

RENEW

www.ncrm.us

RENEW: Global Stem Cell and Regenerative Medicine Education Network

February 2009

To foster the continued global exchange of cutting-edge research and advancements in regenerative medicine, the National Center for Regenerative Medicine (NCRM, www.ncrm.us), the Center for Stem Cell & Regenerative Medicine (CSCRM, www.thestemcellcenter.org) and the Skeletal Research Center are initiating a consortium-based, internationally coordinated educational and research program. This global initiative, **RENEW: Global Stem Cell and Regenerative Medicine Education Network**, will link stem cell and regenerative medicine centers, investigators, and students around the world to provide first-class educational and research opportunities. RENEW will launch its initial hallmark course in August of 2009 at the MSC2009 Conference (www.msc2009.net) in Cleveland, OH, while initiating the network with selected seminars and organizational meetings in early 2009.

A curriculum will be developed by the participating institutions that will advance cutting edge methods, technologies, and theories in stem cell and regenerative medicine research. The year long, global lecture course (10 lectures in the fall, September to December and 10 lectures in the spring, January to April) will be given with specific lectures contributed by lecturers from the global pool of affiliated institutions. Arnold I. Caplan, PhD., Professor of Biology and Director of the Skeletal Research Center of Case Western Reserve University in Cleveland, Ohio will serve as the course Director for 2009-10; the tentative outline proposal is provided below. A lecture of 60-80 minutes with a 20-40 minute Q&A by email/audio connections will be offered on a weekly basis with password access for each of the affiliate institutions worldwide. The lecture time will be set for 3-9pm US East Coast time to provide the largest audiences US, South American, Europe continent, Asia, etc. A rebroadcast at 3am and 10 am the next day will also be available without live Q&A.

Topics:

Overview: Arnold I. Caplan: The Past, Present and Future (where have we been, where are we now and where are we going?)

Stem Cells in embryology and adults

- A. Development and differentiation
- B. Aging
- C. Signal transduction

Embryonic Stem Cells in Mouse and Human:

- A. General
- B. Specific:
 - I. Heart
 - II. Blood
 - III. Mesenchymal

Hematopoietic Stem Cells:

- A. History and Current
- B. Assays: mouse and human
- C. Cancer Stem cells

Mesenchymal Stem Cells:

- A. Tissue Engineering
- B. Trophic (animal models, clinical)
- C. MAPCs
- D. Dental Pulp, Fat, Other

Skin:

- A. Keratinocyte stem cells
- B. Skin Equivalents

Neural Stem Cells

- A. Nervous system development and neural stem cells
- B. Glial scar regeneration
- C. Brain injury and neural stem cells

Cardiac Stem Cells:

- A. Overview of approaches
- B. Case studies

Liver Stem Cells

Other Stem Cells

Cell-based Gene Therapy

- A. Delivery methods
- B. Applications

Tissue Engineering:

- A. Scaffold, matrices, formats
- B. Materials and techniques
- C. Applications

Corporations: OTI, Mesoblast, Geron, Genzyme, etc.

Regulatory Comparison: USA, Europe, Asia, South America

To become involved in RENEW, either as a curriculum advisor, or as a participant, please contact Debra Grega at debra.grega@case.edu or 216.368.3614.