Protocols offered & Instructors

A. HIV Protocols

1. Measuring CD4 T cell levels by Flow Cytometry

**Instructor**
V. Ravi, MD  
NIMHANS  
Bangalore, Karnataka, India

**Assistance:**
Asokan Mangaiarkarasi  
JNCASR  
Bangalore, Karnataka, India

**Instructor:**
U. Ranga, PhD  
JNCASR  
Bangalore, Karnataka, India

**Assistance:**
Imtiaz Nisar Lone  
JNCASR  
Bangalore, Karnataka, India

2. Real-Time HIV PCR

**Instructor:**
Debashis Mitra, PhD  
National Centre for Cell Science  
Pune, Maharashtra, India

**Assistance:**
Prashanta Kumar Dash  
JNCASR  
Bangalore, Karnataka, India

**Instructor:**
U. Ranga, PhD  
JNCASR  
Bangalore, Karnataka, India

**Assistance:**
Imtiaz Nisar Lone  
JNCASR  
Bangalore, Karnataka, India

3. Use of reporter cell lines

**Instructor:**
Ramarao Amar, PhD  
Emory University  
Atlanta, GA USA

**Instructor:**
Dr. Raj Shankarappa, PhD  
University of Pittsburgh  
Pittsburgh, PA USA

**Assistance:**
Krishnamurthy Kumar Anand  
JNCASR  
Bangalore, Karnataka, India

**Instructor:**
Debashis Mitra, PhD  
National Centre for Cell Science  
Pune, Maharashtra, India

**Instructor:**
B. Shacklett, PhD  
University of California Davis  
Davis, CA USA

**Assistance:**
Prashanta Kumar Dash  
JNCASR  
Bangalore, Karnataka, India

**Instructor:**
Ramarao Amar, PhD  
Emory University  
Atlanta, GA USA

**Assistance:**
Krishnamurthy Kumar Anand  
JNCASR  
Bangalore, Karnataka, India

4. Elispot and ICS Assay

**Instructor:**
Dr. Raj Shankarappa, PhD  
University of Pittsburgh  
Pittsburgh, PA USA

**Instructor:**
Ramarao Amar, PhD  
Emory University  
Atlanta, GA USA

**Instructor:**
B. Shacklett, PhD  
University of California Davis  
Davis, CA USA

**Assistance:**
Krishnamurthy Kumar Anand  
JNCASR  
Bangalore, Karnataka, India

**Assistance:**
N. Siddappa, PhD  
Harvard University  
Boston, MA, USA

5. Heteroduplex Mobility shift Assay

**Instructor:**
Dr. Raj Shankarappa, PhD  
University of Pittsburgh  
Pittsburgh, PA USA

**Instructor:**
Dr. Raj Shankarappa, PhD  
University of Pittsburgh  
Pittsburgh, PA USA

**Instructor:**
Ramarao Amar, PhD  
Emory University  
Atlanta, GA USA

**Instructor:**
B. Shacklett, PhD  
University of California Davis  
Davis, CA USA

**Instructor:**
Dr. Raj Shankarappa, PhD  
University of Pittsburgh  
Pittsburgh, PA USA
B. TB Protocols

1. MIRU-VNTR typing

**Instructor:**
Sayera Banu, MBBS, PhD
ICDDR,B
Dhaka, Bangladesh

**Assistance by:**
Khaja Mafiz Uddin
ICDDR,B
Dhaka, Bangladesh

2. Spoligotyping

**Instructor:**
Sujatha Narayanan, PhD
TRC
Chennai, Tamilnadu, India

**Assistance:**
Sivakumar Shanmugam
TRC
Chennai, Tamilnadu, India

**Assistance:**
Srinivasan Govindaraju
TRC
Chennai, Tamilnadu, India

**Assistance:**
Dinakar Sambandan
Albert Einstein College of Medicine
Bronx, NY USA

3. Phage-based assays for detection of TB (includes Luciferase reporter phage assay and Blue phage assays)

**Instructor**
Vanaja Kumar, PhD
Tuberculosis Research Centre
Chennai, Tamilnadu, India

**Assistance:**
N. S. Gomathi
TRC
Chennai, Tamilnadu, India

**Assistance:**
Azger Dustackeer
TRC
Chennai, Tamilnadu, India

**Instructor**
Jordan Kriakov, MD
Albert Einstein College of Medicine
Bronx, NY, USA

**Assistance:**
S. Balaji
TRC
Chennai, Tamilnadu, India

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**Please Note:** There will be 3 to 4 tracks running simultaneously. Each track is color coded for simplicity as indicated below. The participants are requested to follow the time line provided in order to complete all the training.

