**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**
**ODENSE UNIVERSITY**

# COMPUTER SCIENCE COLLOQUIUM

## Theoretical Computer Science: Opportunities for Mathematical Science Popularization and Computer Games

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**Tuesday, December 17, 1996, at 2:15 PM**
**The Seminar Room**

**Abstract:** Computer Science has emerged as a highly mathematical scientific crossroads discipline having wide-ranging effects on the economy and on people's lives. The talk will discuss how the mathematical foundations of computer science and computer applications can provide a rich source of experiences and opportunities for popularizing mathematical science. The central ideas of computing are often best presented with simple materials and activities. It will be argued that getting computers into the classrooms is much less important than getting the important ideas into the classroom.

The talk will report on a variety of adventures exploring the possibilities for presenting topics in "advanced" theoretical computer science to audiences of elementary school children and their parents. These adventures have inevitably raised interesting questions (not necessarily answered) about the nature of mathematics education, the heritage of mathematics culture, and the role of science popularization in education and in modern culture. The talk will attempt to stimulate consideration of some of these issues.

Computer games could conceivably be a powerful medium for education and popularization of mathematical science, yet for the most part, the computer games industry has displayed a remarkable conservatism in mathematics education. The talk will describe some ongoing adventures in exploring this potential avenue for presenting mathematical science, or at least for making a fortune from theoretical computer science by mining NP for the addictive puzzles and game structures prized by the computer games industry.

Joan F. Boyar