

Sat. 8 September, 15:30-17:00, Room B: **Workshop W09**

### Science in School: Biodiversity and Evolution

**Motive:**

The main objective of this workshop is to provide a platform for high-school teachers, faculty members, researchers and students from all disciplines to discuss the concepts of biodiversity and evolution with their educational challenges and implications. What are the biochemical mechanisms underlying diversity? What led to the evolution of so many species? All these exciting topics will be discussed by a team of experts and interested participants. *The session will be held in Spanish with simultaneous translation into English.*

**Speakers:**

**Juli Peretó** **Evolution in school: the strategy of teaching the actuality of a theory**

**Pedro Jordano** **Biodiversity: its main components, and challenges for knowledge**

**Chairs:** Isabel Varela-Nieto and Miguel Castanho

**Panel discussion:** Javier Fernández-Portal, Gérard Cobut, Dolores Vega, Isabel Varela-Nieto, Miguel Castanho

**A joint activity of FEBS Education Committee, FEBS Science and Society Committee and SEBBM**

Sun. 9 September, 11:00-12:00, Auditorium: **Plenary PL15**

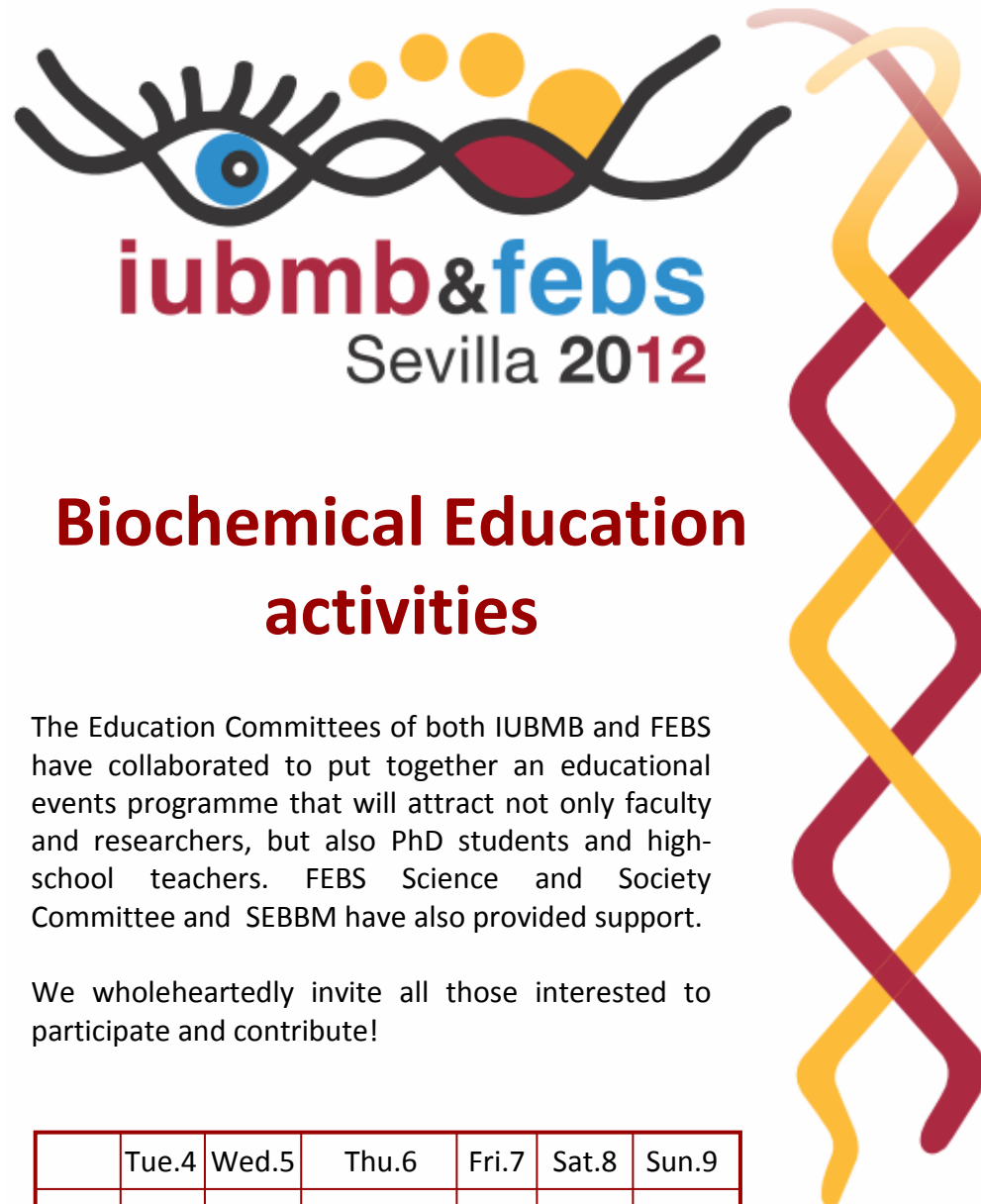
### Edward Wood Lecture

**Speaker:**

**Bruce Alberts** **Biology past and biology future: where have we been and where are we going?**

**Chair:** Miguel Castanho

**Laudator:** Susan Hamilton



## Biochemical Education activities

The Education Committees of both IUBMB and FEBS have collaborated to put together an educational events programme that will attract not only faculty and researchers, but also PhD students and high-school teachers. FEBS Science and Society Committee and SEBBM have also provided support.

We wholeheartedly invite all those interested to participate and contribute!

	Tue.4	Wed.5	Thu.6	Fri.7	Sat.8	Sun.9
11:00						PL15
13:30			posters 02			
15:30		W10	W11		W09	

Wed. 5 September, 15:30-17:00, Room B: **Workshop W10**

## **Teaching Molecular Evolution: a Unifying Principle of Biochemistry**

Motive:

Evolution is [one of] the big conceptual idea[s] that underpins modern biology. Understanding evolutionary processes from a molecular perspective is, likewise, one of the key explanatory frameworks that allow us to explore and make sense of complex biochemical processes.

Speakers:

### **Juli Peretó Teaching on the emergence of biochemical functions**

Although the importance of evolution in biochemical research is hardly obvious according to the contents of most of our textbooks, as biochemists we can confront historical contingency and chemical determinism in the configuration of biochemical functions through introducing the evolutionary perspective in our teaching.