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Practical Session</th>
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<tbody>
<tr>
<td>Measuring CD4 T cell levels by Flow Cytometry</td>
<td>Lecture Hall</td>
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<tr>
<td>Real Time HIV PCR</td>
<td>Lecture Hall</td>
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<tr>
<td>Use of Reporter Cell lines</td>
<td>Lecture Hall</td>
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<tr>
<td>Elispot and ICS Assay</td>
<td>Lecture Hall</td>
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<tr>
<td>Heteroduplex Mobility shift Assay</td>
<td>Lecture Hall</td>
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<tr>
<td>TB Protocols</td>
<td>Lecture Hall</td>
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</tbody>
</table>
### Sunday July 8th

<table>
<thead>
<tr>
<th>Time</th>
<th>Measuring CD4 (FACS Laboratory)</th>
<th>Real Time HIV PCR (Clean PCR room)</th>
<th>Use of Reporter Cell lines (BSL Laboratory)</th>
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</thead>
<tbody>
<tr>
<td>9:30-10:00</td>
<td>Introduction (Lecture Hall)</td>
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<td>10:00-10:30</td>
<td>Practical session on CD4 count</td>
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<td>Introduction Plate cells</td>
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<td>7:00-7:30</td>
<td>Analysis of real-time PCR results</td>
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<td>7:30-8:00</td>
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<tr>
<td>Time</td>
<td>ELISPOT and ICS (BSL Laboratory)</td>
<td>HMA (Molecular Biology Lab)</td>
<td>Use of Reporter Cell lines (BSL Laboratory)</td>
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<td>10:00-10:30</td>
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<td>Incubation with antivirals and initiation of infection</td>
<td>Introduction to Phage assays Dr. V. Kumar Dr. J. Kriakov</td>
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<td>PBMC preparation (could start earlier depending on reporter virus experiment)</td>
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<td>3:00-3:30</td>
<td>Sample Preparation, DNA extraction</td>
<td>Washing (participants need not take part)</td>
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<td>Stimulation</td>
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<td>Time</td>
<td>ELISPOT and ICS (BSL Laboratory)</td>
<td>HMA (Molecular Biology Laboratory)</td>
<td>TB (Molecular Biology Laboratory)</td>
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<td>Agarose Gels</td>
<td>Introduction to MIRU-VNTR typing (lecture Hall)</td>
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<td>10:00-10:30</td>
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<td>Pour PAGE Gels</td>
<td>Dr. Banu</td>
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<td>10:30-11:00</td>
<td>ELISPOT: Development</td>
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<td>PCR for MIRU-VNTR Typing</td>
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<td>11:00-11:30</td>
<td>1</td>
<td>ICS: Staining</td>
<td>Spoligotyping Demonstration (Setting up PCR)</td>
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<td>Dr. Narayanan</td>
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<td>Set up HMA, Load, Electrophorese O/N</td>
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<td>ELISPOT: Development</td>
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<td>ICS:</td>
<td>Electrophoresis for MIRU-VNTR typing</td>
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<td>5:30-6:00</td>
<td>Mini Symposium – I</td>
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Mini-Symposium I
Challenges in TB Diagnosis: Implications for HIV-infected patients and drug-resistance
5:30PM to 6:30PM

Chairs
Soumya Swaminathan, MD
Tuberculosis Research Centre
Chennai, India

Sarita Shah, MD
Albert Einstein College of Medicine
Bronx, NY USA

5:30PM - 5:45PM
‘Global epidemiology of TB in HIV-infected persons: Importance of TB/HIV integration and TB screening in HIV care and treatment settings’
Soumya Swaminathan, MD
Deputy Director
Tuberculosis Research Centre
Chennai, India

5:45PM – 6:00PM
‘Challenges in TB diagnosis in HIV-infected persons: Limitations of current diagnostic tools and algorithms’
Sarita Shah, MD
Assistant Professor
Divisions of Internal Medicine and Infectious Diseases
Albert Einstein College of Medicine
Bronx, NY USA

6:00PM to 6:15PM
‘New WHO guidelines for diagnosis of smear-negative and extra-pulmonary TB in resource-limited settings’
Fraser Wares, MD
Office of the WHO Representative to India
New Delhi - 110001 India

