

PENSÉE

Monthly updates from Cognitive Science



Besides creating knowledge for the community, communicating scientific discoveries to lay people and inspiring young students to be fascinated by the marvels of science is a scientist's paramount charge. Most of us remember Carl Sagan serenading us about the Cosmos even though few of us ended up astrophysicists.

This month, we explore the relevance of and a part of the landscape of Science Communication in India, in the hopes of starting a conversation about how we can communicate our findings better and beyond peer-reviewed papers.

We pay a special homage to a pioneer, rationalist thinker, anti-superstition advocate Dr. Narendra Dabholkar who personifies the many forms science communication can take in a regional context and the unfortunate costs the pursuit of truth can entail.

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- **Science is getting harder to read**

Ever read an academic paper from a field you've possibly been a part of for several years but had to interrupt the flow to decipher acronyms or unnecessary and perhaps even superfluous mathematical notation? We find ourselves agreeing with a lot of arguments made in this essay.

- **Ten Simple Rules for Structuring Papers**

This is an easy to follow, rational guide on how to organize and structure a manuscript well. The benefit to someone writing their first paper is obvious, but it might be equally valuable for a seasoned researcher to reflect if their writing style and work is as accessible for people unfamiliar with the field as it is for their peer group.

We Recommend

The Impostor - Samatha Mathew

[Read this Neurofiction piece](#), inspired by VS Ramachandran's 'Phantoms in the Brain'

Behave: The Biology of Humans at Our Best and Worst

In one of his most popular works, Robert Sapolsky addresses the neurobiological, developmental and evolutionary underpinnings of behaviour. Not only is the book a thorough summary of behavioral biology, it is also an excellent example of engaging and simple scientific storytelling. [Here is a PDF](#).

Science Communication for the masses

While we list several Indian Science communication resources below, we are certain several more exist. Of all of them, we believe Vigyan Prasar deserves a special mention, now on the air since 1989. The importance of public-funded science education in regional languages cannot be overstated. Specially considering the programming reaches students who often lack other resources such as books, academic journals, and at times, even classrooms.

- [Janasuddi](#)
- [Vigyan Prasar](#)
- [The Wire Science](#)
- [Think Pragati](#)
- [Siddharth Kankaria](#)
- [Sandhya Ramesh](#)
- [The Print Science](#)
- [The Life of Science](#)

Handpicked from the World Wide Web

Digital Gems

Bad Diagrams

Dr. Heloise Stevance conveys big ideas in small pictures. See her repository of "bad diagrams" and infographics [here](#).

Twitter threads

Check out some [crowdsourced advice](#) vis-a-vis formal scientific writing.

Also see [Reyhaneh Maktoufi's \(non-exhaustive\) list](#) of people who study science communication.

BioRender

BioRender, like the name suggests, allows you to render Biology figures easily. [Sign up for free here](#).

Rehearse your talks

PowerPoint now allows you to rehearse your talk and get detailed feedback. Go to SlideShow and find the 'Rehearse with Coach' option. See [this article](#) for more detailed instructions.

Events and Opportunities

Neuro AI Scholars Program

The Cold Spring Harbor Laboratory is looking for scholars to work at the intersection of neuroscience and AI. Find more details [here](#).

International Symposium on Artificial Intelligence and Brain Science (October 10-10)

Registration and more details [here](#).

OHBM Online International Mentoring Programme

An initiative by the Student and Postdoc Special Interest Group at OHBM, this program matches student mentees with a mentor. Find more details [here](#).

Neuromatch 3.0

Deadline for submission of abstract for the Neuromatch *unconference* being held online in October 2020 is October 7th. Find more details [here](#) or on [twitter](#).

Meet Sci-Comm: Shruti Muralidhar and Abhishek Chari

Shruti Muralidhar is a Postdoctoral Associate at the Picower Institute at MIT and Abhishek Chari is a freelance science writer and editor. They're the founders of [IndSciComm](#), a collective to help scientists do better science communication.



Tell us about your work - what do you do and how did you get here?

Shruti: I am a Postdoctoral Associate at the Picower Institute at MIT and have been here since 2016. I work on the role of inhibitory interneurons in learning and memory. I did my Masters in Neuroscience from NBRC, Gurgaon and my PhD in Neuroscience from EPFL, Switzerland, where I trained as a slice electrophysiologist while studying cortical circuits.

