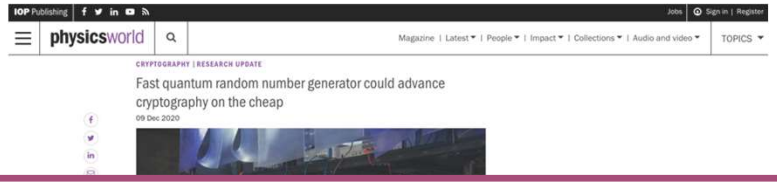

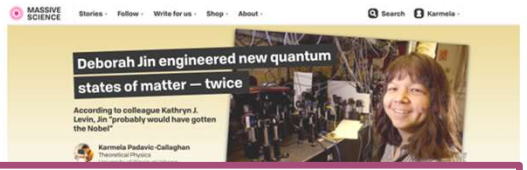

- I reported all of these stories while teaching full-time. I did interviews after hours or during lunch and wrote mostly at night.
- For freelance work you send an editor at a magazine that seems like a good fit for the story a pitch, sort of like a condensed proposal
- If they get back to you at all, they can pass or commission a story, sometimes at a different length or angle than you suggested, and they set a timeline
- Ideal pay is 1$/word but this is less and less common, most magazines will offer between 400 and 1200 word stories to young writers
- Most pitches are rejected + many editors won't reply to a cold pitch email if they don't know you already (it helps if your story is very in-demand or very unique and hard to cover)

Working as a Staff Writer (on the news desk)

- I pitch up to five stories every day (I cover all physics that's not astro or HEP), these are less formal pitches but to generate them I have to read a lot:
  - recent and accepted pages of Physical Review journals (PRL, PRA, PRB, PRE, PRF, PRXs..)
  - ACS journals
  - press lists and press releases from Science and Nature family of journals
  - press releases from universities and startups
  - arXiv
  - conference programs and talks
  - Twitter
- My editor commissions stories based on pitches and they set the word count and the timeline (usually two or three days). They commission based on a provisional headline but in the end they will write the official headline (and it's almost always different, because of SEO)
- The expectation is that I'll pitch, report and finish 3-5 stories a week (1500ish words)

Working as a Staff Writer (on the news desk)

- Reporting means:
  - reading the paper
  - interviewing the authors
  - interviewing another scientist from the field for outside comment

- I file a draft (“copy”) with an editor who then has final say over what makes it online or into print. Sometimes they make aesthetic changes only, sometimes they re-order and re-write paragraphs, sometimes they return copy with questions and ask for a re-write

- *This part of the process is almost exactly the same for freelancers!*

Ok, but how do I get into this?

- Go to journalism school (science journalism programs at NYU, CUNY, UCSB, MIT…)
- Get an AAAS Mass Media Science & Engineering Fellowship
- Get involved with comms in your department
- Write for your university's paper
- Pitch opinion pieces to magazines (warning: this is not reporting/journalism, but it can open doors)
- Freelance (but get ready for lots of rejection and have good savings going in)

What makes for a good story?

- Firsts, mosts and other superlatives
- Work that says something new about most fundamental fundamentals
- Stories with very good visuals
- News-you-can-use
- “Wow you’ll never believe this” stories or stories that pass the “pub test” (would you tell your friends about reading this story at the pub after work?)

- A paper that cannot be summarized in one plain English sentence is unlikely to make it past an editor (though I still pitch these sometimes)

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For news and stories based on single studies, it should be unambiguously clear to the reader why the story is interesting and worth writing about even if they don’t know *anything* about the subject