### **Peter Schuster Evolving molecules, viroids and viruses - Theory, models and reality**

Systematic work on the measurement of distributions of sequences and fitness values in populations of molecules and viruses, which is based on the application of modern 'omics' techniques, provided experimental insight into fitness landscapes and is accessible now as a new and solid basis for an elaborate and quantitative molecular theory of evolution.

Chairs: Athel Cornish-Bowden and Keith Elliott

Panel discussion:

lead by chairpersons, together with the speakers and participants

A joint activity of IUBMB Committee on Education,  
FEBS Education Committee and FEBS Science and Society Committee.

Thu. 6 September, 13:30-15:30, Poster Area: **Posters 02**

## **Poster communications on Biochemical Education**

Thu. 6 September, 15:30-17:00, Room B: **Workshop W11**

## **Research into Effective Teaching Strategies: What Biochemistry is Learning from Other Sciences**

Motive:

The past decade has seen tertiary science educators begin to question in a serious way the efficacy of traditional teaching approaches. Moreover, there has been a deliberate effort to approach the teaching of science like a science. This session will consider the developments that have taken place in a range of disciplines, in the area of 'teaching scientifically' and implications for future teaching in biochemistry and molecular biology.

Speakers:

### **Helen Keates Clinical teaching and assessment in veterinary science: How effective are we?**

It is imperative that our students are both good 'learners' and good 'thinkers'. There has been a shift of focus from the process of teaching clinical students to the assessment of outcomes. New graduates need to have moved well beyond knowing the facts to being able to apply knowledge efficiently in uncharted situations. The next level is to assess the success of the assessment – are we really measuring what we mean to?

### **Roy Tasker Research into practice: Visualisation of the molecular world for a deep understanding of biochemistry**

The chemical education research literature clearly demonstrates that most student misconceptions are due to an inability to visualize the dynamic 3-D structures and processes at the molecular level. The challenge is to develop learning designs informed by an evidence-based cognitive model for how we learn from multimedia visualizations.

Chairs: Susan Hamilton and Manuel João Costa

Panel discussion:

lead by chairpersons, together with the speakers and participants

A joint activity of IUBMB Committee on Education  
and FEBS Education Committee.