

## Role of Gastrointestinal Immune System in HIV infection

**Overview:** Since the start of the epidemic in the 1980s, 35 million people have died and more than 70 million have been infected from human immunodeficiency virus-1 (HIV-1) infection. The primary manner of HIV-1 transmission occurs at mucosal surfaces, including the oral, cervicovaginal, and rectal mucosal epithelia. HIV-1 predominantly targets cells associated with the adaptive immune response, in particular CD4+ T cells, which reside primarily in the lymph nodes and gastrointestinal tract. The intestine is the largest lymphoid organ, harboring between 40-80% of the total lymphocytes in the body. The intestinal mucosal immune response in healthy individuals is characterized by a balance between immunity, which protects mucosal surfaces from harmful organisms, and tolerance, which allows the intestinal mucosa to interact in a nonpathogenic way with the gut microbiota and food antigens to which it is exposed. Since the intestine is the major site of early viral replication, intestinal immune responses are likely to be greater in magnitude than peripheral immune responses in early infection. Thus, rapid induction of mucosal immune responses is likely to be crucial factors in preventing and controlling HIV-1 infection and early viral replication. However, since memory CD4+ T cells are critical for generating and maintaining vaccine responses, the rapid elimination of this subset likely results in immune deficits that “progressing” hosts cannot overcome. Understanding HIV pathogenesis demands understanding mucosal immune systems as well as understanding the host pathogen interaction.

This course provides perspectives on the role of gastrointestinal immune system in HIV infection and potential strategies for solving important clinical problems.

<b>Dates</b>	18 <sup>th</sup> -22 <sup>nd</sup> December 2017										
<b>Location</b>	B.M.S College of Engineering, Bull Temple Road, Bangalore-560019										
<b>Course schedule</b>	<table border="1"> <tr> <td>18<sup>th</sup> Dec 2017</td> <td>Introduction to Gastrointestinal immune system</td> </tr> <tr> <td>19<sup>th</sup> Dec 2017</td> <td>Introduction to HIV and study on animal model(s)</td> </tr> <tr> <td>20<sup>th</sup> Dec 2017</td> <td>HIV mediated pathogenesis and mucosal immunology- part 1</td> </tr> <tr> <td>21<sup>st</sup> Dec 2017</td> <td>HIV mediated pathogenesis and mucosal immunology- part 2</td> </tr> <tr> <td>22<sup>nd</sup> Dec 2017</td> <td>Mucosal HIV vaccine and future studies</td> </tr> </table> <p><b>Number of the participants for the course is limited to 60</b></p>	18 <sup>th</sup> Dec 2017	Introduction to Gastrointestinal immune system	19 <sup>th</sup> Dec 2017	Introduction to HIV and study on animal model(s)	20 <sup>th</sup> Dec 2017	HIV mediated pathogenesis and mucosal immunology- part 1	21 <sup>st</sup> Dec 2017	HIV mediated pathogenesis and mucosal immunology- part 2	22 <sup>nd</sup> Dec 2017	Mucosal HIV vaccine and future studies
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<b>Fees</b>	<p>Participants from abroad : US \$500  Industry/ Research Organizations : Rs.5,000  Faculty from other Institutions : Rs. 3,000  Students from other Institutions : Rs. 1,000  The above fee includes all instructional materials, computer use for tutorials and assignments. Payment to be made through NEFT. The details are as follows:  Name of Account Holder : GIAN  Account Number : 50371145055  Bank &amp; Branch : Allahabad Bank, Hanumanthnagar Branch  IFSC Code : ALLA0212011  MICR Code : 560010007  The participants will be provided with accommodation based on availability on payment basis</p>										
<b>Who can attend</b>	<ul style="list-style-type: none"> <li>• This course is designed for researchers from R&amp;D Companies with emphasis on viral vaccine development and pathology</li> <li>• Undergraduate, Masters and Ph.D. students and faculty with interest in viral pathogenesis and immunology.</li> </ul>										

## Foreign Faculty



Dr. Bapi Pahar, BVSc & AH, MVSc  
Associate Professor  
Tulane University, USA

Dr. Bapi Pahar, PhD, MBA, is an Associate Professor in the Department of Microbiology and Immunology at Tulane University School of Medicine. As a postdoctoral fellow in California and then Tulane, he carried out several infectious disease pathogenesis and vaccine studies that provided important information towards understanding the mechanism of the disease induced cellular dysfunction and their role in modulating cellular and humoral immune responses. Dr. Pahar has received his BVSc & AH from Bidhan Chandra Krishi Viswavidyalaya, India. After finishing his graduation, he has finished MVSc and PhD in Veterinary Virology from Indian Veterinary Research Institute, India. Dr. Pahar moved to USA as a postdoctoral fellow at University of California, Davis. He also has exceptional skills in flow cytometry and immunology and is a collaborator with many Core and Affiliate Scientists. His research interests focus on the understanding infectious disease pathogenesis (including SIV/HIV, Tuberculosis, Measles, Lyme Disease, West Nile and Herpes Simplex virus), specifically in studying the role of T and B cell responses in the early phase of infection and in the preclinical development of vaccines using mice and macaque model. He has a broad background in cellular and humoral immunology, virology and has over 16 years of experience with different animal models. More recently he has developed a research program focusing on the importance of intestinal epithelial stem cells and its role in regulating epithelial regeneration and maintaining epithelial barrier. Dr. Pahar has finished his MBA with specialization in Entrepreneurship and International business from Tulane University.

## Coordinators:



Dr. Savithri Bhat, Ph.D. HOD



Dr. Divijendra Natha Reddy, Ph.D

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Course Registration: <http://www.gian.iitkgp.ac.in>

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