

# WORKSHOP

## “STRUCTURAL GLYCOSCIENCE: METHODS AND INSTRUMENTATION”

GRENOBLE, 29<sup>th</sup> JUNE and 1<sup>st</sup> JULY 2010

[www.ibs.fr/structural-glycoscience](http://www.ibs.fr/structural-glycoscience)

or

[www.esrf.eu/events/conferences](http://www.esrf.eu/events/conferences)

Glycoscience is a rapidly expanding and exciting field that is relevant to many areas of chemistry, biology and medicine. Glycans structure is of a direct importance since they are key structural elements in cell and in signalling events on their surface.

The workshop will train young scientists, from a chemistry or biology background, in the most up-to-date approaches for determining the structural and dynamic properties of carbohydrates, glycan binding receptors, analysis of their complexes and notably in the context of immunity and host-pathogen interaction.

This workshop will be validated by 3 ECTS by the EDCSV doctoral school. Some fellowships are available for students.



INSTITUT DE BIOLOGIE STRUCTURALE (IBS)



ESRF/ILL

### Confirmed Speakers

Pr. FRANCK FIESCHI *IBS (Grenoble, France)*

Dr. ERIC SAMAIN *CERMAV (Grenoble, France)*

Pr. STEVE PERKINS *University College London (London, UK)*

Dr. MATTHEW BOWLER *ESRF (Grenoble, France)*

Pr. JESÚS JIMÉNEZ BARBERO *CIB (Madrid, Spain)*

Dr. TREVOR FORSYTH *ILL (Grenoble, France)*

Dr. SERGE PEREZ *ESRF (Grenoble, France)*

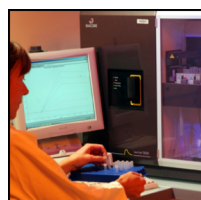
Dr. BRUCE TURNBULL *University of Leeds (Leeds, UK)*

Dr. ANNE IMBERTY *CERMAV (Grenoble, France)*

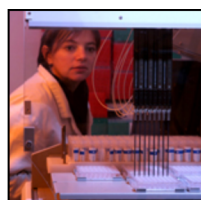
Dr. NICOLE THIELENS *IBS (Grenoble, France)*

Dr. GUY SCHOEHN *UVHCI (Grenoble, France)*

Dr. HUGUES LORTAT-JACOB *IBS (Grenoble, France)*



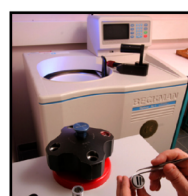
Surface Plasmon  
Resonance



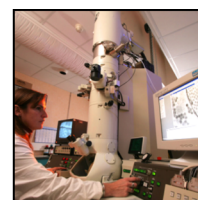
Crystallisation



NMR 800MHz



Analytical  
Ultracentrifugation



Electron Microscopy

Organizing comitee:  
Franck Fieschi,  
Anne Imberty,  
Serge Perez



[www.carmusys.iq.csic.es](http://www.carmusys.iq.csic.es)

“Carbohydrated Multivalent Systems  
as Tools to Study Pathogen  
Interactions with DC-SIGN”



<http://www.egsf.org/>

« *ESF EuroGlycoforum  
Research Network program* »

Contact and Information:  
Myriam Dhez  
[myriam.dhez@esrf.eu](mailto:myriam.dhez@esrf.eu)

# Workshop Program

Tuesday 29<sup>th</sup> June 2010

Morning: Arrival of participants.  
Registration from 10h to 12h.

*Lunch at the ESRF restaurant*

13h45 Welcome by local university & research institutes colleagues

Introduction by the Organisers

14h15 *Dr. Serge Pérez* -Presentation of the scientific site & platforms : The European Photon and Neutron Scientific Campus. Opportunity for structural glycobiology.

15h00 *Prof. Franck Fieschi* - Over-expression & purification of recombinant lectins.

