

Research Associate Position – Skeletal Research Center (Case Western Reserve University)

The Skeletal Research Center, Department of Biology – Case Western Reserve University (Arnold Caplan, PhD, Director) has an open position for a Research Associate, in the field of Mesenchymal Stem Cell (MSC) biology. The research associate will be expected to work in two different areas: control of skeletal cancer metastasis and evaluation of engineered cartilage.

Skeletal Metastasis: The applicant will be involved in an NIH-funded project aimed at understanding the role of MSCs, acting as perivascular cells, during the invasion of circulating cancer cells (melanoma and breast cancer) into the bone marrow. *In vitro* and *in vivo* techniques will be employed to unravel the sequence of events during cancer cell extravasation, and the role of MSCs/pericytes as gatekeepers controlling the process.

Evaluation of Engineered Cartilage: The applicant will be involved in an NIH-funded project aimed at developing non-destructive evaluation technologies and protocols for engineered cartilage *in vitro*. This will include the molecular cloning of biomarker imaging probes that are based on DNA promoter activity and/or on miRNA activity, and adapting and using imaging techniques to quantify the activity of these biomarker probes in living tissue.

Primary Duties: The applicant will contribute to the design, performance and data analysis obtained within these projects, interacting with scientists from various disciplines such as Biomedical Engineering and Bioimaging, Cellular and Molecular Biology, and with clinicians from the areas of Orthopaedics and Rheumatology. The applicant needs to show excellent scientific writing skills, as he/she will be responsible for the writing of grant applications to federal agencies and private funding sources as well as scientific reports in the form of peer-reviewed articles.

Qualifications: A PhD (in Molecular Biology, Biomedical Engineering, Cell Biology/Physiology, or related fields), an MD, or an MD-PhD degree, with experience in skeletal basic research.

Requirements:

- Experience in the areas of Articular Cartilage Tissue Engineering, Skeletal Biology and/or Skeletal Stem Cell Biology (bone and cartilage progenitors).
- Laboratory experience in the areas of Cellular and Molecular Biology (including cell and tissue culture, DNA/RNA/Protein techniques, cloning, sequencing, microscopy and other imaging techniques and histology processing of skeletal tissues).
- Experience with or willingness to learn small animal surgery techniques for the musculoskeletal system.
- Experience with computer-based data acquisition and analysis, e.g., for qPCR, flow cytometry, or bioluminescent imaging.
- Excellent interpersonal communication skills and a high level of proficiency in written and spoken English.
- Ability to communicate scientifically with individuals from other disciplines, mainly from Engineering and Clinical Medicine.
- Ability to initiate independent research projects supported by own ideas.
- Ability to lead and mentor a multidisciplinary team of individuals from various backgrounds (*i.e.*, students, technicians).

For further information, or to apply, please email Dr. Arnold Caplan (aic@case.edu) or Dr. Jean Welter (jfw2@case.edu) or write to: Skeletal Research Center, 2080 Adelbert Road, Millis Building 118, Cleveland, Ohio 44106-7080, USA. To apply, please send a cover letter, a current CV, and arrange to have three confidential letters of recommendation sent.