6:15PM to 6:30PM
‘New diagnostics for TB and drug resistance’
Neel Gandhi, MD
Divisions of Internal Medicine and Infectious Diseases
Albert Einstein College of Medicine
Bronx, NY USA
<table>
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<tr>
<th>Time</th>
<th>ELISPOT and ICS</th>
<th>HMA</th>
<th>Use of Reporter Cell lines</th>
<th>TB</th>
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<tr>
<td>9:30-10:00</td>
<td>ELISPOT: Acquire</td>
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<td>Luciferase reporter assay Readings/Phage</td>
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<td>Titre calculation/Phage-biotics</td>
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<td>Dr. V. Kumar</td>
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<td>Analysis of MIRU Results</td>
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<td>Dr. S. Banu</td>
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<td>11:30-12:00</td>
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<td>Stain Gel, Analyze and Interpret HMA</td>
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<td>Early start (1:30 PM) Spoligotyping</td>
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<td>Demonstration (Dr. S. Narayanan)</td>
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<td>5:30-7:00</td>
<td>Mini Symposium-II</td>
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<td>7:15-7:45</td>
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<td>Visualize β-gal stain (continue the next day)</td>
<td>Sploligotyping Demonstration (Dr. S. Narayanan)</td>
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</table>
Mini-symposium II
A Symposium to Highlight the AIDS Research of Selected Trainees
11th July 2007
5:30PM – 7:00PM

Chairs
Vasanthapuram Ravi, MD
National Institute of Mental Health and Neurosciences
Bangalore, Karnataka, India
Anita Shet, MBBS
St. John’s Medical College
Bangalore, Karnataka, India

Session I: HIV Pathogenesis and Genetic basis of HIV infection

5:30PM – 5:40PM ‘Env mediated CCR5 down-modulation affects cell activation survival and CTL function’
Shweta Dubey, PhD
International Centre for Genetic Engineering and Biotechnology
New Delhi, India

5:40PM – 5:50PM ‘Studies on the role of heat shock proteins in HIV-1 pathogenesis’
Pratima Rawat
National Centre for Cell Science
Pune, Maharashtra, India

5:50PM – 6:00PM ‘Genetic Correlates of HIV-1 infection in the Indian Population’
Gaurav Sharma
All India Institute of Medical Sciences
New Delhi, India

Session II: NeuroAIDS and Drug abuse

6:00PM – 6:10PM ‘Neuronal apoptosis by HIV-1 Tat protein derived from clades B and C’
Mamata Mishra
National Brain Research Center
Manesar, Haryana, India

6:10PM – 6:20PM ‘Enhanced viral replication in cerebral compartment & accelerated onset of AIDS in SIV/SHIV infected chronic morphine exposed rhesus macaques’
Rakesh Kumar, PhD
Kumaun University
Pithoragarh, U.A., India
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speakers</th>
</tr>
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</table>
| 6:20PM – 6:30PM | ‘Prevalence of HIV and HCV infections in Injecting drug users’                 | Anuradha Dutta, MD
T.N. Medical College
Mumbai, India |
| 6:30PM – 6:40PM | ‘Surveillance of HIV-1 Drug resistance in HAART treated patients and in the general population’ | John Rusine
Ministere de la Sante
Laboratoire National de Reference
Kigali-RWANDA |
| 6:40PM – 6:50PM | ‘A Molecular Epidemiological Study of HIV-2 infections from Karnataka’          | Susmita Gurjar R.
National Institute of Mental Health and Neurosciences
Bangalore, Karnataka, India |
| 6:50PM – 7:00PM | ‘Efficacy and safety evaluation of a Siddha medicine HIVS-2004 for HIV/AIDS’   | Asokan Mangaiarkarasi
Jawaharlal Nehru Centre for Advanced Scientific Research
Bangalore, Karnataka, India |

**Session III: Population studies of HIV-1 and HIV-2**

**Session IV: Drug resistant TB**

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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speakers</th>
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| 7:00PM – 7:10PM | ‘Drug resistant tuberculosis in a tertiary referral teaching hospital of Bangladesh’ | Arman Hossain, MBBS
International Centre for Diarrheal Diseases Research
Dhaka, Bangladesh |
**Round-Table Workshop**  
Creating effective partnerships: Role of epidemiological, behavioral and ethical aspects on AIDS research