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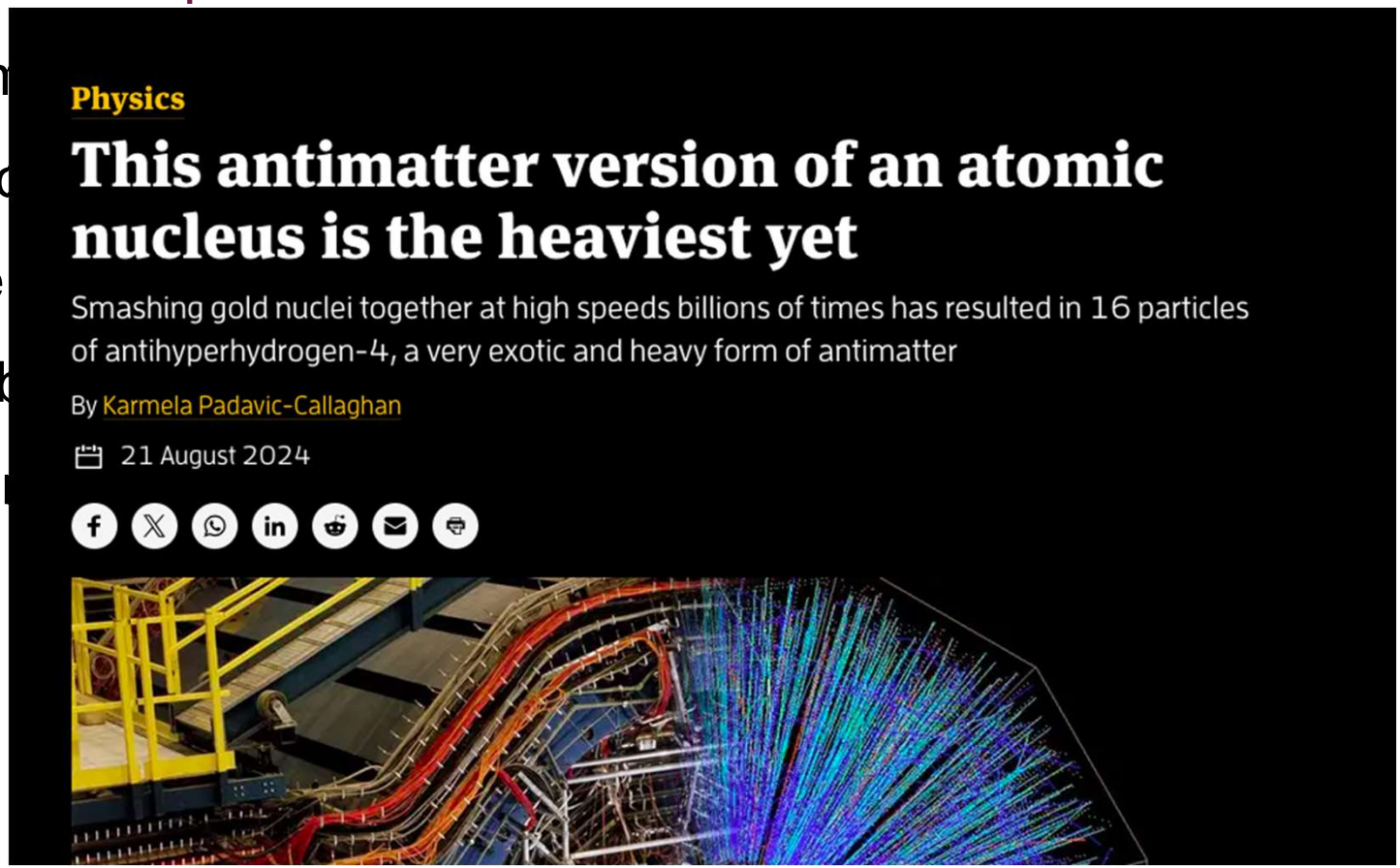

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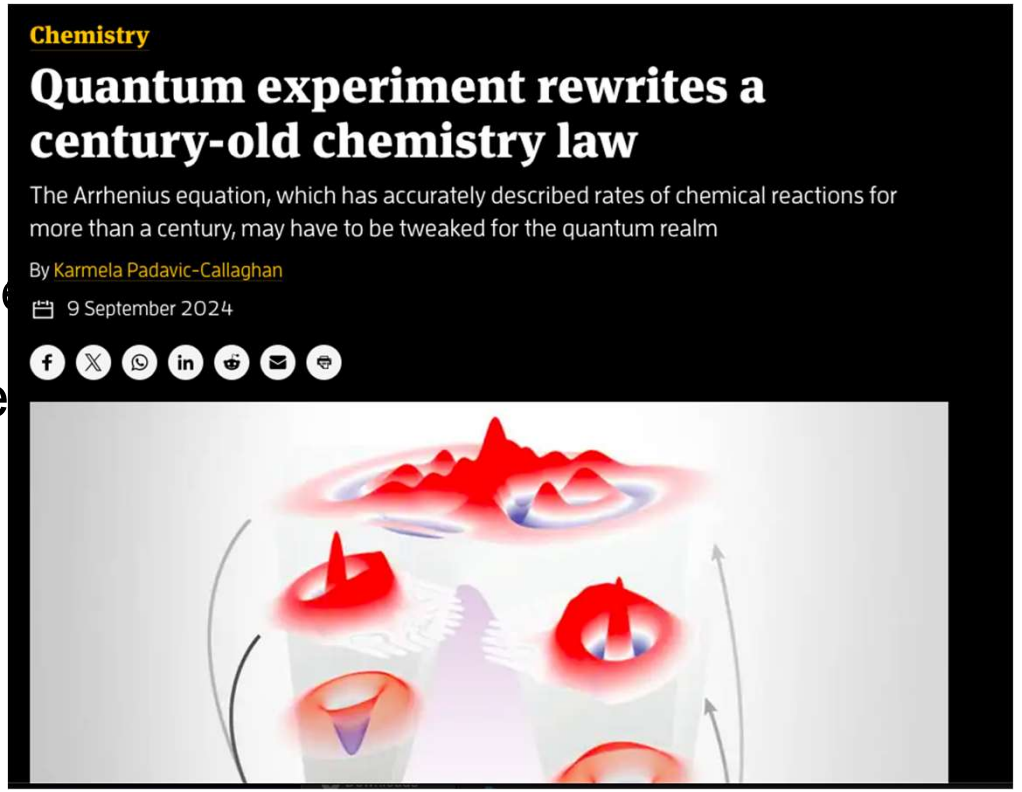

