

The Second Science Communication Workshop at Varanasi

20-23 February 2011

Introduction

The Wellcome Trust DBT India Alliance (IA) is a funding agency that aims to empower biomedical research in India and capacity build the future of Indian science. At present we are funding four stages in a scientist's career:

The **Margdarshi Fellowships** that will enable scientific leaders to relocate from their current institutions in order to augment their scientific careers. The **Senior Research Fellowships** that supports outstanding independent research scientists. The **Intermediate Research Fellowships** that aids scientists to establish themselves as independent researchers in an Indian academic institution. Last but equally important are the **Early Career Fellowships** which allow young Postdoctoral and final year Ph.D students to obtain training at different Indian and foreign institutions enabling them to establish an independent career as a research investigator in India.

To provide guidance and support to **Ph.D** and young **Postdoctoral students** who are enthusiastic to pursue a future career in research and aspire for independent funding, the India Alliance and the Department of Biotechnology-Banaras Hindu University Interdisciplinary School of Life Sciences developed and conducted a **science communication workshop programme** in Varanasi. This was our second such workshop, the first being a great success at **Hyderabad in 2010**.

This workshop was exclusively planned for the students of **Banaras Hindu University (BHU), Varanasi**.

The programme essentially had **three sessions**, each aiming to

1. Provide invaluable inputs on **presentation skills** from an HR consultancy named Accord consultants Pvt. Ltd with 26 years of experience in training employees of various corporate and governmental organizations.

AND

2. Provide advice and suggestions on **grants writing** from scientists who enjoyed mentoring young minds. Some of these scientists are also members of the India Alliance Committee which interviews and decides awards made in each of our fellowship schemes.

AND

3. Provide informal **interactive sessions** with our above members to obtain knowledge about their research areas and career choices.

At the onset, 24 students from various departments of BHU were short listed for this workshop based on an online competition. These students participated in the first two sessions held at The Hotel Hindustan International, Varanasi. The third session was open to all and was held at The Banaras Hindu University, Varanasi.

Session 1: Presentation Skills

Day1: 20 February 2011

Dr Megha, Programme Manager of the India Alliance, apprised the participants of the workshop sessions and discussed its format and goals. She also acquainted the participants with **Mr P. Shivanand** and **Ms Shilpa Kamath** of Accord consultants.

The aim of the first session on presentation skills was to develop positive qualities for being a good communicator. At the onset a **3 minute talk** was delivered by each participant with the title being '**me and myself**'. Each talk was followed by a question and answer session. The talks were videotaped and individually evaluated. Important points such as positive body language, profiling the audience, effective preparation and rehearsal, time management, voice projection, emphasizing a talk with analogies and managing stress and nervousness were illustrated. The participants were given an opportunity to inculcate positive attributes from this session and deliver another talk the next day.

The participants were also taken through the elements of an **engaging presentation** such as its content, design and delivery. The entire session was interactive where in the participants were asked to evaluate two video presentations and explain each of the three above elements.

The audience was also given an assignment to incorporate concepts from this session and create a short **PowerPoint presentation** which would summarize an interesting scientific article they had read in the recent past.

This session meant to build up positive personality traits and improve the quality of overall interaction within formal and informal surroundings. The session taught the importance of essential elements to engage an audience while being able to think and communicate clearly with them. The session also highlighted the importance of a presentation that could convey all the pertinent information in a concise but informative manner.

Day2: 21 February 2011

The participants were asked to improve their presentation skills with inputs from the previous day's training session and once again present short talks. These were again evaluated by the Accord team. As expected, there was a marked improvement in all the presentations.

At lunch time, the Presentation Skills session ended with a practical course on Dining etiquette. It provided hands on experience to the participants on how to enjoy an eight course meal with confidence and finesse.

