

## INTERDISCIPLINARY APPROACH AND CURRENT CHALLENGES IN SOFT MATTER SCIENCE

Soft matter science is an interdisciplinary field of research, attracting attention from chemists, physicists, biologists and engineers. In part, this appeal comes from the astounding properties of soft materials. Even weak stimuli may induce significant changes in behaviour due to softness and mesoscopic structuring of the material. While softness results from weak interactions between the constituents, mesoscopic structuring is often a consequence of spontaneous self-assembly into ordered arrangements much larger in size than the constituent molecules.

Modern materials science increasingly exploits these distinctive features for the design of new materials. Many of today's interesting systems have multiple components, various interfaces, and complex effective interactions. Understanding the synergy of these factors and their impact on materials properties presents a great scientific challenge. Advances in this respect hold the promise of creating novel materials with a level of functionality similar to that existing in nature.



Around Mittelwihr,  
France



## PROGRAMME:

The **SoMaS School 2011** aims to give attendees a broad exposure to fundamental concepts and recent advances in research of complex fluids and biological materials. The school integrates knowledge from physics, chemistry and materials science.

The central goal is to present the advantages of such an interdisciplinary approach and to discuss current challenges in soft matter science.

### The SoMaS School 2011 consists of:

- **Master classes**
- **Introductory courses**
  - soft matter physics
  - macromolecular chemistry
  - biomacromolecules and bioengineering
  - methods for surface analysis
- **Seminars on specific topics**
  - micromanipulation of membranes
  - precision macromolecular chemistry
  - rheology of soft matter systems
- **Intensive discussion during posters sessions**
- **Presentations about professional opportunities** after the PhD

## MASTER CLASSES:

These classes give **enthusiastic young researchers** the opportunity to expose their current research projects and future plans in soft matter science, during a round table discussion with two distinguished scientists,

**Prof. Tom Witten** and  
**Prof. Phil Pincus**.

These discussions will be held on the stage of the lecture hall with the participation of all attendees of the summer school, who will be invited to contribute to these discussions through questions and comments.

## GUESTS OF HONOR:



**Philip A. Pincus**  
Physics Department  
University of  
California Santa  
Barbara, USA



**Thomas A. Witten**  
James Franck Institute  
University of Chicago,  
USA



## LOCATION:

### Centre de Mittelwihr

16 rue du Bouxfof  
68630 Mittelwihr, France  
Tel: +33 (0)3 89 47 93 09  
[www.mittelwihr.com/english.html](http://www.mittelwihr.com/english.html)

### Duration of the summerschool:

Beginning: Sunday 10th July (afternoon)  
End: Friday 15th July (after lunch)

### Registration fee

(including accommodation)  
The participation fee is 150,- €

**Deadline for Registration:** June 1st, 2011

## CONTACT:

### Dr. Christelle Vergnat

IRTG Coordinator  
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## SCIENTIFIC COMMITTEE:

**J. Baschnagel**, Strasbourg, France  
**Philip Fincus**, Santa Barbara, USA  
**C. Marques**, Strasbourg, France  
**G. Reiter**, Freiburg, Germany  
**J. Ruhe**, Freiburg, Germany  
**Tomas Witten**, Chicago, USA

## PRIZES:

**All young researchers selected for the master classes** will be awarded by publication of their CV and project on the IRTG website together with a statement by Profs. Witten and Pincus regarding their contribution to the master classes and their potential in future research (in the form of a **letter of recommendation**).

Some of the participants may be offered a **post-doc position** at one of the Universities of the Rhine Valley.

Presenters of the **best posters** will be awarded by an invitation to the second master class on Wednesday afternoon.



## ORGANIZERS:

Pursuing the tradition of Soft Matter Science in the Rhine Valley by introducing the young generation of researchers to this field, the **International Research Training Group (IRTG)** „Soft Matter Science: Concepts for the Design of Functional Materials“ and the **School of Soft Matter Research of the Freiburg Institute for Advanced Studies (FRIAS)** organize a series of annual summer schools in Mittelwihr, Alsace/France.

### Further information and registration:

[www.softmattergraduate.uni-freiburg.de/somasschool2011](http://www.softmattergraduate.uni-freiburg.de/somasschool2011)



SoMaS  
**SCHOOL 2011**  
**SOFT MATTER**  
**SCIENCE**  
**ANNUAL**  
**SUMMER SCHOOL**  
**JULY 10–15, 2011**



**FRIAS**

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SOFT MATTER RESEARCH