

REPORT

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad

1. Name and designation of ICMR-IF : Dr. Amal Kumar Santra
Professor, Center for Liver Research,
I.P.G.M.E & R; Kolkata
2. Address : Center for Liver Research,
School of Digestive & Liver Diseases
I.P.G.M.E & R;
244, Acharya J.C. Bose Road,
Kolkata 700020; West Bengal
3. Frontline area of research in which training/research was carried out : Cell Biology
(Live cell imaging and Ca⁺⁺ Signaling using confocal microscopy)
4. Name and address of Professor and host institute : Dr. James L Boyer
Ensign Professor of Medicine
Emeritus Director, Liver Center;
School of Medicine,
Yale University
333, Cedar Street, 1080 LMP
New Haven, CT 06520-8019
USA
5. Duration of fellowship : 12 days from 10th to 21st October 2011
6. Highlights of work conducted :
 - i) Technique/expertise acquired : Live cell imaging, Ca⁺⁺ signaling and intracellular localization of protein by confocal microscopy. Preparation of acinar cell preparation and culture from pancreas. Some basic techniques on si RNA related gene knockdown.
 - ii) Research results, including any papers, prepared/submitted for publication : This short period of training will help the ICMR-IF to undertake New research areas in near future

- iii) Proposed utilization of the experience in India: These advanced techniques will help the ICMR-IF in understanding the molecular as well as cellular mechanism of liver cell injury and fibrosis research programme at Center for Liver Research at IPGME&R, Kolkata in near future..

ICMR Sanction No.: INDO/FRC/452 (S-12)/2011-IHD

Prof. Amal Kr. Santra, ICMR-IF
Professor, Center for Liver Research
Institute of Post Graduate Medical
Education & Research

Detailed tour reports on foreign visits should invariably include the following:

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| 1 | Name & Designation of the Scientist | Dr. Amal Kumar Santra Professor, Center for Liver Research, I.P.G.M.E & R.; Kolkata 700020 |
| 2 | Name of the Institute/Centre | Institute of Post Graduate Medical Education & Research (IPGME&R) |
| 3 | Date of visit | 10 th October 2011 |
| 4 | Period of visit | 12 days |
| 5 | Place of visit | Liver Center, School of Medicine; Yale University. New Haven, CT 06520-8019 |
| 6 | Purpose of the visit | To acquaint real time live cell imaging and Ca ⁺⁺ signaling in live cell using confocal microscopy. |
| 7 | Source of sponsorship of the visit | ICMR International Fellowship for Senior Bio-medical Scientist |
| 8 | What is the scientist's contribution, relevance to ICMR/DHR, India? | Dr. Santra is actively involved in research activities related to Arsenic and anti-tubercular drugs induced liver injury with the financial assistance of ICMR for more than 15 years. The primary objective of Dr. Santra's lab at IPGME&R is to understand the molecular mechanism of liver cell injury; fibrogenesis and its reversal. Dr Santra is the PI and Co-PI of many ICMR funded research project in the last 15 years |
| 9 | Benefits to the Institute/Centre from the skills acquired by the scientists during the said visit. | The Center for Liver Research at IPGME&R, Kolkata is involved in basic and clinical research related to Liver diseases. The short term training of Dr. Santra helps to enrich future research activities mainly in understanding the cellular and molecular mechanisms and signaling pathways of liver cell injury, hepatic |

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| | | stellate cell activation and subsequent development of fibrosis. Understanding of these pathways are essential to develop new therapeutic options in the liver diseases. |
| 10 | How the skills acquired by the scientist will be utilized? | The skill acquire by Dr. Santra in confocal microscopy will be utilize to train the Ph.D students in their research activities in this institute. |
| 11 | Whether the Director/OIC satisfied with the tour report. | The head of School of Digestive & Liver Diseases as well as the Director, IPGME&R are satisfied with this tour report. |

Prof. Amal Kumar Santra, ICMR-IF
Professor, Center for Liver Research,
I.P.G.M.E & R.; Kolkata 700020

Dated: 2nd November 2011

To Whom It may Concern

Dr. Amal Kumar Santra, Professor, Center for Liver Disease of this institute has awarded the ICMR-IF for Senior Bio-medical scientist for the year 2011-12. With this fellowship Dr. Santra visited Liver Center, School of Medicine, Yale University, New Haven, USA from 10th to 21st October 2011 to acquaint the real time liver cell imaging, Ca⁺⁺ signaling in live cell using confocal microscopy under the mentorship of Prof. James L. Boyer, Ensign Professor and Emeritus Director of the above center. We are fully satisfied with the tour report of Professor Santra and hope this short exposure of Professor Santra on procedures that are described above will enrich the research activities of our institute.

Prof. G.K. Dhali
Professor & Head
School of Digestive & Liver Diseases
I.P.G.M.E & R

Prof. Pradip Kumar Mitra
Director
I.P.G.M.E & R

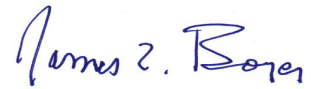
REPORT OF HOST INSTITUTE

1. Name of Professor (under whom training was carried out) : James L Boyer, M.D.
Ensign Professor of Medicine
Emeritus Director, Liver Center
2. Name and address of host institute : School of Medicine,
Yale University
333, Cedar Street, 1080 LMP
P.O. Box 208019
New Haven, CT 06520-8019
USA
3. Duration of fellowship : 12 days from 10th to 21st October 2011
4. Brief highlights of the achievements : During the brief stay at Yale Liver Center, Dr. Amal Kr. Santra, Professor and Divisional Chief, Center for Liver Research, has acquainted himself with the details of confocal microscopy techniques mainly live cell imaging, Ca⁺⁺ signaling, intracellular localization of proteins, and studies related to cellular death. All these techniques will help the ICMR-IF in his future research activities in understanding the mechanisms of liver cell injury. Apart from these confocal techniques, he has also learned techniques of isolation of pancreatic acinar cell preparation, studies related with gene knockdown using siRNA. These studies will also help the ICMR-IF to undertake new research program in near future.
5. Your assessment of the ICMR-IF :

We were very pleased to have Dr. Santra as a visiting scientist here at the Yale Liver Center for the past 12 days. During this period Dr. Santra demonstrated a keen desire to learn as much as possible about the procedures that are described above and are well established in our Center. My contacts with Dr. Santra assure me of his dedication, his scientific curiosity and his wish to improve his technical abilities for the betterment of his Center for Liver Research in Kolkata.

6. Any other comments

We would be pleased to welcome Dr. Santra or his colleagues to the Liver Center in the future should they wish to return for further assistance or advice. :

A handwritten signature in blue ink that reads "James L. Boyer". The signature is written in a cursive style with a large initial 'J' and 'B'.

James L Boyer, M.D.
Ensign Professor of Medicine
Emeritus Director, Liver Center
School of Medicine,
Yale University, New Haven