

❖ Name & Designation	: Mr. Ayan Ray, Ph.D Student
❖ Address	: Dept. of Biological Sciences and Bioengineering, IIT Kanpur, Kanpur-208016, UP
❖ Name of the International Conference/ Seminar/Symposium/ Workshop	: 73rd Annual Meeting Society for Developmental Biology-2014
❖ Title of the abstract accepted	: Precise restriction of BMP signaling is required for articular cartilage differentiation.
❖ Venue & Date	: Washington, USA, 17-21st July 2014.
❖ Money sanctioned	: ₹ 1,00,000/-
❖ Money reimbursed	: ₹ 1,00,000/-

### Participation Report

#### **Organization of the conference:**

“Society for Developmental Biology 73rd Annual Meeting” was being held from **16/07/2014 to 22/07/2014**, in University of Washington, Seattle, WA, USA under the aegis of **Society of Developmental Biology**. Society of Developmental Biology is the umbrella organization that comprises of leading developmental biologists from around the world and this conference is their flagship meeting.

Details for the program is available from

[http://oemmnadbldboiebfnladdacbfmadadm/http://www.sdbonline.org/uploads/files/Final\\_Complete\\_Program.pdf](http://oemmnadbldboiebfnladdacbfmadadm/http://www.sdbonline.org/uploads/files/Final_Complete_Program.pdf)

Some of the interesting highlights and sessions are as follows:

1. Satellite Workshop: Using CRISPR/Cas9 (Supported in part by genesis)
2. Satellite Symposium–Human Development and Disease
3. Joint Session–Stem Cells in Cardiac Development and Repair
4. Tissue Formation and Engineering
5. Gene Regulatory Mechanisms, etc.

#### **New development presented at the training/workshop**

As a final year graduate student at the Department of Biological Sciences and Bioengineering, IIT Kanpur, I presented my graduate work in the form of a poster at the “**Society for Developmental Biology 73rd Annual Meeting**”, held from **16/07/2014 to 22/07/2014**, in Seattle, Washington. In this work we have described a mechanism as to how articular cartilage differentiation takes place in vertebrates. We observed that it is a conserved process in chick and mice and we have extended the results of the study to observe differentiation of stem cells specifically into articular cartilage fate. Our studies have provided a novel therapeutic approach to target osteoarthritis and developing cell therapy based approach to deal with the disease. We have established active collaborations and acquired tissue engineering skills to support the cause. This work was compiled and presented at the conference.

#### **New development resulting from the conference:**

“Society for Developmental Biology 73rd Annual Meeting” was being held from **16/07/2014 to 22/07/2014**, in University of Washington, Seattle, WA, USA under the aegis of **Society of Developmental Biology**. Society of Developmental Biology is the umbrella organization that comprises of leading developmental biologists from around the world and this conference is their flagship meeting.

Our work has revealed the unique process of early differentiation of articular cartilage during embryo development. This knowledge has helped us qualify Wnt signaling as a pro-articular cartilage signal necessary to differentiate stem cells into articular cartilage fate. The concepts of development have enriched our knowledge in this field which has to be incorporated as technology. Also the novel ways of gene targeting using nuclease based systems is also required to understand biological process. This opportunity has at the conference has built international collaborations with skeletal biologists to bring a better perspective to our work. We have collaborated with Prof. Richard Harland (UC Berkley) and have compiled our work in a form of a manuscript which is being prepared.

The conference has helped me to create a perfect platform for future research prospects and collaborative science.