

demonstrated BitterSweet (<https://cosylab.iitd.edu.in/bittersweet/>).

The system not only distinguishes between bitter and sweet, but gives a relative measure of sweetness – a sweetness index – pointed out Bagler. The system is still under scientific review. But food industries catering to diabetics have all the data they need in one place.

Akshay Malhotra (ITC WelcomHotel, Dwarka) pitched a chef's intuition against data-driven computation. Good chefs overcome the limitations of their discipline by leveraging on experience and intuition. While data can indeed help nucleating new dishes, experience and expertise give chefs an edge. He took the simple example of making lemonade. Even people trained in hospitality and catering courses may squeeze the lemon and throw the rind away. But an experienced chef knows that by dropping the rind into the lemonade, the acidity is neutralized to some extent, and the lemonade tastes better.

In a panel discussion that followed, Bagler pointed out that the culinary fingerprints of regional cuisines in India as well as the data-driven analyses of culinary patterns in traditional recipes across the world are useful to the hospitality and tourism industry.

Gyan Bhushan (Ministry of Tourism, GoI) expressed his Ministry's interest in computational gastronomy and mentioned scope for funding.

Sabyasachi Mukhopadhyay (IISER-Kolkata) who has donned the hat of an entrepreneur, mentioned that commercial exploitation of the studies is limited. He pointed out that software apps can be patented only if there is a hardware component. So unless such studies are funded, there is little possibility of investment from venture capital.

This brought home the points that Ranjan Bose (IIT-Delhi) mentioned at the beginning of the symposium. He expressed willingness to collaborate with researchers from other institutions and

the corporate sector to vitalize the ongoing research further. He pointed out the possibilities for the corporate sector: establishment of professorial chairs, instituting scholarships, supporting internships, etc.

This is the only way forward, as the lead investigator, Bagler, is a proponent of open and free sharing of research data. For him, there is more in research than merely making money. The research avenues that are opening up because of the creation of such databases are exciting. For example, data analytics can also decipher culinary evolution. A Darwinian look at the culinary landscape of the world may even bring out parallel relationships between culinary evolution and the evolution of languages and human genetics.

K. P. Madhu, Science writing consultant, *Current Science*.
e-mail: scienceandmediaworkshops@gmail.com

MEETING REPORT

The art of science writing*

Science writing is the art of effectively communicating research. As with any other art form, to excel in science writing, one needs to use imagination to capture interest.

India is becoming a science hub with substantial growth in the research community and research output. Yet, science communication and reporting is poor in the Indian context. This is mainly due to a lack of understanding of the world of science publications and the availability of platforms for writing science. Effective communication and publication demand time and effort. With the challenges involved in science writing in mind, the Current Science Association, Bengaluru has organized workshops to improve science writing, provoke scientific temper and promote science writing

skills among researchers and science faculty.

The eighth science writing workshop was held recently, with an online discussion group formed a few weeks before the event.

A total of 14 participants – ten scientists, one postdoctoral researcher, one senior research fellow and two Ramaseshan fellows attended the workshop. They belonged to various age groups and were from different institutions across the country.

The welcome address was delivered by G. Madhavan (Executive Secretary, Current Science Association). The keynote address by S. K. Satheesh (Chief Editor, *Current Science*) provided a glimpse of the history and mandate of *Current Science*, and the types of research articles published in the journal. He also highlighted manuscript categories in the journal and some common problems from the editor's perspective.

The workshop was effectively monitored and conducted by K. P. Madhu

and Gita Madhu. Participants were orientated, in a scientific manner, to understand and report natural phenomena using logic. Madhu stressed on the need to overpower cultural, social and psychological barriers against asking questions.

Yateendra Joshi (freelance science editor) in the session on writing scientific papers, described the generally accepted IMRaD structure of scientific writing: introduction, materials and methods, results and discussion. He also explained how to interpret and discuss the results. Joshi also discussed what should and should not be considered as keywords, and how keywords impact the visibility of a research paper. He highlighted the common mistakes made by authors while submitting their manuscripts – overlooking aim, scope and reference style of the journal. He also warned against predatory journals and informed participants about websites which provide a detailed list of authentic journals.

The workshop was highly interactive and also provided background knowledge

*A report on the Science Writing Workshop held at Divecha Centre for Climate Change, Indian Institute of Science, Bengaluru, during 3 to 10 February 2019.

and theory. The participants were exposed to the principle of search–research–read–reflect before starting to write, and revise–rewrite–restructure–reformulate after writing for effective communication. The workshop focused on the various barriers to good science writing and techniques to overcome them. Participants were introduced to the idea of proper selection of the target group for effective communication, using a game. Exercises were designed for participants to effectively overcome problems in writing science. Various science platforms for keeping up-to-date with advances in scientific research, modern tools and databases were introduced and discussed in great detail.

There was a discussion on the role of creativity and emotions in rehumanizing research to make it exciting to readers. Madhu also drew attention to the use and effect of simple sentences and active voice on the readers. To drive home the point, he made participants choose a research paper using the Web of Science. The task was to use the story structure to write about the paper.

In the subsequent session, participants narrated their 300-word composition in a comprehensible manner and then the forum was opened for further refinement. The session discussed the communicator's dogma: a three-step process wherein factors involved in the flow of message from the author to the readers were transcribed, translated and terminated for the delight of reading.

Rohini Godbole (Centre for High Energy Physics, IISc, Bengaluru) discussed the sensitive issue of gender parity in science, challenges faced by women in science and the downsides of policies implemented to safeguard the interests of women in India. She urged the participants to be mindful about gender bias and its long-term impact on shaping science. We need to devise policies which are gender neutral, Godbole insisted, sharing her experiences.

Karthik Ramaswamy (Archives and Publication Cell, IISc) addressed the causes behind bad writing. He pitched the need for simple, clear sentences to meet the reader's expectations. He also provided participants some writing exercises to identify clauses, nominalization, subject and verb in a complex sentence and then reframe it as a simple, coherent sentence for better clarity.

In the next session, Sanjay Pai (Columbia Asia Referral Hospital, Bengaluru) explained the significance of following ethics in science writing and the cost that defaulters have to pay. Malpractices in scientific research are not only a setback to the advancement of science, but also harm society at large. He spoke in depth about plagiarism and how it is frowned upon by the scientific community.

In the last session of the workshop, Gita Madhu stressed on the need for good input to foster good writing and demonstrated how anyone can enhance language learning using on-line resources. She also briefly discussed social

media platforms as useful resources for researchers and provided a glimpse of blogging for science. Participants were shown how to access free-to-use images and to properly credit them. There was also a session on obtaining relevant information and knowledge management.

The workshop stressed on the importance of good selection and design of experiments for furthering good research. Abstracting science that is not related to their field gave the participants a bird's-eye view of science as a body and their place in it. The participants were guided through various forms of scientific writing such as science papers, reviews, proposals, interviews, book reviews, posters, etc. through hands-on activities. This was appreciated in the feedback and some suggestions for improvement were made.

The workshop concluded with the distribution of certificates and a vote of thanks by Madhavan. The outcome of the workshop will soon be featured as science stories on various platforms. Participants are currently engaged in writing a column for *Current Science*.

Ravi Mishra*, National Centre for Polar and Ocean Research, Goa 403 804, India; **Amruta Nair**, S. Ramaseshan Fellow, **Mabel Merlin**, St Mary's College, Thrissur 680 020, India; **Pratik Pawar**, S. Ramaseshan Fellow.

*e-mail: drravimishra@gmail.com