

**National Conference on**  
**“Community Microbial consortia and the human holobiont – implications of**  
**yet-un-culturable microorganisms in systemic health, disease and**  
**personalized medicine”.**

**7<sup>th</sup>-8<sup>th</sup> December 2015**

**AIM AND OBJECTIVE OF THE CONFERENCE**

The proposed two day conference will highlight the **“importance and the role of community microbial dynamics in human health and disease and how this could help in personalized medicine concept of treating diseases”**. The conference will be conducted by the Department of Immunology and Microbiology, The American College, Madurai, Tamil Nadu. Our institution currently has active collaborations with many national institutes such as Tuberculosis research Center, Chennai, National Institute of Communicable diseases, National Institute of Cholera and Diarrhoeal diseases, National Center for Cell Sciences and Aravind Eye hospital. Also our International Collaborations with Loma Linda University, School of Medicine, California, Kansas Medical Center, Kansas and Concordia College, New York, USA brings the needed expertise to conduct this conference. Being one of the oldest institutions in Southern Tamil Nadu, our infrastructure is extensive to efficiently execute this conference. The conference will cater to the need of the budding scientists, academic faculty, industry and students in bringing nexus new knowledge that will further their prosperity and efficient work. **The chosen topic is creating international awareness and upcoming research focus in India.**

**PREAMBLE AND INTRODUCTION OF THE THEME**

Our microbiome - the trillions of bacteria, archaea, fungi, protists, and viruses that live in our bodies, outnumbers our own cells by 10-fold. This diverse community of microbes has multiple functions that are either beneficial or detrimental to the

human body, and holds tremendous potential to revolutionize medicine. Most eukaryotes develop close interactions with microorganisms that are essential for their performance and survival. Hence the eukaryote-prokaryote interactions can be considered together as a meta-organism – “*Holobionts (or) the superorganism*” as being one of the new organs of the human body. Recent body of knowledge has shown that the interactions among them (Pathogen – pathogen) and also with the host (host-pathogen) could predispose to systemic implications. Microbial consortia are essential mode of pathogen survival and exist in specific niche. Some “*symbionts*” transition into “*pathobionts*” causing diseases due to both external and internal environmental variations. Among the most diversified microbiome in the human body, the gut and the oral microbiome show a divergent class of microorganisms of which more than 80% are “*yet-un-cultivable*”. Hence focus on the human microbiome research is given only to the common microorganisms causing disease that constitute the rest 20%. Studying the yet-un-culturable organisms and their interactions are essential to get the overall picture of the real time conditions during health and disease. While gut microbiome variations have been attributed to obesity, diabetes and mental illness.

Unifying science based on technological combinations has made a tremendous improvement in human health aspects through the recent past. Converging such biotechnological innovations through cutting edge recent trends in various related fields of biotechnology is providing a synergistic combination to the current progress. A transition from Biology to modern diversifications include various “Omics” and related biotechnological frontiers. This gives the recent researchers and young students a new taste of combinatorial scientific arena one has to be aware of. Unifying such a discipline of science envisions a strong footage for the young minds to be productive utilizing the relevant state-of-the art technologies.

The two day national conference aims to bring International (Prof. Prof. Dr. Hansel Fletcher and Dr. Wilson Aruni , who are also attending 14<sup>th</sup> FAOBMB Congress at CCMB, Hyderabad)and national scientists of repute to disseminate new knowledge on the role of neglected area in human science “ *Role of yet –un-culturable microorganisms*” in health and disease concept. This has been the recent focus in the international arena. The relative significance of these yet-un-culturable bacteria and their interactions could play a significant role towards personalized medicine.