



# NIHVFC Newsletter

May—June 2005

*Contributing to global science development by building careers*

## Career Fair Highlights Opportunities and Services for Visiting Fellows

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By Dr. Donna Vogel and Dr. Tirumalai Kamala

On May 17, the Magnuson Clinical Center Atrium and Visitor Center hummed with conversation and activity as hundreds of scientists from around NIH and around the world enjoyed the second annual Visiting Fellows' Career Fair. Posters and tables displayed information and mementos from 36 exhibitors.

The Fair this year was sponsored by Fogarty International Center (FIC), the National Institute of Environmental Health Sciences

(NIEHS) and the NIH Fellows Committee (FELCOM). Dr. Debbie Swope and eleven fellows from NIEHS flew up from North Carolina to take part in the Fair. Dr. Sharon Hrynkow, Acting Director of FIC, and Dr. Joan Schwartz, Acting Deputy Director of the NIH Office of Intramural Training and Education, gave welcoming remarks. They each emphasized the importance of the scientific interchange accomplished by the Visiting Fellows' program. Over half of the train-

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## Life Sciences Research in India: Today's Status and Tomorrow's Prospects

By Dr. Hwei Ling Ong

India is rapidly expanding its research capability and was recently listed as one of the 24 countries that are scientifically proficient (using eight criteria established by the Rand Corporation). Professor D. Balasubramanian, currently the Director of Research at the L.V. Prasad Eye Institute (Hyderabad, India), was recently at NIH to talk about life science research in India. This special seminar was jointly sponsored by the Fogarty International Center and the National

Eye Institute. Prof. Balasubramanian started off his talk with a little bit of history, expanding on the tradition of biological research and training in India. India has a good historical tradition of biological research and training for the past 50 years, especially in the fields of classical research such as botany, zoology, biochemistry and biophysics. Many landmark discoveries have

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## Career Fair (continued from Page 1)

ees at NIH are foreign citizens, who bring their international research perspectives and potential for ongoing worldwide collaboration while benefiting from their training experience here at NIH.

The purpose of the Fair was to inform Visiting Fellows about recent developments in the scientific communities of their home countries. At the exhibits, Visiting Fellows and their colleagues learned about jobs and grants in countries across Europe, Asia and the Americas from representatives of embassies and funding organizations. Over light refreshments, exhibitors from other lands enjoyed meeting the fellows from their countries and each other. Scientific organizations and NIH offices informed Visiting Fellows about useful services available to them as they plan for life after NIH. Many participants were surprised to learn about these sources of assistance with their training and transitions.

The NIH Visiting Fellows Committee has asked for feedback by all involved, and these comments will be shared and used to plan future events. We have heard from both exhibitors

and visitors that the Fair was beneficial and that they would like to see it continue. The exhibitors commended NIH for making the effort to well-serve both the NIH Visiting Fellows and their home countries. Some of their suggestions to improve the next Career Fair include organizing a brief half hour meet and greet between the organizers and exhibitors before the start of the Fair, and displaying of a large banner or poster at the Fair entrances for the benefit of passers-by. Additionally, several Visiting Fellows felt that the Fair would benefit from the participation of more countries and also more representation from private companies particularly biotechnology and allied industries. We hope these individuals will become active in the VFC, and encourage their embassy representatives to participate next year.

If you wish to share your comments about the Fair or were unable to attend the Career Fair but would like contact information for a country or other participating exhibitor, please contact the Chair of the Executive Committee, Dr. Tirumalai Kamala ([tkamala@niaid.nih.gov](mailto:tkamala@niaid.nih.gov)).



*Dr. Sharon Hyrnkow, Acting Director of FIC.*



*Dr. Joan Schwartz, Acting Director of OITE.*



*A rapt audience during the opening ceremony*



*Two visitors enjoying the light refreshments at the fair.*

*Visiting Fellows and colleagues perusing the information available at the exhibitors' tables.*



## Life Sciences Research in India (continued from Page 1)

come out of Indian research, such as the development of callus/anther culture, protoplast fusion, and the discovery and description of *Vibrio cholera* and its toxin. Through scientific research, India has made great strides in improving the quality of life of its population. Among its achievements are the eradication of smallpox and goitre, and increasing life expectancy from 40-50 to 60+ years in just one generation. India also increased its food production, for example, by growing high-yielding cereal varieties (green revolution) and by becoming a world leader in milk production (white revolution).

