



## **Dr. Jean Lehmann**

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### **“Theory and experiments about an elementary coding system based on RNA”**

The present-day translation system is quite complex and presents an apparent paradox: the genetic code is established by proteins (the aminoacyl-tRNA synthetases) that are themselves built according to the rules of this same code. In order to understand why coding rules are associated with this particular polymerization process, it is appropriate to reduce the complexity of the system and try to establish a simpler form of translation that would still retain the essence of the phenomenon, but make its physical and chemical basis more clear. This could lead to the identification of a primitive form of the genetic system that may have emerged at the origin of Life. In this talk, I will show that the organization of the genetic code provides important clues for the characterization of the initial translation system. I will also show the result of experiments on small RNAs capable of “loading” their 3’ ends with amino acids from AMP-activated amino acids (a process called self-aminoacylation). These experiments suggest that small RNAs might be able to establish an initial translation system without proteins.

**Dienstag, 16. Dezember 2008, 14 Uhr c.t.**

**Gebäude E2 6, Seminarraum E.04**

**Alle Interessenten sind herzlich eingeladen.**

Die Sprecher des Graduiertenkollegs  
Manfred Lücke und Ludger Santen

**Strukturbildung und Transport  
in komplexen Systemen**