



**Department of Mathematics, Statistics and Computer
Science**

St. Francis Xavier University

Presents

**Positioning Verification in the Context of
Software/System Certification**

by

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Formal verification applied to software has been seen as the main focus in determining the acceptability of that software for use. However, in examining the requirements for determining the safety of a software intensive system for use in critical situations, it is quite clear that verification plays a role, but not necessarily a crucial role. It is exceedingly possible that a piece of software satisfies its specification, but is unsafe to use. (The first and foremost reason for this is that the program satisfies the wrong specification.) In this paper we will address the nature of certification (and, generally, regulation) in the context of critical systems, widely defined, and its reliance on concepts such as evidence, measurement, assessment criteria and the notion of confidence. The last is derived from the concepts discussed by epistemologists when they try to understand how the results of experiments designed to test a hypothesis derived from a scientific theory affect the strength of our belief in the validity of that theory. Our hypothesis is that establishing the "safety" (in a very general sense) of a system is a confidence building exercise very much in the context of the scientific method. We will then place verification of software in this context, discussing its role and its limits.

Refreshments will be served before the talk in AX24A