 TITLE: Cruelty to Robots? The Hard Problem of Robot Suffering

ABSTRACT:
This year the theme of the annual conference of the International Association for Computing and Philosophy was "Minds, Machines, and Morals," in particular, *machine ethics* (ethical behavior both by and towards machines). Everyday notions of ethical treatment depend in part on the recipient's capacity to suffer, but is it possible for a robot to suffer in a literal sense? Can you punish a robot? Certainly, a robot can act afraid, but can it feel fear? This is a particular instance of what philosophers call the *Hard Problem of consciousness*: the task of explaining the relation between conscious experience and the physical processes associated with it. My presentation addresses the Hard Problem in the context of robot emotions, and in particular future robots' capacity to feel pain. Using neurophenomenological analysis, which reduces conscious experience to its smallest units and investigates their physical correlates, I consider whether robots could feel their emotions, and the conditions under which they might do so. The ultimate answer depends on unanswered but empirical questions in the neuropsychology of human consciousness. Nevertheless, I conclude that conscious emotional experience will require a robot to have a rich representation of its body and of the physical state of its internal processes, but that these are important even in the absence of conscious experience. I will also provide a little background motivation for the practical importance of research in machine ethics.

BIO:
Dr. Bruce MacLennan is an Associate Professor in the Department of Electrical Engineering and Computer Science of the University of Tennessee, Knoxville. His research focuses on self-organizing systems and on bio-inspired and other unconventional computing technologies, especially applied to artificial intelligence and cognitive neuroscience. This work sometimes extends into epistemology and philosophical problems relating to the mind. MacLennan has more than 70 refereed journal publications and book chapters and is Editor-in-Chief of the *International Journal of Nanotechnology and Molecular Computation*. He received his BS in mathematics from Florida State University and his MS and PhD in computer science from Purdue University. Before coming to UT he worked for Intel and was on the faculty of the Naval Postgraduate School.