

Research in Biomedical Engineering



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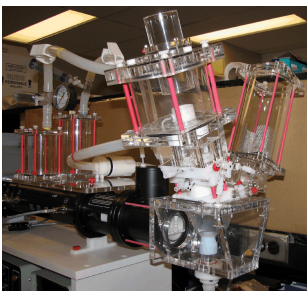
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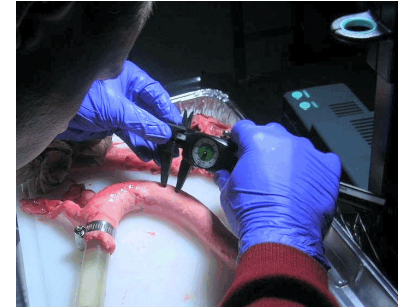
University of Ottawa
Faculty of Engineering

Mechanical Engineering
www.genie.uottawa.ca/mcg/eng/



Left heart simulator

Biomedical engineering is currently the most rapidly growing area of engineering. Many important areas in medical research and practice interact with mechanical engineering: research in biological materials such as bone, cartilage, and soft tissues, implants and prostheses, artificial hearts and other organs, biomechanics, instrumentation, and rehabilitation engineering. The Department's involvement in this area goes back nearly 20 years, and our expertise covers many of the important mechanical applications of biomedical engineering.



Experts

- N. Baddour - biomedical instrumentation
- I. Catelas - biomaterials, nanotechnology, bone regeneration
- B. Dhillon - medical device reliability
- A. Fahim - medical devices, instrumentation
- M. Fenech - bio-fluid dynamics, blood rheology
- B. Jodoin - materials and coatings for biomedical applications
- M. Labrosse - cardiovascular mechanics, repair of cardiac defects, soft tissues
- E. Lemaire - rehabilitation engineering
- M. Munro - biomedical materials
- G. Rouhi - mechanics of bone, healing and growth mechanisms in bone
- S. Tavoularis - cardiovascular fluid mechanics, artificial hearts

Partners (in addition to granting agencies)

- Faculty of Medicine
- Health Canada
- Medtronic, Inc.
- University of Heidelberg
- University of Ottawa Heart Institute

Some Current Projects

- numerical modelling of the heart and circulatory system
- mechanics of heart valves and the effects of surgical procedures on them
- prediction models for growth and healing in bone
- biocompatible coatings for implants
- detection of subcutaneous tumours