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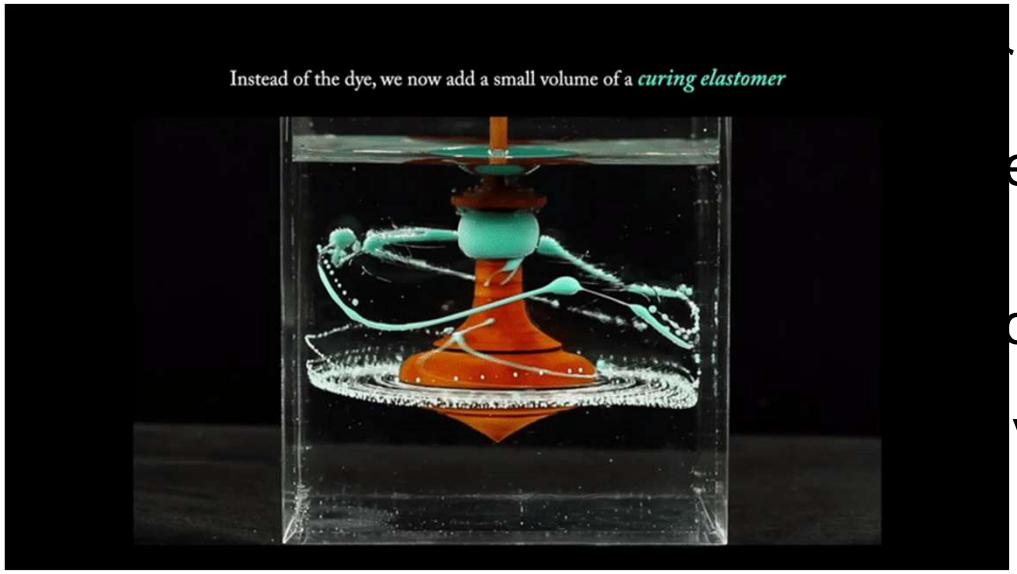