Session 2: Grants Writing

Prior to this session, a 1000 words scientific proposal submitted by each of the 24 participants was evaluated and reviewed by a mentor group consisting of Professors from BHU,

Members of the India Alliance selection Committee and IA CEO

The mentors assessed vital points in each proposal such as

1. **Title of the Project**
2. **Word Limit**
3. **Research Question**
4. **Structure of the Proposal**

5. **Readability, and**
6. **Overall Assessment of the proposal**

The following mentors took part in this session:

1. **Professor Subhash Lakhotia**, Department of Zoology at BHU, Varanasi.
2. **Professor Rajiva Raman**, Department of Zoology at BHU, Varanasi
3. **Professor Anuradha Lohia**, CEO of the India Alliance and Professor of Biochemistry at Bose Institute, Kolkata.
4. **Professor Doreen Cantrell**, Department of Cellular Immunology, Wellcome Principal Research Fellow and Head of College, University of Dundee, United Kingdom.
5. **Professor Gaiti Hasan**, Division of Neurobiology at the National Centre for Biological Sciences, Bangalore.
6. **Professor Claudio Sunkel**, Group leader of the Division of Molecular Genetics and Director of the Institute of Molecular and Cell Biology, Porto, Portugal.
7. **Professor Luca Pellegrini**, Department of Biochemistry at the University of Cambridge, United Kingdom.
8. **Professor Sanjeev Galande**, Laboratory of Chromatin Biology and Epigenetics, Indian Institute of Science Education and Research Pune, Pune.

The participants were divided into smaller groups of 4 and a mentor from the above peer group was assigned to each. Mentors assessed individual proposal and highlighted relevant portions for a successful grant application. The personal feedback from successful mentors allowed the participants to develop clarity towards essentials on an application that are evaluated by referees.

After the mentoring session, **Dr Megha** took the group through a typical Fellowship application form of the India Alliance. The entire team of Grants Advisers from India Alliance took part in providing their inputs where ever necessary. The participants obtained a flavor on do's and don'ts for submitting a good application.

The following points that make up a successful grant application were discussed in this session:

1. **Mission of the funding agency-** the participants were informed about importance of matching the objectives of their application with the mission of the funding agency.
2. **Application process and Timeline-** It was important to start planning well in advance and be informed about the stages of assessment that the application will go through. The participants were informed to read the entire application form and not leave anything incomplete. Importance of adhering to deadlines was also discussed.
3. **Choice of Title-** The participants were taught the importance of choosing an appropriate title for their application.

4. **Writing an Abstract and Proposal**- The abstract and the proposal were then reviewed in detail and points on Hypothesis, Objectives, Specific Aims, Significance, Preliminary Studies, Research Design, Methods and Timetable were discussed.
5. **Financial Details**- The participants were informed on how to present a well justified budget while being realistic.
6. **Flow of the Application**- It was essential to review the application many times before submitting it. The participants were reminded that the application is peer reviewed and were asked to aid the reviewers by providing a crisp and well written application.
7. **Obtaining Suggestion**- The participants were encouraged to discuss their application with their mentors and peers for a critical feedback.

At the end of the second day of the workshop, the participants had not only learnt attributes of good communication but also of using this to prepare a successful grant application.

Session 3: Interaction with India Alliance Committee Members

Day 3: 23 February 2011

This session was open to all students of BHU and was held in the Faculty Hall of the Sprawling University campus. The panel members included Professor Subhash Lakhotia, Professor Rajiva Raman, Professor Anuradha Lohia, Professor Doreen Cantrell, Professor Claudio Sunkel, Professor Luca Pellegrini, Professor Sanjeev Galande and Professor Chittaranjan Yajnik from King Edwards Memorial Hospital, Pune.

Firstly, **Professor Lakhotia** introduced the University and its proceedings to all participants. **Professor Lohia** then discussed about the objectives of the India Alliance and how it could offer to empower University students. The students were then audience to two very interesting and informative science talks by **Professor Sunkel** on 'Maintaining genomic stability during cell division' and **Professor Galande** on 'Signaling meets chromatin: Role of chromatin organizer SATB1 in regulation of Wnt signaling'. These science talks presented a comprehensive understanding of structuring a talk. Afterwards, Learning from Choices session was arranged to motivate the students to pursue a career in research. Here, the panel members talked about the choices they had made and the hurdles they conquered to follow a path of science and research.

This interactive session at BHU was concluded with a panel discussion. Here students questioned the members on varied topics like career choices, mentor qualities, research in India versus abroad and opportunities in science in India. The students were encouraged to be better informed about their surroundings and emerging opportunities in science.

Finally, a vote of thanks was delivered by Professor Lohia. She acknowledged Prof Lakhotia's efforts in making this workshop a success and expressed her gratitude towards Members of the IA Selection Committee for their extraordinary support during the workshop. Similarly, she appreciated BHU students for their enthusiastic participation. Lastly, she acknowledged the IA staff for successfully organizing the workshop in Banaras.

