# The Model-Based Systems Engineering Colloquium

**The Institute for Systems Research**

**UNIVERSITY OF MARYLAND 1856**

**A. JAMES CLARK SCHOOL OF ENGINEERING**

# "Compositionality and Modularity in Embedded System Design: Interface Theories and Interface Synthesis"

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*Date*:     Friday, September 17, 2010            *Time*: 11:00 A.M.
*Location*: 2460 A.V. Williams Building        *Host*: John S. Baras

### Abstract
Compositional methods, that allow to assemble smaller components into larger systems both efficiently and correctly, are not simply a desirable feature in system design: they are a must for designing large and complex systems. In this talk I will present some of our recent work on this general theme in the context of embedded systems. In particular, I will discuss two theories of relational interfaces: synchronous relational interfaces, targeted at synchronous systems, from digital circuits to hierarchical block-diagram based languages such as Simulink; and actor interfaces, targeted at dataflow models and performance properties such as throughput or latency. I will also present some work on modular code generation from hierarchical synchronous and dataflow models, based on the same principles of interfaces and interface synthesis.

### Biography
Stavros Tripakis is an Associate Research Scientist at UC Berkeley. He obtained a PhD degree in Computer Science at the Verimag Laboratory in Grenoble, France, in 1998. He was a postdoc at UC Berkeley from 1999 to 2001, a CNRS Research Scientist at Verimag from 2001 to 2006, and a Research Scientist at Cadence Research Labs in Berkeley from 2006 to 2008. His work lies in the areas of embedded, real-time and distributed systems, model-based and component-based design, verification, testing and synthesis. Dr. Tripakis is co-Chair of the 10th ACM & IEEE Conference on Embedded Software (EMSOFT 2010) and the current Secretary/Treasurer of ACM SIGBED.

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