Post 1970's, India's scientific and research community underwent a revolution of its own, with the entry and rise of cutting edge science in areas such as molecular biology, genetic engineering and bioinformatics. New institutes and universities were built to meet the demand for such expertise. Furthermore, Indian scientists also had the opportunity to undergo training overseas in countries under scientific exchange/training programs like the Fulbright Fellowships (USA), the Royal Society International Fellowships (UK), DAAD (German Academic Exchange Service) and Humboldt Plan (Germany). At NIH alone, there are 201 visiting post-doctoral fellows and 49 visiting scientists from India (as on April 2005). The achievements of Indian science can be measured by the quality and quantity of its publications in a wide range of journals, including Nature, Science and Cell. For the period 1994 to 2004, India was ranked 13 out of 146 countries for the number of publications. For that same period, India ranked 21 for the number of papers cited. However, the number of citations per paper was approximately 3, giving India a ranking of only 117 out of 146 countries.

In the 1990s, another change was occurring. Previously, India's scientific and research community was dominated by the academia and the research institutes. At the close of the century, India's biotechnology sector became more prominent in the community. As of today, there are more than 200 biotechnology firms. For 2002 to 2003, 70% of the biotechnology firms were in the pharmaceutical industry, such as Shantha Biotech, Bangalore Genei, Bharat Biotech, BioCon, Torrent, Dr Reddys, Ranbaxy, Eli Lilly and Panacea Biotech and others. The biotechnology industry has been ac-

tively recruiting scientists both from local talent and also internationally. Interactions between the academia, research institutes and industry have risen dramatically and are based on the American model, whereby the academia "incubate" budding companies and help to bring out products for manufacture. Presently, these multi-center cooperative efforts can be seen in the development of natural products as drug candidates, understanding rice genomics and combating tuberculosis.

To maintain its explosive pace in the global scientific community, India has been increasing its expenditure for research and development. For the 2004 – 2005 alone, India has set a budget of \$4365 million (US dollars), with the bulk of the budget going to space, defense, health and atomic research sectors. However, less than 20% of the budget has been set aside for extramural research. This presents a dilemma for Indian scientists who are currently training abroad, who depend on research grants to establish their foothold in Indian science. The traditional sources for research grants are typically government sources, such as the Department of Biotechnology, the Department of Science and Technology, and the Center for Mathematical Modeling and Computer Simulation. A typical research grant is between 2 to 8 million Rupees for 3 years, and covers expenses related to scientific equipment, consumables, salaries, travel, and administrative costs. There is little funding from private sources, such as in the industry. At the international stage, although Indian scientists have applied for and received grants from prestigious sources such as the Wellcome Trust, Rockefeller Center and the NIH, the number of beneficiaries are few because these grants are extremely competitive considering the large number of international applicants. Nonetheless, Indian scientists have done fairly well themselves, with 15 currently receiving 3 recently approved to receive grants from the Wellcome Trust. From the NIH Alumni, a total of 90 Indian scientists have received funding from NIH. Nonetheless, as acknowledged by Prof. Balasubramanian, more needs to be done to stop the migration of scientific talent from India.

## Life Sciences Research in India

Prof. Balasubramanian also touched on gender issues in Indian science. According to Prof. Balasubramanian, there is no glass ceiling and both sexes receive equal pay and funding in India. However, there are some sociology issues that still persist in the Indian scientific culture. In certain institutes, for example, couples may not be allowed to work in the same laboratory or department. Nonetheless, the Science Academies of India and the Scientific Advisory Committee to the Cabinet are actively working to address these issues and have floated the idea of conducting special action programs to promote the advancement of women scientists in India.

Prof. Balasubramanian also took the opportunity to espouse future developments in Indian science. From 2005 – 2006, a new foundation known as the National Science and Engineering Foundation, plus two new research institutes will be created. The academia, research institutes and industry are ramping up the recruitment of returning Indian scientists to meet the demand for scientific talent at home. Furthermore, a new Indo-US initiative is set to increase scientific collaboration in vision research between India and USA.

