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**Meeting Report**

The goal of regenerative medicine is to replace tissues lost to damage, age, or disease with functional tissues. Inherent in making this potential a reality is a thorough understanding of the behavior of stem cells in the development and maintenance of organs in the body. An emerging paradigm in the understanding and application of regenerative medicine is the impact of inflammation on the cells that rebuild/regenerate a tissue. Not only do infiltrating immune cells fight off infection through the damaged tissue, but they are increasingly being appreciated for their role in regulating stem/progenitor cell behavior. Moreover, the practice of stem cell therapy faces the obstacle of maintaining the viability and controlling the lineage of transplanted stem cells in a stressed tissue with a robust inflammatory microenvironment. This conference provided a unique venue to stimulate the further crosstalk between the two fields of inflammation and tissue homeostasis, in order understand the reciprocal interactions between leukocytes and stem/progenitor cells. The congregation of basic scientist and clinicians from academia and biotechnology formed a platform where these important questions can be addressed from both physiological and pathological avenues. The topic of the conference represents the next frontier in the application of stem cell biology. Important strides are being made in the individual fields of stem cell biology as well as the machinery that is responsible for the generation of an inflammatory response. However, there is no venue in which these converging topics are discussed from both the standpoints of basic biology and the treatment of diseases. This is indeed a timely topic given that the understanding of the extensive crosstalk between stem cells and immune cells is developing into a bottleneck in directing stem cell behavior in damaged, diseased, or aged tissue with the goal of replacing/rebuilding them.

It is worthwhile to highlight that the choice of inStem/NCBS as the venue for this international conference was made to take advantage of the incredible resources of India and Bangalore in particular. Bangalore is known for being at the forefront of information technology, but there is a burgeoning growth in life sciences research in this area. Recognizing this rich scientific resource, starting in 2012 the FIRC Institute for Molecular Oncology (IFOM) in Milan, Italy established agreements of collaboration with the most innovative indian research institutes. Out of this emerged the IFOM-inStem Joint Research Laboratory that join the complementary strengths of these two institutes to tackle important questions in tissue regeneration and repair and the diseases that arise when these process go awry such as in cancer. Invited speakers and overseas attendees received a valuable introduction to all the scientific opportunities for collaboration and research materials that remain largely untapped in India. As highlighted below, this meeting served as a catalyst to form international collaborations that can be supported by the numerous collaborative granting schemes involving India and a host of other countries that are currently available.

The speakers were drawn from an international pool of researchers who are recognized thought leaders in their respective fields. A particular point of pride was the gender equity achieved in the oral presentations – 15 of the 30 talks were from female scientists. Topics covered over the 2.5 days of the conference included Tissue Development and Regeneration/Repair, Stem Cells and Aging, Regulation and Function of Inflammatory Signals, Cell Migration and Metastasis, Vascular Biology and Pathology, and Cancer Stem Cells and the Tumor Stroma. Participants were drawn from academia, private research foundations, biotech, and the clinic. As such the oral and poster presentations spanned the spectrum of basic cell and molecular biology to therapeutic applications. By all accounts, the conference was very well received as several participants noted that the session dedicated to epithelial biology and another on vascular biology were the first ones held in India. Among the aims of the conference was to foment collaborations with Indian scientist with their international counterparts. One anecdote of the success in this endeavor was the discussion of including vascular biologists from India in a new international vascular biology network being organized by some of the conference speakers. Moreover, several young cutaneous biologists were invited by another conference speaker to attend a meeting she is organizing in Singapore that will directly relate to their work.