The three days workshop allowed participants to

1. Enhance inherent characters of personal growth such as communicating confidently while engaging the audience.
2. Develop clarity in thought for succinctly conveying their science.
3. Understand the nuances towards developing a scientific problem.
4. Understand the importance of highlighting relevant information on a successful grant application.
5. Master the art of creating an interesting scientific presentation for a wide audience as was illustrated by the talks by two India Alliance Committee members.
6. Find out the objectives of the India Alliance and relevance of our work in India.
7. Interact with eminent scientists and learn to make the correct career choices from their own personal experiences.

Feedback on the workshop:

In order to obtain critical feedback which can improve future workshops, we circulated an online response form that was filled up by participants. The participants commended the well structured workshop and enjoyed learning through the interactive sessions. 73.3% participants found the pre-workshop assignment of writing a 1000 word proposal to be a new and invigorating experience. The participants felt involved throughout the sessions and 93% felt that they were motivated to learn while completing the various assignments and tasks in the workshop. The participants felt that this workshop not only helped them to obtain scientific guidance from mentors but also allowed them to better their presentation skills in public communication. 100% felt that they would recommend this workshop to their friends.

Recommendation and Future Scope:

The present workshop allowed us to introspect and recognize the need for young students to interact with established scientists. The participants also gained immensely from identifying their strengths and weakness regarding their modes of public communication.

Unlike the first workshop which was pan India, this one was held solely for BHU students. While the IA understands the importance of bringing together people with different experiences and cultures, it is also open to approaching student groups in different regions of India and empowering them with the skill sets necessary for effective communication in science.

There is a need to recruit participants from various fields in biomedicine like clinical, biophysical, chemical and mathematics so as to provide an interdisciplinary flavor to the workshop which will benefit all.

Annexure I

Professor Subhash Chandra Lakhotia

Department of Zoology

Banaras Hindu University, Varanasi

Prof Lakhotia's work is focused on developmental roles of the non-coding hsr-omega, heat shock and a few other novel genes in Drosophila using genetic, cell biological, molecular and recombinant DNA approaches. Roles of these genes in modulating apoptosis and neurodegeneration in Drosophila models of human diseases and cellular effects of certain Ayurvedic formulations using fly model are also being studied.

http://www.bhu.ac.in/zoology/employeeedisplay1.php?action=recorddisplay&emp_no=12393

Professor Rajiva Raman

Department of Zoology

Banaras Hindu University, Varanasi

Prof Raman works in areas of sex determination, epigenetic modification and human genetics, specifically: (1) Using lizard as a model to study gene-gene and gene-hormone interaction in the sex determination, (2) epigenetic modifications in genes during development and regulation of gene function in mouse, (3) population genetics of monogenic (thalassemia) and multifactorial disorders (male infertility, cleft lip & palate), (4) polymorphism in Homocysteine pathway genes and the influence of nutrition in disease susceptibility and (5) clinical cytogenetics.

http://www.bhu.ac.in/zoology/employeeedisplay1.php?action=recorddisplay&emp_no=12400

Professor Anuradha Lohia

CEO of The India Alliance

Professor of Biochemistry, Bose Institute, Kolkata

Prof Lohia works on cell cycle progression in Entamoeba histolytica. Her research involves identification of cell cycle gene networks and transcriptional analysis on high throughput microarray chips. Her laboratory had developed a method of gene 'knock-down' by targeting dsRNA expression to study the function of specific genes.

<http://bic.boseinst.ernet.in/anuradha/>

Professor Doreen Cantrell

Department of Cellular Immunology,

University of Dundee, United Kingdom

Professor Cantrell's research focus is T lymphocyte signal transduction. Specifically her studies involve analysis of the biochemistry and biology of Rho family GTPases and the serine kinase Protein Kinase D in T cells.

<http://www.lifesci.dundee.ac.uk/people/doreen-cantrell>

Professor Gaiti Hasan

Division of Neurobiology

National Centre for Biological Sciences, Bangalore

Professor Hasan studies Inositol 1,4,5,- triphosphate signaling in cellular and systemic physiology. Her group researches Calcium responses in Drosophila neurons.

<http://www.ncbs.res.in/gaiti>

Professor Claudio Sunkel

Director of the Institute of Molecular and Cell Biology, Porto, Portugal

Professor Sunkel's group is currently pursuing three main areas of research: organization of the mitotic chromosome, the role of microtubule associated proteins in mitotic spindle assembly and the spindle assembly checkpoint.

