

**MATHEMATICAL MODELLING AND MATHEMATICAL COMPETENCIES: The case of Biology students.**

Yannis Liakos

CRMSE Visiting Scholar

Phd Research Fellow, Universitetet i Agder

Brownbag Presentation

Wednesday, March 22

12-1 PM

CRMSE Suite 128

Abstract

A common concern among the universities' departments of natural sciences is the way students deal with their mathematics studies. The level of difficulty and the demands of the majority of these courses usually fail to meet an equivalent effort from the students. This situation leads to poor exam results and to a significant number of drop outs from these courses. My research included a number of sessions (eight) in a standard freshmen mathematics course for biology students. The sessions followed up an elementary Calculus or Calculus I, course. It should be mentioned that the calculus courses were taking place in the mathematics department and included students from different departments (geology, chemistry and biology). The intervention was aiming at introducing mathematical modelling (MM) tasks in order to engage students more actively into learning mathematics through tasks that were biologically 'colored'. Two are the main goals of this intervention: a) to create a profile of mathematical competencies for every student while studying the nature of progression in it and b) study the transformations applied in a new body of knowledge which I call it "body of competencies".