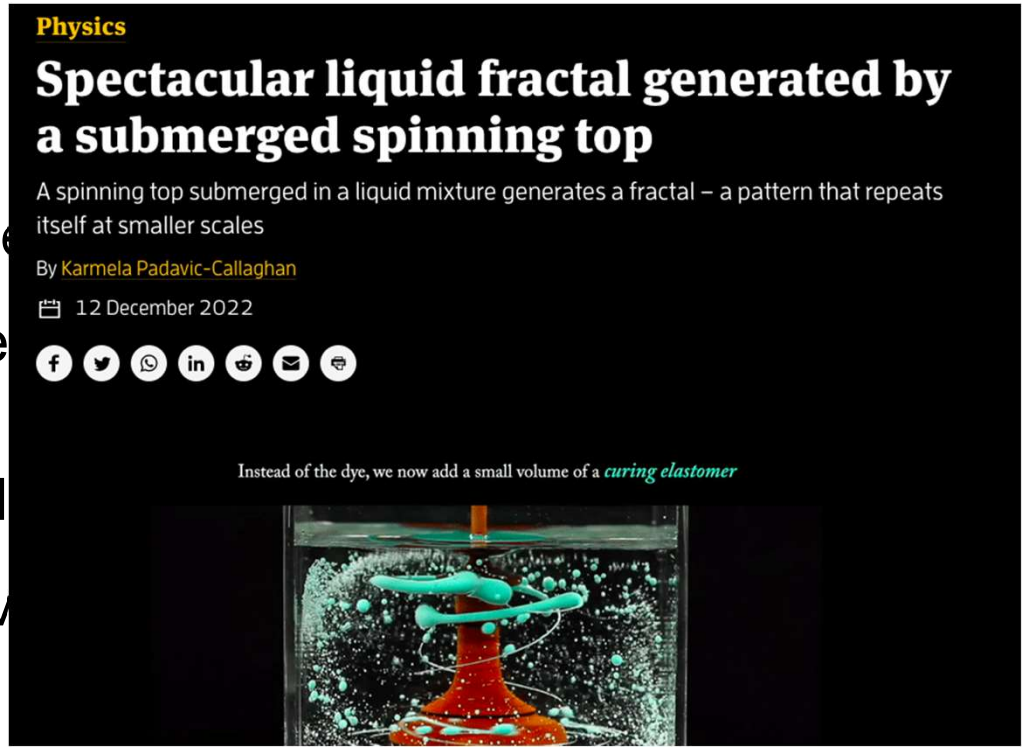

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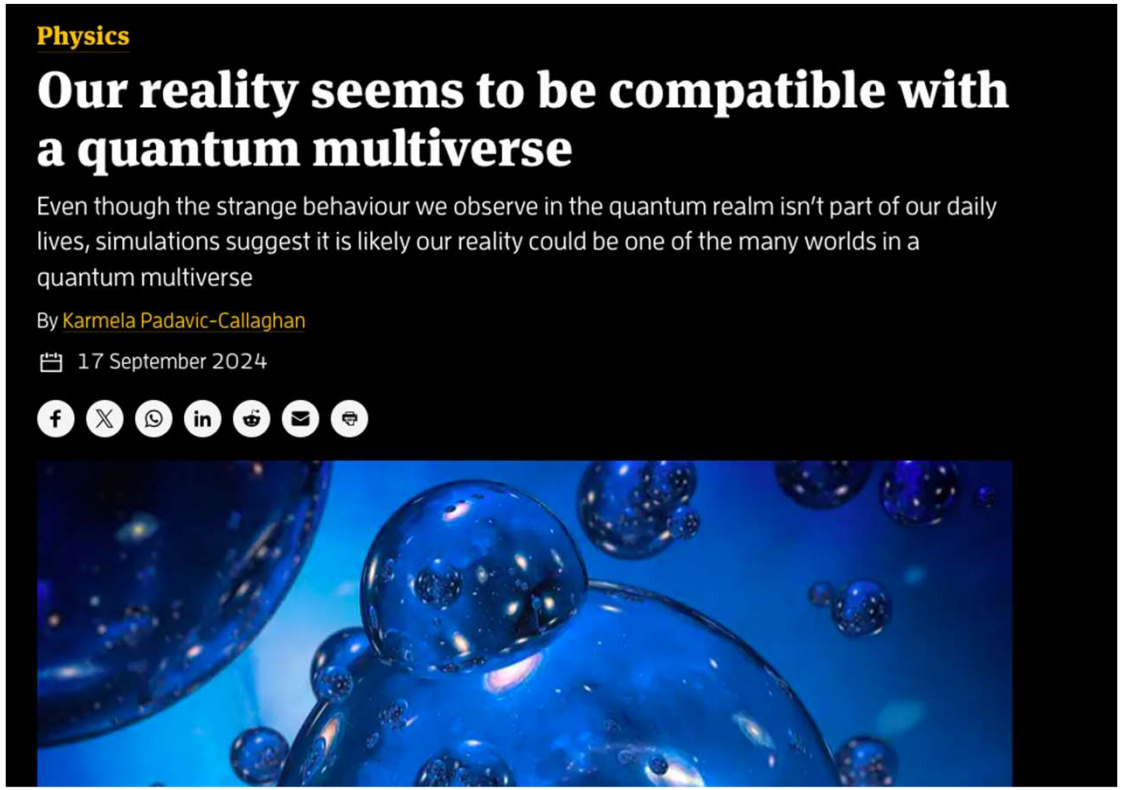

How to engage with journalists?

