SCOPE OF THE MEETING:

Our ability to view and alter biology is progressing at an exponential pace faster even than electronics. The purpose and scope of this *Therapeutics Discovery Symposia USA 2014* (on May 5-6, 2014) is to provide a forum for the discussion of the current state of the art of rapidly evolving RNA interference, MicroRNAs, Stem Cells and Genome Editing highly interdisciplinary emerging fields in biotechnology. This will consists of three parallel theme meetings:

1. RNA interference & MicroRNAs-2014: This is our 11th international theme conference continuously held in the first week of May in Waltham/Boston, Massachusetts, USA. Emeritus Professor Arthur Pardee of the Harvard University Medical School inaugurated our first meeting in May 2003. Since then, pioneers in both RNAi & MicroRNAs fields including: Nobel laureates Drs. Craig Mello, Robert Horvitz, Sidney Altman, Richard Roberts and Professors Gary Ruvkun, David Bartel, Richard Jorgensen, Phil Zamore, Alexander Rich, Robert Weinberg, Carlo Croce, Late Paul Zamecnik, Late Marshall Nirenberg, and many more have given keynote speeches. RNAi and MicroRNAs are the *"biology's Big Bang"* and we are igniting the spirit of both RNomics & microRNomics in order to understand the biology of gene-silencing and to develop innovative products based on this technology platform. Both RNA interference and microRNA research will bring an impact in the scientific and commercial enterprise for the development of new diagnostics, and therapeutics for several human diseases ailing the world today, including viral, cancer, cardiovascular, neurodegenerative, inflammatory, and metabolic diseases. Additionally, oligonucleotide design, synthesis (using modified chemistries), and delivery of these (siRNAs/microRNAs/non-coding/Lnc RNAs) has attracted a much attention in recent years from both academic and industry laboratories, so we combined and grouped into 'RNA interference & MicroRNAs: From Biochemistry to drugs and therapeutics.*'*

2. Stem Cells & Cell Signaling-2014: This is our 7th international theme conference continuously held in either West Coast or East Coast of USA. Nobel Laureate Paul Berg of the Stanford University Medical School inaugurated our first meeting in 2006. Since then, pioneers in both Stem Cells & Tissue Engineering fields including: Nobel Laureate Elizabeth Blackburn and professors Gail Martin, Irving Weissman, Ole Issacson, Helen Blau, David Scadden and many more have given keynote speeches. Stem cells have great utility not only in cell biology and clinically for treatment of diseases, but also in drug discovery and development. Therefore, this meeting will focus on developmental aspects to signaling mechanisms and genome-scale mapping of DNA methylation in pluripotency. Transcriptional controls by various transcription factors, non-coding RNAs and epigenetic mediated pathways those are involved in the gene regulation also discussed. Highlights of the stem cell based-therapeutics from biotech industry and associated novel reagent/assay/tool developments from reagent companies and emerging stem cell science from academic laboratories will be discussed and grouped into 'Stem Cells & Cell Signaling.'

3. Genome Engineering & Genome Editing-2014: This is our first international theme conference on Genome Editing to be held at the Hilton Garden Inn, Waltham, western suburb of Boston, Massachusetts, USA. However, part of the theme 'Genome Engineering' organized earlier as 'Frontiers in Synthetic Biology' meeting since 2008. Nobel Laureate Jack Szostack of the Harvard Medical School inaugurated our first meeting in 2008. Since then, pioneers in synthetic biology including: Drs. Clyde Hutchison III, Wilfried Weber, Pam Silver, Jim Collins, Ron Weiss, Ralf Wagner and many more have given keynote speeches. The topic of genome editing mediated by small to long non-codingRNAs is emerging as a novel mechanism of gene regulation in stem cell development and pluripotency. Additionally, engineering of Nucleases, TALENs and CRISPRs has attracted a much attention in recent years from both academic and industry laboratories, so we combined and grouped into 'Genome Engineering & Genome Editing*.'*

In this international meeting, prominent researchers (Developmental biologists, cell biologists, geneticists, molecular biologists, computational biologists, neurobiologists, clinicians, chemists and physicists) from both academia and industry will gather and discuss the applications in form of keynote lectures, invited talks, short oral, and poster presentations.

Venue: Hilton Garden Inn is a star hotel located on the Rt. 95/128 high-tech corridor in Waltham, a western suburb of Boston/Cambridge, which is well connected by bus transportation.

Note: All the members (except keynote speakers and others who arranged with organizer) who participate in this symposium have to register for the meeting by paying the appropriate registration fee.