



Venture Center
100 NCL Innovation Park, Dr Homi Bhabha Road,
Pashan -411008

Technical Workshops Series – 2017

**Five and half day workshop on
Nuts & Bolts of Science Writing for PhDs, Post Docs and early career scientists
- Organized by Venture Center-**

Learn	<p>This workshop has two components: A virtual workshop and a face to face workshop.</p> <p>The virtual workshop will orient the participants to the philosophy, methodology, structure, history, sociology, economics and culture of science – areas where people with science education are weak. It will provide participants with resources on writing and other media skills necessary for the effective communication of science. It will also initiate discussions on issues that are relevant in writing science, including ethics. The virtual workshop will require half an hour of your time on working days.</p> <p>The face-to-face workshop will focus on the principles involved in science communication and the strategies for putting the principles into practice. The workshop leverages on the principle of learning by doing and will involve writing short science news items, a mini review, review article, research report or a scientific paper. The participants may choose the format and topic of their interest. By the end of the workshop, participants will have learned the tricks needed to write various types of scientific communications in the context of their own writing as well as in those of other participants. They would gain an understanding of the pitfalls to avoid. Tools and tips that they learn during the workshop will aid them in their writing of science.</p>
Organized by	Venture Center
For whom	PhDs, Post Docs and early career scientists
When	Monday - Saturday 8 – 13 May 2017 Time 0900-1700 hrs
Where	E-classroom , Venture Center, 100 NCL Innovation Park
Contact	Ms. Lipika Biswas Phone: +91-20-2586-5877 Email: eventsdesk@venturecenter.co.in Technical queries: Mr KP Madhu Phone:+91-8007 97 68 92
Cost	<p>Rs 10000/- per head Maximum 20 seats; First-come-first-serve.</p> <p>Application form available at -http://bit.ly/2inXT7Q More info on: http://www.venturecenter.co.in/workshops/ Last date for receipt of applications 1 May 2017</p> <p>Note:-</p> <ul style="list-style-type: none">• Fees paid is not refundable and non transferable under any circumstances.• Organizers reserve the right to accept or refuse or delay registrations to optimize the composition of the group and to maximize learning for all participants.

Venture Center: <http://www.venturecenter.co.in/>
Contact No: 020 2586 5877; Email: eventsdesk@venturecenter.co.in
Facebook Page: <https://www.facebook.com/venturecenterpune?ref=hl>



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Introduction

As students of science, we are often told that spelling, punctuation and grammar do not matter, so far as you provide all important points in an exam – except, of course, in certain cases such as sulphide and sulphite. Science education does not introduce even the basics of philosophy, methodology, history, sociology, politics, economics and the culture of science. Though we spend more than 7 man-years in English classes by the time we finish our tertiary education, most of us cannot communicate well in the language that has become the de facto language of science.

Using a Google Group platform, the virtual component of the workshop orients participants to such missing parts in our science education. It looks at science from national and international points of view. It aligns participants to the institutional and personal aspects of science writing.

The virtual workshop initiates discussions and shares resources and links that are important for writing science. The virtual workshop also allows participants and trainer to get acquainted even before the face-to-face workshop and, thus, saves time.

While the Google Group platform is used to provide relevant knowledge and orient attitudes, the weekend face-to-face workshop will focus on building relevant skills. The skills include the ability to ask relevant and productive questions, to search for information using various tools and strategies, to manage the knowledge accessed using digital and web tools, to use digital web tools for writing and editing academic papers, to edit for creating a flow of language and logic, and to structure the content for a specific function.

You will need to come with your laptop.

The workshop will have presentations, demonstrations, group discussions, games and role play. The workshop will provide feedback on the work done by participants for improving skills. Later, detailed individual feedback on the written works of the participants is provided using the virtual mode to ensure that the principles are fully internalized. Participants are expected to use the outreach platforms provided to practice the principles learned and to further improve skills.