Abhishek: I am a freelance science writer and editor. These days, most of my time is spent in creating new scicomm material and planning new creative directions for IndSciComm. Previously, I worked as a science writer focused on philanthropic donor communications in The Picower Institute for Learning and Memory at MIT, USA. My scientific background is in microbiology, for which I specialized in researching microbial symbiosis at the University of Utah in USA, and biomedical sciences, which is what I studied for my Bachelor's degree at Delhi University in India.

How did you get involved in science communication?

Shruti: One of my first brushes with sci-comm was during my PhD when I took part in [FameLab](#), an international competition where you are challenged to present a clear, coherent and engaging scientific talk in 3 mins. My time with my fellow participants and the one-on-one training sessions helped me fully understand the power and scope of good science communication.

Later in 2017, following an argument with an Indian scientist on Twitter, I had a revelation of sorts about how much Indian science and scientists value science communication. With Abhishek Chari and Navneet Vasistha, we decided to pool our collective knowledge and talents to help Indian scientists communicate their science to the Indian public. We have branched into making podcasts, writing collaboration and providing writing training to students and scientists.

Abhishek: My interest in science communication comes from my love for science fiction and my passion for teaching. My love for science fiction, or SF for short, is built on how it dramatizes the all-too-real effects that science and society produce on each other. SF has important lessons for how we can effectively communicate this to everyone. As a teaching assistant at the University of Utah, I worked to improve pedagogical techniques so that students would be able to better understand biological concepts and apply them in their coursework and exams.

After Shruti published her manifesto on science communication in 2017, we co-founded IndSciComm and I wrote my first sci-comm articles under IndSciComm's banner. Around the same time, my stint at MIT as a science writer helped me understand how institutionally supported sci-comm could flourish and contribute to the scientific enterprise.

What, in your view, does sci-comm entail? For someone new to the activity, what would you say makes it an important activity?

SciComm can be any form of communication for bridging a knowledge gap between people who don't share the same level of scientific understanding about a given topic. When done well, it allows us to make better informed choices in our daily lives about many issues that range from personally important to globally relevant. Given the state of our world today, realizing how science and society affect each other is one of the most important requirements to solving many of humanity's problems.

Why did you start IndSciComm? Did you have specific goals in mind when you started?

IndSciComm began due to a disagreement with an Indian scientist, on the internet, about the need for science communication. He thought that writing scientific or technical papers about research is all that any scientist needed to do to 'communicate' their work. Shruti didn't agree with that notion and eventually wrote [an article](#) expressing her views. Then we decided to 'walk the talk' and form IndSciComm to show how good science communication can be done, with a special focus on Indian scientists and the Indian public.

How do you see the current landscape of science communication in India? Do you see it changing and what's the direction you hope it takes with your work?

Currently, there is extremely low support for sci-comm in India. We have been pushing for greater recognition, from the Indian government and research institutions, about the need to support sci-comm as a valued professional arena. Dedicated sci-commers are pursuing interesting projects, in spite of widespread institutional apathy and low monetary rewards, to lay the foundation for sci-comm with an Indian focus. Shruti was interviewed on the [Think Pragati podcast](#) about some of these and other issues. We hope that the growing body of our work, which includes interviews with Indian scientists, training for budding science writers, podcast episodes in multiple Indian languages and written sci-comm articles can show something of the range of what is possible and encourage others to approach sci-comm in creative ways.

Through your answers, you've mentioned Think Pragati and some of the other SciComm resources. Could you list out a few more you would want people to follow?

[The Wire Science](#), [Kollegala Sharma's](#) podcast [Janasuddi](#), [IndiaBioscience](#), TIFR's [Chai and Why](#), [Gubbi Labs](#), [Asian Scientist](#), [Scicomm Sci](#) run by [Siddharth Kankaria](#)

What advice would you give to a student who wants to communicate better? Given that Indian institutes still don't offer dedicated training for this, how can students, or anyone looking to do sci-comm, get started?

