Research Associate / Post-doctoral Position – Center for Multimodal Evaluation of Engineered Cartilage

Position objective:
The **Center for Multimodal Evaluation of Engineered Cartilage** in the Department of Biology – Case Western Reserve University (Arnold Caplan, PhD, Director) has an open position for a Research Associate. This is a unique opportunity to gain hands-on experience in all aspects of the operations of a large multidisciplinary NIH-funded P41 Biotechnology Resource Center aimed at developing non-destructive evaluation technologies and protocols for engineered cartilage *in vitro*. The grant covers 4 main projects involving three schools and colleges on Campus, and 18 external collaborative groups (both national and international). The projects range from Molecular biology to metabolomics, to mechanical engineering and signals processing. For an overview of Center activities, please visit our website: [http://ccmeec.cwru.edu](http://ccmeec.cwru.edu). The applicant is expected to be involved in one or more of the 4 technology development projects in the Center. The applicant will also be involved in the overall administration of the Center, in particular in coordinating work among the 4 main groups and all the collaborators.

**Essential functions:**

**Hands-on Laboratory Research:**
The applicant will work directly with one or more of the Center’s Technology Research and Development group leads, and will contribute to the experimental design implementation, and analysis of data obtained within these groups. The applicant is expected to initiate independent research projects supported by own ideas in the areas of engineered tissue evaluation and quality control.

**Project Administration:**
The applicant will assist the director and associate director, and will contribute to the overall administration of the Center, in particular in coordinating work among the 4 main groups and their interacting outside collaborative or service projects. This will require interaction 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 will also assist with budget preparation, forecasting and analysis of monthly expenditures.

**Qualifications:**
A PhD in an engineering or biological discipline (Biomedical, Mechanical or Electrical Engineering, Biophysics, Cell Biology/Physiology, Computer Sciences, or related fields, or an MD-PhD degree. Basic knowledge of skeletal research preferred. Requirements include:

- Excellent interpersonal communication skills and a high level of proficiency in written and spoken English is mandatory. Ability to communicate both verbally and in writing with individuals at all levels within the university as well as with individuals from other disciplines and institutions, mainly from engineering, cell and molecular biology, and clinical medicine.
- Excellent scientific writing skills, as he/she will contribute to the writing of reports to federal agencies and private funding sources, as well as scientific reports in the form of peer-reviewed articles. Solid working knowledge of MS Office Suite (Word, Access, Excel, Power Point).
- Strong organization skills; ability to multi-task, prioritize and meet deadlines. Must demonstrate attention to detail and accuracy, time management skills, and have proven ability to successfully follow-through on assigned projects.
• Ability to mentor a multidisciplinary team of individuals from various backgrounds (i.e., students, technicians) as needed.
• The candidate should also meet several of the following requirements:
  o Experience with or willingness to learn interacting with regulatory, compliance, and technology transfer offices at CWRU and other institutions.
  o Hands-on laboratory experience with mechanical engineering, image analysis or signals processing, cell and molecular biology, or mass transport/metabolomics.
  o Experience with or willingness to learn the areas of articular cartilage tissue engineering, skeletal biology and/or skeletal stem cell biology (bone and cartilage progenitors).
  o Experience with cell culture and/or bioreactor systems.
  o Experience with or willingness to learn small animal surgery techniques for the musculoskeletal system.
  o Experience with computer-based data acquisition and analysis, e.g., for qPCR, flow cytometry, bioluminescent imaging, confocal- or 2-photon-microscopy.
• Ability to initiate independent research projects supported by own ideas in the area of engineered tissue evaluation, biologics, and quality control.

Nonessential functions:
Perform other duties as assigned.

Contacts:

Department: Daily contact with Center faculty, staff, students and others to discuss issues and resolve problems. Weekly contact with director/associate director, or as required.

University: Contact with other university departments and centers on an as needed basis.

External: Contact with PI and support staff of outside collaborations, service projects, and training recipients to coordinate exchange of samples and information.

Supervisory responsibility:

Some direct supervisory responsibility may be required.

For further information, or to apply, please email Dr. Arnold Caplan (aic@case.edu) or Dr. Jean Welter (jfw2@case.edu) or write to: Center for Multimodal Evaluation of Engineered Cartilage, 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.