I think some of my work could lead to good stories but…

- It hasn’t been published in a high profile journal
  - This often does not actually matter, Nature and Science papers get more traction with media because the journals themselves send them to people like me, but journalists rarely discriminate

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- I'm not on Twitter and don't have a website
  - As long as your work is out there this isn't necessarily a problem (but if you want media to come to you more often it may be worth considering these things, especially if your work produces lots of visuals that will catch an eye of someone that is mindlessly scrolling)

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- I hate the idea of reaching out to strangers
  - Does your department have a PIO or a Comms person? They already write press releases and can help with publicising work. Many will email journalists directly or use a service that makes PR materials available to journalists.

A journalist thinks my work would make for a good story, now what?

- Look up the publication they work for, if it seems serious enough you probably should

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- But I'm worried about how the journal will react
  - If the paper has been accepted to a journal, the journal will communicate if there is embargo and if there is one, journalist will respect that
  - If the paper is under review or hasn't been submitted yet but is on a preprint server, you're fine
  - If you're not sure you can always reach out to the journal and have them look at the journalist's request and information

A journalist thinks my work would make for a good story, now what?

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- But I'm worried about how the journal will react
- But they say they won't show me a draft of the article
  - If they do show you the draft you should be worried! Journalism is all about objectivity and independence, you as the subject of the story should not be able to make big changes (imagine if this happened in politics journalism)
  - You can ask to see your quotes or, during the interview, ask the journalists to walk your through what they think the structure and punchlines of the story will be

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- Look up the publication they work for, if it seems serious enough you probably should
- But I'm worried about how the journal will react
- But they say they won't show me a draft of the article
- But I don't think this result is actually that big of a deal
  - Say this in the interview, but do also acknowledge that someone who writes stories for a living (and their editors) think your work is awesome

A journalist thinks my work would make for a good story, now what?

- What happens if I don't talk to them?
    - If the paper has been accepted to a Nature or Science family of journals, journalists can access them through the journals' press site and might write about it anyway
    - If the paper is on the arXiv, it's in the public domain an the journalists might write about it anyway

… if you're worried about your work being covered accurately, your best bet is to engage with folks that are covering it in some capacity

Interview tips

- The biggest lift for the writer is explaining why a study/paper/experiment is important or interesting at all. The reader rarely has knowledge of past work, trends in the field or what is even standard for some subgenre of research. Start broad and try to give lots of context first.
- Technical language and process details are really hard. Stories have to include a section that describes what was done (*"The researchers started by…. Then they…"*) but expect that section to be simplified and shortened or to rely on analogy. Most words that need to be defined for the reader typically get edited out. (Editor's can be brutal about this!)

Interview tips ctd.

- This varies, but it's probably better to assume that the writer doesn't have 1000s of words and will have to leave out really interesting parts of your interview in favor of other really interesting parts. It's never personal.
    - At New Scientists news run at 400-700 words, most other magazine commission at 800-1200 unless the story is a feature that features many scientists
- Breaking news and embargoed stories have to be turned around quickly so being willing to find time for an interview on a short notice and being able to speak to the point is something writers value immensely
- It's always ok to ask how long a story will be or who the magazine's targeted audience is - in fact you should consider always doing it just like you might consider asking what you may be quoted as saying

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This all still holds even if you're being asked for comment and the story is not about one of your papers. Often, outside commenters help the writer contextualize and understand the work much better than their primary sources/authors

Once the story is out: corrections and “surprises”

- Headlines and subheadlines for articles are almost never up to the writer and get set during the editing process. There's a lot that goes into titles, mostly SEO considerations and “buzziness”, so the article about your paper may not have a title that is very similar, or similar at all, to the paper's title
- Magazine editors are different from editors in peer reviewed journals in that they make more serious changes, from adjusting language to shuffling paragraph order to cutting quotes. If you see parts of a draft before publication, the published version that's gone through editing will likely differ
- In almost all cases, changes that have to be made after publication, whether they be corrections of fact or other tweaks, have to be done by the editor. The writer can mediate but they will rarely actually be able to help you.

Once the story is out: sharing and following up

- Sometimes writers will let you know when a story has been published and sometimes they will not, if they don't it's very likely not personal and they're just busy (I interview 9-12 people most weeks, often I don't get around following up with all of them)
  - You may want to set up a Google Alert for your name if you want to be pinged the second a story is up
- Magazines share stories across socials, often repeatedly, but you can for sure share too + add it to your website
- Don't be shy about following up with the journalist the next time you have a paper - some of my best and favorite stories came from researches I spoke to once sending me an early copy of their next paper.

Thank you and please do ask questions!