**Session I: 9:30am – 1:10pm**

**Chairs**

Laurie Bauman, PhD  
Albert Einstein College of Medicine  
Bronx, New York, USA

Ruth Macklin, PhD  
Albert Einstein College of Medicine  
Bronx, New York, USA

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
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</table>
| 9:35 – 10:05 am | Epidemiological Study Design                                         | Ellie Schoenbaum, MD  
Albert Einstein College of Medicine  
Bronx, New York, USA |
| 10:05 – 10:15 am | Q & A                                                                |                                                        |
| 10:15 – 10:45 am | Ethical issues in epidemiological research and surveillance       | Ruth Macklin, PhD  
Albert Einstein College of Medicine  
Bronx, New York, USA |
| 10:45 – 10:55 am | Q & A                                                                |                                                        |
| 10:55 – 11:10 am | Coffee Break                                                        |                                                        |
| 11:10 – 11:40 pm | Behavioral Study Design                                              | Laurie Bauman, PhD  
Albert Einstein College of Medicine  
Bronx, New York, USA |
| 11:40 – 11:50 am | Q & A                                                                |                                                        |
| 11:50 – 12:20 pm | Clinical Trials                                                      | Julia Arnsten, MD  
Albert Einstein College of Medicine  
Bronx, New York, USA |
| 12:20 – 12:30 pm | Q & A                                                                |                                                        |
| 12:30 – 1:00 pm | Ethical issues in behavioral studies and clinical trials            | Ruth Macklin, PhD  
Albert Einstein College of Medicine  
Bronx, New York, USA |
1:00 - 1:10 pm  Q & A

1:10 – 2:10 pm  Lunch Break

Session II: 2:15pm – 5:00pm

Chairs
Rosy Chhabra, PsyD
Albert Einstein College of Medicine
Bronx, New York, USA

Julia Arnsten, MD
Albert Einstein College of Medicine
Bronx, New York, USA

2:20 – 3:50 pm  Concurrent Workgroups

Group A  What’s love got to do with it?
Preventive interventions for youth

Moderators
Laurie Bauman, PhD
Albert Einstein College of Medicine
Bronx, New York, USA

Rosy Chhabra, PsyD
Albert Einstein College of Medicine
Bronx, New York, USA

Group B  Interventions to prevent sexual & drug use related transmission (Condoms, microbicides, circumcision and needle exchange)

Moderators
Ellie Schoenbaum, MD
Albert Einstein College of Medicine
Bronx, New York, USA

Jayanthi Shastri, MD
T.N. Medical College & B.Y.L. Nair Hospital
Mumbai, India

Group C  Adherence with Antiretroviral Therapies

Moderators
Julia Arnsten, MD
Albert Einstein College of Medicine
Bronx, New York, USA

Group D  HIV testing, stigma & ethical Issues

Moderators
Ruth Macklin, PhD
Albert Einstein College of Medicine
Group E  
Behavioral interventions to prevent HIV among vulnerable groups (Interventions for Women; Reaching migratory workers etc.)

**Moderators**

Sonia Suchday, PhD  
Ferkauff School of Psychology  
Bronx, New York, USA

Sanghamitra Iyengar  
Samraksha  
Bangalore 560018

Shivnath Ghosh, PhD  
H.P. University  
Shimla, India

Group F  
Qualitative research in sexuality with specific focus on male vulnerability

**Moderators**

Sharful Islam Khan, MBBS, PhD  
ICDDR,B  
Dhaka-1000

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>3:50 – 4:15 pm</td>
<td>Coffee break</td>
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<tr>
<td>4:15 – 4:45 pm</td>
<td>Individual group presentations &amp; future direction (10 minutes for each of the 6 groups)</td>
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<tr>
<td>4:45-5:00PM</td>
<td>Closing remarks</td>
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Junta Arnsten, MD  
Albert Einstein College of Medicine  
Bronx, New York, USA

**Banquet**
Symposium on HIV/AIDS: Trials, Treatment and Research
9:30AM to 6:00PM

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
<th>Institution</th>
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<tr>
<td>09:30AM – 9:40AM</td>
<td>Introductory Remarks</td>
<td>Vinayaka R. Prasad, PhD</td>
<td>Albert Einstein College of Medicine</td>
<td>Bronx, NY, USA</td>
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<tr>
<td>09:40AM – 9:50AM</td>
<td>Program Outline</td>
<td>Ganjam Kalpana, PhD</td>
<td>Albert Einstein College of Medicine</td>
<td>Bronx, NY, USA</td>
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<tr>
<td>09:50 AM – 10:00AM</td>
<td>Welcome</td>
<td>Udaykuamr Ranga, PhD</td>
<td>Jawaharlal Nehru Centre for Advanced Scientific Research</td>
<td>Bangalore, Karnataka State, India</td>
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<tr>
<td>10:00AM – 10:45AM</td>
<td>Inaugural Address</td>
<td>Dr. Suniti Solomon, MD</td>
<td>YRG Care</td>
<td>Chennai, Tamilnadu State, India</td>
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<td>10:45AM – 11:00AM</td>
<td>Coffee Break</td>
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<tr>
<td>11:00AM to 12:00PM</td>
<td>Session A: HIV/AIDS Studies Using Clinical Cohorts</td>
<td>Chandray Anastos, MD</td>
<td>Albert Einstein College of Medicine</td>
<td>Bronx, NY, USA</td>
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Session A: HIV/AIDS Studies Using Clinical Cohorts
11:00AM to 12:00PM

