

## 東京大学 グローバル COE『統合生命学』セミナー

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日時:平成 20 年 3 月 5 日(水) 13:00～15:00

場所:東京大学理学部 3 号館 4F416 号室

演者:Dr. Richard Giegé

Emeritus Director of Research,  
University Louis Pasteur, Strasbourg

演題:Universal rules, unexpected findings and novel trends in  
the tRNA world

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tRNAs are ancient molecules present in all domains of life (eukarya, bacteria, archaea, organelles and even viruses). Beside their participation in ribosome-mediated protein synthesis, they are actors in a variety of other cellular functions. Altogether, universal rules underlie tRNA function, particularly for their interaction with aminoacyl-tRNA synthetases. However, they are often accompanied by species- or kingdom-specific structural and functional idiosyncrasies and can even be disobeyed as the result of evolution. On the other hand, many mechanistic aspects of tRNA functioning at both molecular and cellular levels are not well understood. Thus the novel trends will be of two kinds. First a reductionist perspective in light with supramolecular chemistry and second, a global perspective in light with system biology. One can expect that these two trends will merge giving rise to supramolecular biology of tRNA.

These aspects and their consequences will be discussed and illustrated by unexpected results obtained in the Asp, Gln, Glu and Tyr systems. Because future data will be dependent on the availability of advanced methodologies, particularly for the preparation of high quality crystals and of crystals of macromolecular assemblages with tRNA, this talk will also include a short presentation of a novel approach to get better crystals in user-friendly microfluidic devices based on counter-diffusion.

世話人:理学系研究科 横山 茂之(内線 24392)