Additionally, Dr. Sheldon Miller, the Scientific Director at NEI, has proposed the creation of an NIH Overseas Scholar's Program for postdoctoral research training. A fundamentally important component of this program is the combined stimulation of career opportunities in India and the availability of NIH research support opportunities for returning Scholars (e.g. via the Fogarty Global Research Initiatives Program or GRIP; see <http://www.fic.nih.gov/programs/GRIP.html>). The goal of this program is to identify talented Indian scientists, provide them with training at NIH, and once this training is completed, help facilitate their return to academic and scientific jobs in India. The GRIP program and other Fogarty sponsored award programs are intended to support the return of these NIH trained investigators to help them build the research infrastructure in their home country.

India has a tremendous opportunity to become a world-class

producer of scientific knowledge and products. However, pertinent issues regarding funding and employment opportunities need to be addressed before India can reach its maximum potential.

### Additional sources of information:

- The website for the L.V. Prasad Eye Institute can be accessed at [www.lvpei.org](http://www.lvpei.org).
- For more news on the biotechnology sector in India, the reader is directed to a special issue (Vol. 8, Issue 15) of the Asia Pacific Biotech News (published on 15 Sept. 2004).
- For more news on how India is addressing the gender issues in Indian science, the reader is directed to the following article: Bal, V. (2005) *Current Science* 88(6): 872 – 878.
- A recent essay on the current status of Indian science was recently published in Science: Mashelkar, R.A. (2005) "India's R&D: Reaching for the Top" *Science* 307: 1415 – 1417.

For those wishing to learn more about the L.V. Prasad Eye Institute, Professor Balasubramanian can be contacted at [dbala@lvpei.org](mailto:dbala@lvpei.org).

**The "In Profile" segment will return  
in the next issue of the NIHVFC  
Newsletter.**

## Do you know...? The Fellows Editorial Board

### What is the Fellows Editorial Board?

The Fellows Editorial Board (FEB) was created in the Spring of 2002 to fulfill the scientific editorial demands of post-doctoral and clinical fellows in the NCI Center for Cancer Research (CCR). FEB has recently expanded to include fellows from the entire NIH. The objectives of FEB are twofold: to provide NIH fellows with an editing service for their scientific documents, and to provide training and editorial experience to Board members. Editorial Board members confidentially edit manuscripts, grant proposals, abstracts, and other scientific documents for grammar, structure, and style, but do not comment on scientific merit.

### Who can join FEB?

FEB is an all-volunteer organization composed of post-doctoral and clinical fellows, professional science writers and editors, and scientists trained in editing. Editorial experience is not required; FEB is here to train you!

### How does the editorial process work?

The entire editorial process is confidential. The Senior Editor solicits three to four FEB members to serve as primary editors for each submission. All Board members review the submission and during the weekly meeting (which is video-conferenced to Frederick, Baltimore, and Research Triangle Park), the primary editors lead the discussion of that manuscript. The editors' comments are then compiled into an electronic report and a hard copy, which are returned to the author within 10 business days.

### Who can submit documents to FEB?

All NIH fellows and investigators can submit their scientific documents to FEB.

### What are FEB's accomplishments?

FEB has edited over 125 documents for fellows. FEB-edited manuscripts have been published in high impact, peer-reviewed journals including *Molecular and Cellular Biology*, *Cancer Research*, *Oncogene*, *The Journal of Biological Chemistry*, *Molecular Cell*, and *Neuroscience Research*. FEB has also organized three workshops in its ***Become Your Own Best Editor*** series to help fellows improve their scientific writing. Currently, FEB is planning a seminar on Scientific Editing as a Career.

### Where can I find more information about FEB?

Check out the FEB website (<http://ccr.cancer.gov/careers/feb/>) for submission instructions and membership applications or email us at [ncieditors@mail.nih.gov](mailto:ncieditors@mail.nih.gov).

## Calling for Contributions to the "In Profile" Segment

We are interested in hearing from Visiting Fellows and Visiting Scientists who have completed their training at NIH, and have either returned home to their home countries or have started a new job outside NIH.

If you would like to contribute or knows someone else who does, please send an email to the Newsletter Editor at [ongh@mail.nih.gov](mailto:ongh@mail.nih.gov)

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The NIHVFC is a self-governing body serving the interests of visiting fellows in their transition to life after the NIH by working to create opportunities for visiting fellows to maintain continuity in their research upon returning to their home countries.

**We are on the Web!**

**<http://felcom.nih.gov/NIHVFC>**

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