**Chairs**

Dr. Ellie Schoenbaum, MD
Albert Einstein College of Medicine
Bronx, New York, USA

Lt. Gen. D. Raghunath, MD
Sir Dorabji Tata Centre for Research in Tropical Diseases
Bangalore, Karnataka, India

**11:00AM - 11:20AM** ‘Predictors of favorable outcomes of antiretroviral therapy in US & Rwandan Women’
Kathryn Anastos, MD
Albert Einstein College of Medicine
Bronx, NY, USA

**11:20AM - 11:40AM** ‘Impact of Antiretroviral Therapy on changing the Natural History of HIV disease in Southern India’
11:40AM – 12:00PM ‘Using cohorts of STD patients and HIV sero-discordant couples to estimating HIV incidence, prevalence and associated risk factors’

Dr. Arun Risbud, MD, MPH
National AIDS Research Institute
Pune, Maharashtra State, India

Session B: Animal Models for HIV and Vaccine Studies
12:00PM to 3:10PM

Chairs
Vijaya Sachidanandam, PhD
Indian Institute of Science
Bangalore, Karnataka State, India

Udaykumar Ranga, PhD
Jawaharlal Nehru Centre for Advanced Scientific Research
Bangalore, Karnataka State, India

Plenary Lecture I
12:00PM – 12:45PM ‘Tackling HIV Clade C: Pathogenesis Studies and Vaccine Development in Primate Models’

Ruth Ruprecht, MD, PhD
Harvard University
Boston, MA USA

12:45PM – 1:45PM Lunch Break

1:45PM – 2:05PM ‘Regulatory T cells in SIV infection’

Ramarao Amara, PhD
Emory University
Atlanta, GA, USA

2:05PM – 2:25PM ‘Not quiet on the mucosal front: HIV-specific immune responses in mucosal tissues’

Barbara Shacklett, PhD
University of California Davis
Davis, CA, USA

Plenary Lecture II
2:25PM – 3:10PM ‘Killing the Tubercle Bacillus: Strategies to make a better TB Vaccine’

William R. Jacobs, Jr., PhD
Albert Einstein College of Medicine
Bronx, NY, USA
3:10PM to 5:35PM

Chairs
Ganjam V. Kalpana, PhD
Albert Einstein College of Medicine
Bronx, NY, USA

Susarla K. Shankar, MD
National Institute of Mental Health and Neurosciences
Bangalore, Karnataka, India

Plenary Lecture III
3:10PM – 3:55PM
‘Interactions between HIV-1 and host cell proteins and RNAs in virus replication’

Kuan Teh Jeang, MD, PhD
National Institute of Allergy and Infectious Diseases, NIH
Bethesda, MD, USA

3:55PM – 4:15PM
Coffee Break

4:15PM – 4:35PM
‘Dynamics of host-virus interaction during HIV-1 replication’

Ganjam Kalpana, PhD
Albert Einstein College of Medicine
Bronx, NY, USA

4:35PM – 4:55PM
‘Influence of subtype-specific genetic polymorphism on HIV-1 neuropathogenesis’

Vinayaka R. Prasad, PhD
Albert Einstein College of Medicine
Bronx, NY, USA

4:55PM – 5:15PM
‘A Unique HIV-1 subtype-C molecular clone demonstrates expanded coreceptor use’

Udaykumar Ranga, PhD
Jawaharlal Nehru Centre for Advanced Scientific Research
Bangalore, Karnataka State, India

5:15PM – 5:35PM
‘HIV accessory proteins and their role in pathogenesis’

Shahid Jameel, PhD
International Center for Genetic Engineering and Biotechnology
New Delhi

Closing Ceremony
6:00PM to 7:00PM

6:00PM to 7:00PM
Closing Remarks
Dr. M. R. S. Rao, PhD
President, JNCASR
Bangalore, Karnataka, India