First, read good sci-comm. Then, read more sci-comm, both good and bad. Good sci-comm conveys the science accurately, and respects its audience by creatively engaging with them. Bad sci-comm gets the science wrong and does not demonstrate adequate care or responsibility towards the audience. For a student of the sciences, the best way to assess the difference is by reading a sci-comm piece on a topic outside their scientific background or expertise. That's when you realize, at least a tiny bit, how a non-scientist member of the public might feel when they experience sci-comm. Did it help you understand things better or did it just make you feel ignorant or inadequate? Then, start a blog and start writing. Write for departmental, college or university magazines and newsletters. Write for organizations that support scientists learning to write for the public, like [Massive Science](#) or IndSciComm. Use resources like [The Open Notebook](#) to get more ideas and information about science writing. Then start writing for news and sci-comm outlets. Writing not your thing? Find out what your thing is - teaching, live talks, improv, comedy, podcasting, videos - it could be anything. Seek out opportunities to learn the medium. Social media today is teeming with sci-comm competitions and courses to help you become a better communicator in the medium of your choice.

It is possible for a student to continue writing in the same way without evolving a better communication style if they don't receive constructive feedback. How would you suggest students reach out to members of academia and get valuable feedback and suggestions (if their campus and department is not a place they can find it)?

Reach out to us and/or some of the other sci-comm initiatives we have mentioned earlier. Pitch ideas for articles or projects to them, and use their editorial team's response to improve on your next attempts. Either try to collaborate with them or join training programs that they may be running.

If someone is interested in contributing to IndSciComm, how can they get involved?

Please write to us at indscicomm@gmail.com with any ideas you may have for collaborations or if you'd like to take your first steps in sci-comm. You can check out [our website](#) to see the range of our sci-comm projects. Connect with us on [Twitter](#) and listen to IndSciComm's [audio projects](#) on all major podcast distribution platforms.

Shruti, you recently also started BiasWatchIndia. What prompted you to do that?

[BiasWatchIndia](#), just like IndSciComm, was born out of frustration at the lack of action and accountability on gender inclusivity in Indian science. Sometime in 2019, a colleague was organizing a conference on the intersection of neuroscience and AI in Bengaluru. His tentative speaker lineup consisted of nearly 12-15 men and no Indian women neuroscientists. When I asked him about it, he said it was difficult to find women researchers in this sub-field, and especially any who would agree to be speakers. Refusing to believe his excuse, Abhishek and I crawled through websites of as many biology/medicine and neuroscience related institutes we could find and scraped together the NeuroFem list - a database of Indian women neuroscientists. We didn't expect more than 50 and we came up with 128.

In the meantime, I also found out about a [Women in Science](#) directory maintained by the Indian Academy of Sciences (IASc) and was looking to expand our efforts to include the whole of Indian Science. After being given the run-around for a year, I finally connected with Prof. Shubha Tole and Dr. Vaishnavi Ananthanarayanan a couple of months ago. Although I'm helping Prof. Tole to try revamping the existing database, I wanted to find a quicker way to get the ball rolling in pointing out gender disparities in Indian Science. Thus, Dr. Vaishnavi and I modeled BiasWatchIndia on [BiasWatchNeuro](#) - an already existing effort to document gender disparity in neuroscience conferences and workshops. We are currently running it with support from Vaishnavi's EMBO grant and hope to expand on our efforts soon.

BiaswatchIndia is doing an incredible job in highlighting a lack of representation of women in academia and the prevalence of 'manels'. How can we scale this to include discussions about lack of non-cis and non-hetero identities and several other marginalized groups?

Shruti and Vaishnavi: For BiasWatchIndia's current activity of documenting manels, we're relying on public information to collate data. It's much harder to get this kind of data to look at lack of non-cis and non-hetero identities and several other marginalized groups in these same conferences. But we do realize that this information needs to be collected and used to formulate actions.

So, if you are a member of a marginalized group, you need to first draw attention to the marginalization. To maintain the attention, you need to gather data about how widespread the marginalization is and publicize the ways in which it affects the members of your group. Draft petitions to attract and showcase public support for your cause. To foster real world changes, you need to craft policy memos which can form the basis of directives that change how organizations function, so that they can have more equitable representation of different groups of people. Then apply for grants that allow you to do all the above with the required level of financial and administrative support. Form allyship networks with other marginalized groups to increase the level of attention to such problems and to magnify individual efforts into a sustained and socially effective movement.