<http://www.ibmc.up.pt/index.php?id=45>

Professor Luca Pellegrini

Department of Biochemistry

University of Cambridge, United Kingdom.

Professor Pellegrini's group focuses on DNA double-strand break repair. His research involves deciphering atomic structures of DNA binding protein complexes.

<http://www.bio.cam.ac.uk/~lp212/>

Professor Sanjeev Galande

Laboratory of Chromatin Biology and Epigenetics,

Indian Institute of Science Education and Research Pune, Pune.

Professor Galande's research focus on chromatin assembly and architecture. Recent studies from his laboratory have elucidated the role of chromatin assembly in immunological signaling pathways.

<http://www.iiserpune.ac.in/~sanjeev/index.html>

Annexure II
Science & Communication Workshop
20 – 23 February 2011, Varanasi
AGENDA

| Sunday, 20 February 2011 | |
|-----------------------------------------------------------------|-----------------------------------------------------------------------|
| Regal Hall, The Hotel Hindusthan International, Varanasi | |
| 8:45am | Registration |
| 9:00am | Welcome & Briefing <i>Dr Megha, India Alliance</i> |
| 9:30am | Communication Workshop Combined Session, <i>Accord Consultants</i> |
| 10:45am | BREAK |
| 11:00am | Batch Sessions, <i>Accord Consultants</i> |
| 12:00pm | BREAK |
| 12:15am | Batch Sessions, <i>Accord Consultants</i> |
| 1:30pm | LUNCH |
| 2:15pm | Combined Session, <i>Accord Consultants</i> |
| 4:15pm | BREAK |
| 4:30pm | Combined Session, <i>Accord Consultants</i> |
| 5:30pm | BREAK |
| 5:30pm | Batch Sessions, <i>Accord Consultants</i> |
| 6:30pm | Conclusion |

| Monday, 21 February 2011 | |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Regal Hall, The Hotel Hindusthan International, Varanasi | |
| 9:30am | Communication Workshop Combined Session, <i>Accord Consultants</i> |
| 10:15am | BREAK |
| 11:00am | Batch Sessions, <i>Accord Consultants</i> |
| 12:30pm | Concluding Session, <i>Accord Consultants</i> |
| 1:15-2:45pm | <i>Lunch: Dos & Don'ts of Dining etiquette</i> Combined Session, <i>Accord Consultants</i> |

| | |
|-----------------------------------------------------------------|-------------------------------------------------------|
| Tuesday, 22 February 2011 | |
| Regal Hall, The Hotel Hindusthan International, Varanasi | |
| 4:00pm | Assembly & Group Photo <i>Dr Megha</i> |
| 4:20pm | Group Discussions with Mentors |
| 5:20pm | BREAK |
| 5:45pm | <i>Elements of Grantsmanship, India Alliance Team</i> |
| 7:00pm | CONCLUSION |

| | |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wednesday, 23 February 2011 | |
| Faculty Hall, Banaras Hindu University, Varanasi | |
| 9:00am | Inauguration <ul style="list-style-type: none"> - Kulgeet - Introduction, Professor Subhash Lakhotia, BHU - Welcome, Professor R C Yadav, BHU - Remarks, Professor B D Singh, BHU - Remarks, Professor Anuradha Lohia, India Alliance |
| 9:30am | "Maintaining genomic stability during cell division" <i>Professor Claudio Sunkel</i> IBMC-Instituto de Biologia Molecular e Celular, Portugal |
| 10:15am | "Signaling meets chromatin: Role of chromatin organizer SATB1 in regulation of Wnt signalling" <i>Professor Sanjeev Galande</i> Indian Institute of Science Education & Research, Pune |
| 11:00am | Tea Break |
| 11:20am | "Science Research in Universities" <i>Professor Subhash Lakhotia</i> Banaras Hindu University, Varanasi |
| 11:40am | "Opportunities from the India Alliance" <i>Professor Anuradha Lohia</i> CEO, The India Alliance, Hyderabad |
| 12:00pm | "Learning from Choices" Panel Discussion Members of the India Alliance Selection Committee |
| 1:00pm | Vote of Thanks, <i>Professor Rajiva Raman</i> |
| 1:05-2:30pm | LUNCH |