Course includes

- Theory and practical sessions
- One-on-one interaction with the expert
- Certificate of Participation issued by Venture Center
- Membership in events mailing list of Venture Center
- Tea and lunch at Venture Center cafeteria

***Please note, the participants will have to arrange for their own travel/local transport and accommodation and dinners.**

- For accommodation (standard and budgeted hotels) please visit:
<http://www.venturecenter.co.in/puneguide/standard.php>
- For accommodation (deluxe and luxury hotels) please visit:
<http://www.venturecenter.co.in/puneguide/deluxe.php>
- For local transport details visit:
<http://www.venturecenter.co.in/puneguide/taxi.php>



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Course Outline

The following content will be covered by a combination of virtual workshop and face to face workshop:

What is science? How is it different from other types of knowledge? What is technology? How do science and technology differ from innovation? Structural components of Science; Characteristics and nature of Science; The importance of understanding the philosophy, methodology, history, sociology, economics and culture of science

What is communication? How is it different from providing information or education? Difference between expressing and communicating; Distinction between target group and readers/listeners/viewers ; Communicating for impact on target group and to engage media consumers; Communicating to elicit community action: Dictyostelium model for understanding essential principles; Nature of political, religious and commercial communication; Communicating science to elicit action, change or reform

Philosophy, methodology, structure, history and sociology of science

Ideas of Francis Bacon, Rene Descartes, David Hume; Karl Popper, Thomas Kuhn, LakatosFeyerabend; J D Bernal, Bruno Latour

Indian Science

Science and the Indian Constitution; Evolution of Science Policy in India; Five year plans and science in India India as a world leader in Scientific Research; Organization of scientific research in India; Scientific infrastructure in India; Science: A comparison between India and other countries ; Status of scientific research in India 2015; Scientific productivity in India

Communication between scientists – Structure and function of a scientific paper; The process of writing: Search, Re-search, Read, Reflect, Write, Rewrite, Restructure; Searching for and researching scientific content: Google, Google Scholar, Databases, Directories' Translating terminology: online science and technology dictionaries, Note taking tools

Activities: Asking questions, formulating key words, searching, bookmarking, using a Web Clipper, organising PDF files, bibliography management

Communication structures: Structure of a story, drama, film, news report; Emotional variation in time line; Emotion and action; Emotion and Rasa; Role of the rasas in science communication

Scientific Content, structure and composition

Composition in visual, aural and textual realms, rasas and composition; Restructuring content or allowing evolution of structures?; Evolution of non-linear structures: e.g. Eddies and whirlpools ; Extraction of principles – Reading to increase input, channelizing output

Structuring scientific content

Restructuring scientific content: Crisis and resolution as key points for stating the problem and reaching the solution; Dogmas of media and communication; 5 Ws and H – who when and where first. Setting the scene with what; Science in Indian Media ; Protocol for generating scientific news and feature content; Writing a news item based on primary source, a scientific paper. Examples



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Language and science

Nature of scientific language: Removal of first person, removal of identities, names of scientists; Use of passive voice; Lack of attention to spelling and grammar in teaching and learning science; Essentials of punctuation; Parts of speech

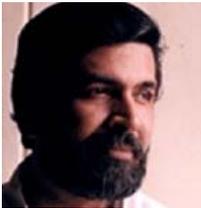
Choice of protagonist(s) of your story; Tense: transitions between hypothesis, experiments and results; Connecting words, sentences and paragraphs; Converting complex nouns into simple verbs; *Activity:* Learning grammar using web tools

Literary devices for science communication

Scene setting, Simile, Metaphor, Examples, demonstration, Anecdotes, Thought experiments; Allusions to culturally recognized ideas, characters, events; *Activity:* Message, Media, Masses, Market

Pitfalls and dangers to avoid in communication related to:- Agriculture, medicine, technology and environment
Plagiarism

Anchor faculty



K. P. Madhu is presently Science Writing Consultant to the multidisciplinary journal, *Current Science*. Besides writing, he produces science videos for different audiences. He has produced more than a hundred science programmes for TV. He has trained and groomed media professionals to communicate science. In the last one year, he has trained many scientists and researchers to write science. More about him and the work done by those he has trained at scienceandmediaworkshops.wordpress.com