*Tea Break.*

16h15 *Dr. Eric Samain* - Expression and purification of recombinant glycan

17h00 *Prof. Steve Perkins* - Solution studies: Analytical ultracentrifugation, SAXS, SANS.

*Dinner*

## Wednesday 30<sup>th</sup> June 2010

8h30 *Dr. Matthew Bowler* - High throughput protein crystallography at synchrotron facilities

9h30 *Prof. Jesús Jiménez Barbero* - NMR of oligosaccharide and protein oligosaccharide complexes

*Coffee Break*

10h45 *Dr. Nicole Thielens* - Protein-sugar interaction: Surface Plasmon Resonance

11h30 *Dr. Bruce Turnbull* - Protein-sugar interactions: IsoThermal Micro-Calorimetry

*Lunch at the ESRF restaurant*

14h00 *Dr. Trevor Forsyth* -Application of neutron diffraction to glycoscience

15h00 *Dr. Serge Pérez & Dr. Anne Imberty* - Molecular Modeling of Bioactive Oligosaccharides and their Interactions with Proteins.

*Tea Break*

16h15 *Dr. Guy Schoehn* - Application of Transmission Electron Microscopy to virology

Closing Lecture

17h00 *Dr. Hugues Lortat Jacob* - HIV-1 entry inhibition by a synthetic CD4-Heparan glycoconjugate

*Banquet*

**Thursday 1th July 2010**

**Practicals  
(visits and/or demonstration)**

Practicals are organized for 40 participants in two parallel sessions : beamlines at the ESRF/ILL, and electron microscopy and surface plasmon resonance at the IBS. Attendees will have to choose 2 activities among the 5 proposed.

**ESRF/ILL:**

*Participants will attend a general presentation followed by a visit of one macromolecular beamlines:*

- 1) biocrystallography*
- 2) bio-saxs*
- 3) neutron scattering (to be confirmed)*

**IBS:**

*Transmission Electron Microscopy*

*4) Participants will participate in a sample preparation and observation using TEM*  
*Surface plasmon resonance*

*5) Participants will participate in a set of interaction tests by SPR*

8h30 -10h00. Group 1 - ESRF+ILL (Beam Lines) / Group 2 - IBS (TEM & SPR)

*Coffee Break / Site Change*

10h30-12h00 : Group 2 - ESRF+ILL (Beam Lines) / Group 1 - IBS (TEM & SPR)

*Lunch at the ESRF restaurant*

14h : Delivering Certificates of attendance + Group photo.

15h : Concluding remarks.

End



[www.carmusys.iiq.csic.es](http://www.carmusys.iiq.csic.es)



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# WORKSHOP

## “STRUCTURAL GLYCOSCIENCE: METHODS AND INSTRUMENTATION”

### Registration Form

- Number of participant is limited
- The organisation will cover the workshop fee (including lunches, banquet, tea & coffe breaks)).
- Some fellowship for students are available

First Name : ..... Name : .....

Age: ..... Nationality : ..... Organization : .....

Date of birth:.....Place of Birth:.....

Address : .....

Postal code: .....Location: .....Country : .....

Email : ..... Tel: ..... Fax .....

Order of preference for practicals (use numbers from program) :

I want to participate to the first dinner : ☐ Yes ☐ No

I want to participate to the Banquet : ☐ Yes ☐ No

### Include with the application the following documents:

- small curriculum vitae
- a letter of interest for the workshop

This form and the corresponding documents should be sent via e-mail before June 4th to:

Myriam Dhez : [myriam.dhez@esrf.eu](mailto:myriam.dhez@esrf.eu)

Other possible contacts are:

Dr. David Jesús Parras Guijarro (CSIC): [david.parras@iiq.csic.es](mailto:david.parras@iiq.csic.es)

Prof. Serge Perez (University Joseph Fourier): [serge.perez@cermav.cnrs.fr](mailto:serge.perez@cermav.cnrs.fr)

Dr. Franck Fieschi (University Joseph Fourier): [franck.fieschi@ibs.fr](mailto:franck.fieschi@ibs.fr)