

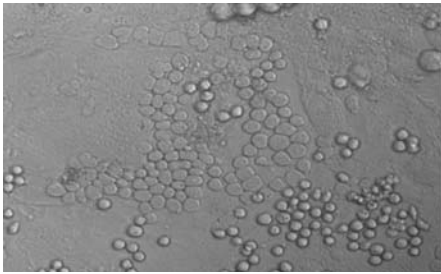
STEM CELL BIOLOGY RESEARCH GROUP



Objectives

- Putting stem cells to work in the service of medicine.
- Repairing and/or regenerating tissues damaged by genetic, developmental, or acquired disease processes, cancer or aging, by transplanting stem cells.
- Training of medical, allied health, graduate and M.D./Ph.D. students in the health sciences.
- Facilitating the dissemination of scientific/medical information as Co-Editor of Cytotherapy (Journal of the International Society for Cellular Therapy—ISCT). See Cytotherapy 4:497-499 (2002).

Current Projects:



Cobblestone area formed by stem cells growing on stroma.

- Basic biology of adult tissue stem cells. Evaluation of stem cell quality, assays and alterations with aging.

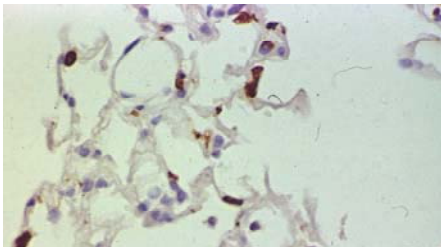
Investigators: J.G. Sharp, Ph.D. and Sue Brusnahan; in collaboration with Drs. Berger, Garvin, Jackson, Kessinger, Lynch, McGuire, O’Kane and Connie Feschuk and Judy Lane.



In vitro mobilization of stem cells of a femoral plug by cytokine.

- Biology of blood stem cells, their in vitro and in vivo mobilization and repair of bone.

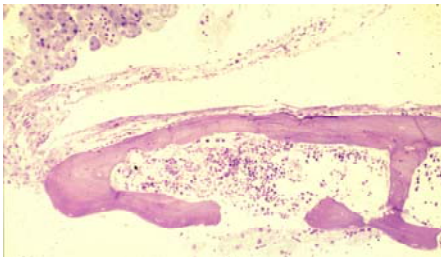
Lead Investigator: A. Kessinger, M.D. with B. O’Kane, Ph.D., Emily Pierson.



Bone marrow cells (stained brown) participate in repair of lung injury.

- Biology of lung stem cells, repair of lung injury, treatment of emphysema.

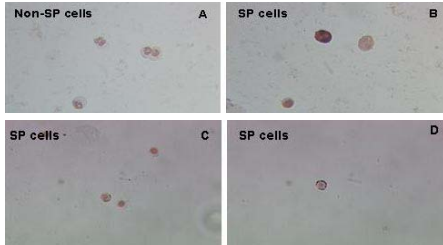
Lead Investigator: S. Rennard, M.D. with Shin Kawasaki, M.D., Joel Michalski, and Marta Narvaez (Ph.D. student)



Bone growing (pink) under kidney capsule.

- Cellular therapy of bone, repair of bone defects, improved integration of tendons.

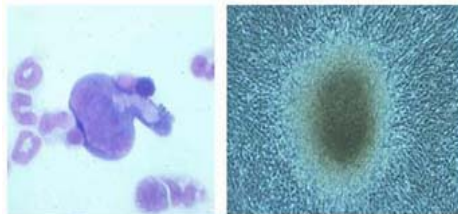
Lead Investigator: J.G. Sharp, Ph.D., A. Kessinger, M.D., B. O’Kane, Ph.D., J. Jackson, Ph.D., and Sue Brusnahan. (Collaborations with Implex, MTF, Wright Medical and Medtronic)



Monoclonal antibody stained stem cells.

- Stromal cells, stem cells, monoclonal antibody reagents and nanoscale metal/oxide substrates.

