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Society for Biological Engineering Holds Second International Conference on Stem Cell Engineering

Boston Conference Theme Is "Engineering Cell Fate"

NEW YORK, April 8, 2010 – With stem cells an ever-more important area of research, the Society for Biological Engineering (SBE) of the American Institute of Chemical Engineers has organized its Second International Conference on Stem Cell Engineering. The conference, which runs from May 2nd to 5th at the Hyatt Harborside Hotel in Boston, Massachusetts, will bring together bioengineers with stem cell scientists to focus on the ways in which basic research, applied science, and engineering can be optimally combined to impact healthcare.

Co-chaired by Peter Zandstra of the University of Toronto and George Daley of Children's Hospital and Harvard Medical School, the conference, is co-sponsored by the International Society for Stem Cell Research. It will present advances in our understanding and application of: biological mechanisms that underlie stem cell fate control; approaches to reprogram cells into pluripotent or lineage specific cells; technologies employed to study stem cell function; models to describe stem cell responses perturbations; and bioprocesses to culture stem cells for commercial applications.

Keynote speakers are:

- James Collins of Boston University on "A Network Biology Approach to Stem Cell Engineering"
- Austin Smith of Cambridge University on "Design Principles of Pluripotency"
- David Schaeffer of the University of California, Berkeley, on "Molecular Elucidation and Engineering of Stem Cell Microenvironments"

- more -

- Chuck Murry of the University of Washington on "Repairing the Infarcted Heart with Engineered Human Myocardium"
- Doug Melton of Harvard University on "Stem Cells to Create a Pancreas and Recreate Human Type 1 Diabetes"
- Gordana Vunjak-Novakovic of Columbia University on "Engineering Human Tissues"

"To improve healthcare, biologists and engineers need to work together, and this is especially true in the area of stem cell science and technology," says Peter Zandstra University of Toronto. George Daley, Children's Hospital Boston added: "The first stem cell bioengineering conference in 2008 showed us how much promise stem cells hold. We believe this second conference will further the important work of propagating stem cells, and applying what we know to tissue engineering, cell therapy, and drug development."

Other featured speakers include:

- Hang Lu of Georgia Institute of Technology, who will address screening platforms for neuroscience and systems biology
- Lee Rubin of Harvard University on stem cell engineering for drug discovery
- Amy Wagers of Harvard University on restoring function to aged stem cells
- Paul Frenette of Mount Sinai School of Medicine on cellular constituents of the hematopoietic stem cells
- David Mooney of Harvard University on using polymers to program stem cell *in situ*
- Dennis Discher of the University of Pennsylvania and Ingo Roeder of the University of Leipzig in separate presentations on cell fate decisions
- Wei-Shou Hu of the University of Minnesota on stem cell bioprocesses
- Ingo Roeder of the University of Lipzig on heterogeneity and flexibility of cell fate decisions
- Connie Eaves of TFL Vancouver on cancer stem cells on lessons from leukemia
- Daniel Anderson of the Massachusetts Institute of Technology on development of biomaterials for tissue engineering and drug delivery
- Kristi Anseth of the University of Colorado on tunable scaffolds to direct cell function and tissue regeneration
- Gordon Keller of the University of Toronto on directed differentiation of pluripotent stem cells

Beyond its series of stem cell conferences, SBE has brought together a consortium of companies to pursue research to better determine Chinese hamster ovary genetic data, which is limited despite this cell line's importance to biological products. Additionally, SBE holds conferences on bioengineering and nanotechnology, accelerating biopharmaceutical development, and biomolecular engineering.

About SBE:

Established in 2004, the Society for Biological Engineering is a technological community for engineers and applied scientists integrating biology with engineering. Members of SBE come from a broad spectrum of industries and disciplines and share in SBE's mission of realizing the benefits of bioprocessing, biomedical and biomolecular applications. http://bio.aiche.org.

About AIChE:

AIChE, founded in 1908, is a professional association of 40,000 chemical engineers in 93 countries. Its members work in corporations, universities and government using their knowledge of chemical processes to develop safe and useful products for the benefit of society. For more information, please go to www.aiche.org.

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