Ottawa-Carleton Institute for Biomedical Engineering

Department of Systems and Computer Engineering
Carleton University

Seminar Announcement

Speaker: Dr. Monique Frize
Systems and Computer Engineering, Carleton University
School of Information Technology and Engineering, University of Ottawa

Topic: **Overview of three research areas of MIRG**
(Medical Information technologies Research Group)

Date: Wednesday 15 November, 2006

Time: 1-2pm

Place: 4359ME, Carleton University

Abstract: **The assessment of pain** Our approach is to study how thermal dysfunction is associated with pain through the analysis of thermal images which are classified according to the part of the body they focus on (for instance, upper back, lower back, front legs, face, etc.). Relevant regions of interest are selected using anatomical markers and shapes and contours of the body and the comparison includes the computation of common as well as higher-order statistics. The technique is currently being applied to the detection of pain in infants and adults, and to identify potential muskulo-skeletal injuries caused by piano-playing and computer use. **Clinical decision-support tools** are being created to estimate clinical outcomes in obstetrics (such as pre-term birth) and delivery mode; perinatal outcomes such as the status of the infant at birth (Apgar 5), probability of survival and the development of complications are being studied. We have also created a decision-support system to help parents make difficult decisions such as, should critical care be initiated? Should it be terminated or continued? Another aspect of our tools is to use information technology (IT) to reduce the occurrence of medical errors. The third area is the development of **web services** for infant care. The project intends to offer our tools through intranet or internet services. This project consists of designing a unifying infrastructure for clinical decision support systems and medical data relating to the perinatal life cycle. The goal of such an infrastructure is to provide integrated CDSS processing in a complex distributed environment to support real-time physician decision-making.

Bio: Dr. Frize joined Carleton University, as a Professor in the Department of Systems and Computer Engineering, with a joint appointment at the University of Ottawa as a Professor in the School of Information Technology and Engineering, in July 1997. She graduated with a Bachelor of Applied Science (Electrical Engineering), received an Athlone Fellowship and completed a Master's in Philosophy in Electrical Engineering (Engineering in Medicine) at Imperial College of Science and Technology in London (UK), a Master's of Business Administration at the Université de Moncton (New Brunswick), and a doctorate from Erasmus Universiteit in Rotterdam, The Netherlands. Monique Frize worked as a clinical engineer for 18 years, and then as Professor in the Electrical Engineering Dept at the University of New Brunswick. She was inducted as a Fellow of the Canadian Academy of Engineering in 1992 and as Officer of the Order of Canada in October 1993. Dr. Frize has received five Honourary degrees and has been appointed as a Visiting Professor at Coventry University in the UK and as Affiliated Scientist at the Ottawa Health Research Institute. She has published over 130 papers in peer-refereed journals and international conference proceedings.