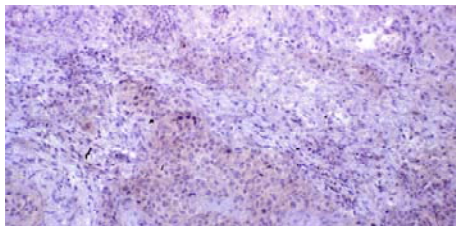
Lead Investigator: J. Jackson, Ph.D. and Feyderoon Namavar, Ph.D., with Sue Brusnahan



Breast cancer cells in bone marrow grow "domes" in vitro.

- Biology of breast cancer stem cells and metastasis to bone.

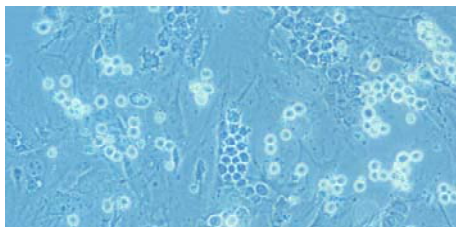
Lead Investigator: B. O'Kane, Ph.D. with A. Kessinger, M.D., E. Reed, M.D. and Emily Pierson



Lung cancer cells produce VEGF (stained brown) that induces blood vessel growth and tumor dissemination (metastasis).

- Lung cancer metastasis and outcomes.

Lead Investigator: J.G. Sharp, Ph.D. with A. Kessinger, M.D., S. Johansson, M.D., Ph.D., T. Greiner, M.D., A. Thompson, M.D., and Emily Pierson



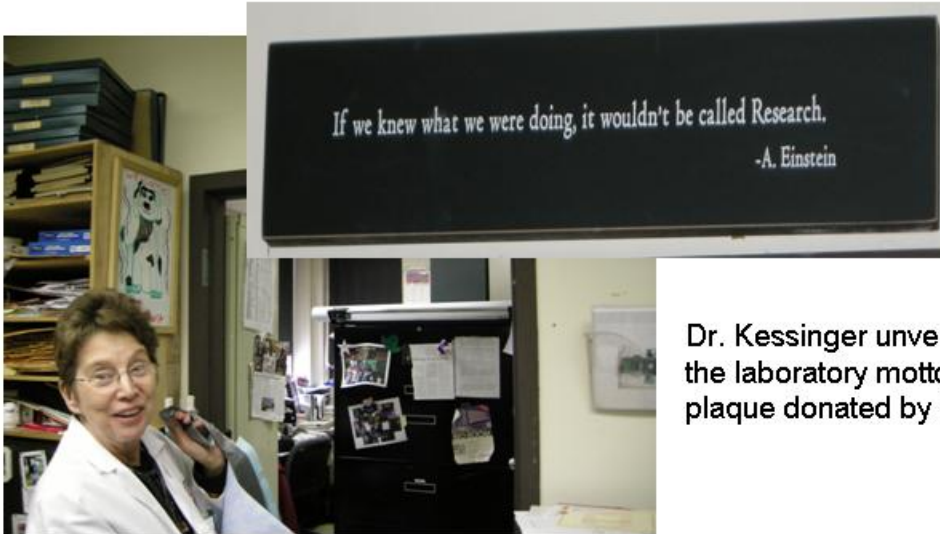
Cobblestone area formed by lymphoma cells growing on stroma.

- Lymphoma cell survival in stem cell niches.

Lead Investigator: J.G. Sharp, Ph.D., S.S. Joshi, Ph.D., and B. O'Kane.

Dr. Kessinger Unveiling the Plaque

30th Jan 2008



Dr. Kessinger unveiling the laboratory motto on a plaque donated by her.



**Members present:
(L to R)**

Dr. J. G. Sharp, Sonal Tuljapurkar, Dr. Anne Kessinger, Craig Boyer, Susan Brusnahan and Syd Clausen (not in photo).