



Center for Magnetic Recording Research  
University of California, San Diego



## 12th Annual Shannon Memorial Lecture

To commemorate the achievements of Claude Elwood Shannon an endowed lectureship has been established at the University of California, San Diego.

Each year an outstanding information theorist will be selected to present the Shannon Memorial Lecture. The date of the lecture will be on or about Shannon's birthday (April 30<sup>th</sup>).

A bust of Shannon, situated in the lobby of the Center for Magnetic Recording Research, bears a plaque with the following inscription:

*Claude Elwood Shannon (1916-2001) Father of Information Theory*

*"His formulation of the mathematical theory of communication provided the foundation for the development of data storage and transmission systems that launched the information age"*

— Dedicated October 16, 2001. Eugene Daub, sculptor.

**May 1, 2014**

**Prof. Rudiger L. Urbanke**

Ecole Polytechnique Federale de Lausanne

*will present a lecture entitled*

**Polar Codes versus Spatially Coupled Codes**



The reliable transmission of information over a noisy channel at rates close to capacity is a fundamental building block of any communication systems. Once deemed to be a difficult problem, we have now several techniques at our disposal which allow us to accomplish this task efficiently. I will survey two of these techniques, namely polar codes and spatially coupled codes. If you had to design a new system, which should you pick? Which is better with respect to the scaling behavior, complexity, achievable throughput, universality, and robustness? As I will discuss, much is known, but several fundamental challenges remain.

**3:00 PM – Reception, Atkinson Hall**

**4:00 PM – Lecture, Qualcomm Institute - Atkinson Hall  
University of California, San Diego**

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