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Workshop Schedule			
Time	Session title	Lead	Venue
Day 1			
0900 – 0930	Registration		Foyer area
0930– 0945	Introduction to the course and faculty	Dr. Manisha Premnath	E-classroom
0945 – 1100	What is Science? A discussion		E-classroom
1100 – 1130	Tea break		Cafeteria
1130 – 1300	What is communication? A presentation		E-classroom
1300 – 1400	Lunch break		Cafeteria
1400 – 1500	Characteristics of questions <i>Activity:</i> formulate three questions		
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Questioning the answers – A demonstration Extracting the principles		
Day 2			
0930 – 1000	Review of Day 1 and queries		E-classroom
1000 – 1100	Nature of communication between scientists; Structure of a scientific paper; Evolution of structure of papers and journals Nature of scientific language: Removal of first person, removal of identities, names of scientists; Use of passive voice; Trickling down of science: papers, reviews, monographs, textbooks...		E-classroom
1100 – 1130	Tea break		Cafeteria
1130 – 1300	Structure of stories, dramas and feature films Structure of news reports; From scientific paper to news report, extraction of 5Ws and H, inverted pyramid, 5 +/_ 2 rule, specific to general, passive to active,...		E-classroom
1300 – 1400	Lunch break		Cafeteria
1400 – 1730	Structure, form and function; Evolution of dissipative nonlinear structures; Principles of evolution of structures: flows and forces, critical points or tipping points; Principles as applied in practice: input output relationships; Scientific paper as a story		E-classroom
	Tea break will be in between the session		Cafeteria



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Day 3			
0900 – 0930	Review, queries		E-classroom
0930 – 1100	Increasing input in scientific and literary realms; Searching for and researching scientific content: Google, Google Scholar, Databases, Directories – Bookmarking, web clippers,		E-classroom
11:00 – 11:30	Tea break		Cafeteria
1130-1300	Tools for managing knowledge in the digital era Translating terminology: online science and technology dictionaries		E-classroom
1300 – 1400	Lunch		Cafeteria
1400-1530	Guided practice		E-classroom
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Composition in visual, aural and textual realms, Rasas and composition; Eidetic imagery and flow of thought; Language and flow of thought; Restructuring content or allowing evolution of structures?		E-classroom
Day 4			
0900 – 0930	Review, queries		E-classroom
0930 – 1100	Techniques of editing: demonstration and practice by participants		E-classroom
11:00 – 11:30	Coffee break		Cafeteria
1130-1300	Common problems in Indian writing of English Essentials of punctuation, parts of speech, sentence structure, Tools for double checking grammar and style		E-classroom
1300 – 1400	Lunch break		Cafeteria
1400-1530	Choice of protagonist(s) of your story Tense: transitions between hypothesis, experiments and results Connecting words, sentences and paragraphs Converting complex nouns into simple verbs <i>Activity:</i> Learning grammar using web tools		E-classroom
1500 – 1530	Tea break		Cafeteria
1530 – 1700	Improving logical, linguistic, temporal and special flows		E-classroom
Day 5			
0900 – 0930	Review, queries		E-classroom
0930 – 1100	Literary devices for science communication:		E-classroom



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	Scene setting; Simile; Metaphor; Examples; Demonstration; Anecdotes; Thought experiment; Allusions to culturally recognized ideas, characters, events		
11:00 – 11:30	T break		Cafeteria
1130-1300	Emotional variation in time line; Emotion and action; Emotion and Rasa; Role of rasas in science communication		E-classroom
1300 – 1400	Lunch		Cafeteria
1400-1530	Orientation to the readers; distinction between target group and readers		E-classroom
1500 – 1530	Tea break		Cafeteria
1530 – 1700	<i>Activity: Message, Media, Masses</i>		E-classroom
Day 6			
0900 – 0930	Review, queries		E-classroom
0930 – 1100	Pitfalls to avoid in communicating issues related to agriculture, medicine, technology and environment		E-classroom
11:00 – 11:30	Tea break		Cafeteria
1130-1300	Plagiarism and scientific misconduct		E-classroom
1300 – 1400	Lunch		Cafeteria
1400-1430	Closing Ceremony, Certificate Distribution		E-classroom

The participants will continue to practice and share their improved communication materials using the Google group. Mentoring and guidance will be provided for a month after the face to face workshop.

About the organizers



Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India.

Venture Center focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering.

The Venture Center is a technology business incubator supported by DST-NSTEDB.

For more information, visit <http://www.venturecenter.co.in/>

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