

# Biosensors and Dynamic Imaging

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Organization:

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**Grand Amphithéâtre du Muséum national d'Histoire naturelle  
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## *Preliminary program*

### **Roger Y. Tsien, University of California San Diego**

Roger Y. Tsien is a pioneer in cellular imaging. After starting his career with chemical probes for calcium and other ions, he made seminal contributions on the green fluorescent protein «GFP» and developed the first genetically-encoded biosensors based on fluorescent proteins. He received the Nobel Prize in Chemistry in 2008 for this work.

Roger Y. Tsien will present his current work on biosensors for specific imaging of metalloprotease activity, a marker of migrating cancerous cells.

He will also present novel protein fluorescing in the deep red spectrum. As red light is less absorbed by tissues, this opens the way for new biosensors designed for in-vivo imaging.

### **Oliver Griesbeck, Max Planck Institute, Munich**

He has developed a new series of calcium-sensitive biosensors fast enough to monitor the rapid changes in intracellular calcium associated with action potentials in neurons.

### **Viacheslav Nikolaev, Université de Würzburg**

He created a series of biosensors sensitive to intracellular signaling molecules (cyclic AMP and cyclic GMP) which play an important role as «second messengers» in various biological functions, such as the regulation of cardiac activity, secretion, neuronal response to neuromodulation...

### **Jin Zhang, The Johns Hopkins University School of Medicine, Baltimore**

There are approximately 500 different kinases encoded in the human genome, which intricately regulate many cellular activities. Jin Zhang created the first biosensor for a kinase activity (protein kinase A), a design that has been generalized for a number of other kinases.

### **Vasilis Ntziachristos, Technical University of Munich**

New methods will be presented which allow the detection of fluorescence in regions located deep inside a living animal.



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