

Preliminary programme  
Universidad Internacional de Andalucía (UNIA) – Biomedicine 2012  
**Systems biology of T cells:  
clinical, experimental and theoretical approaches**

Organisers: **Balbino Alarcón** (CBM Severo Ochoa, Madrid, Spain),  
**Jose Faro** (Department of Biochemistry, Genetics and Immunology, Universidad de Vigo, Spain) and  
**Carmen Molina-París** (School of Mathematics, University of Leeds, UK)

21-24 October 2012

**Sunday 21st of October 2012**

- 20:30 Get-together dinner at the Cafetería of the Sede Antonio Machado.

**Monday 22nd of October 2012**

- 09:10-09:25 **Welcome - Opening** (Carmen Molina-París)
- **Session 1. Thymocyte development (Chair: Antonio Freitas)**
  - 09:25 **Ellen Robey**, Visualising thymic selection in situ.
  - 10:00 **Bruno Kyewski**, Generating intrathymic self-antigen diversity for tolerance induction.
  - 10:35 **Marisa Toribio**, Notch and IL-7R interplay in T cell development and leukemia.
- 11:10-11:45 **Coffee break**
- **Session 2. TCR and coreceptor determination of thymic selection (Chair: Michael Bevan)**
  - 11:45 **Al Singer**, CD4/CD8 coreceptors determine the specificity and consequences of thymic selection.
  - 12:20 **Ed Palmer**, Affinity thresholds in T cell tolerance: causes and effects.
- 12:55-15:00 **Lunch**
- **Session 3. T cell tolerance and regulation (Chair: Jose Faro)**
  - 15:00 **Michael Bevan**, Regulating the response of naive and memory T cells to different forms of antigen presentation.
  - 15:35 **Luis Graça**, Quantitative aspects of immune regulation.
  - 16:10 Short talk. (Pamela Fink)
- 16:30-17:00 **Coffee break**
- **Session 4. T cell homeostasis and differentiation (Chair: Balbino Alarcón)**
  - 17:00 **Antonio Freitas**, Quorum sensing in CD4<sup>+</sup> T cell homeostasis.
  - 17:35 **Zvi Grossmann**, Dynamic tuning of lymphocytes: physiological basis, mechanisms and function.
  - 18:10 **Martin Meier-Schellersheim**, Modelling spatial aspects of cellular behaviour.
  - 18:45 **Rob de Boer**, Quantifying T lymphocyte turnover.
- 19:20 **Poster session.**
- 20:15 **Dinner**

## Tuesday 23rd of October 2012

- **Session 5a. Mechanisms of TCR-pMHC binding and signalling (Chair: Ed Palmer)**
  - 09:00 **Veronika Zarnitsyna**, Reading antigen recognition codes during TCR triggering.
  - 09:35 **Wolfgang Schamel**, Sensing the affinity of ligands by multivalent ligand-binding to the TCR.
  - 10:10 **Thomas Höfer**, Modelling TCR-pMHC binding: early signalling events (TBC).
- 10:45-11:15 **Coffee break**
- **Session 5b. Mechanisms of TCR-pMHC binding and signalling (Chair: Ed Palmer)**
  - 11:15 **Carmen Molina-París**, TCR-CD3 complex: oligomers, allostery, ligand binding and T cell responses.
  - 11:50 **Balbino Alarcón**, Cooperativity in the TCR deduced from pMHC tetramer binding data.
  - 12:25 Short talk. (D. Singer)
  - 12:45 Short talk. (Michal Polonsky)
- 13:05-15:00 **Lunch**
- 15:00 **Guided tour of Baeza**
- 18:00 **Arup Chakraborty**, How to hit HIV where it hurts. **Recorded talk and questions over the phone???**
- 18:35 Short talk. (Derek Macallan – Predictors of in vivo human T cell turnover in HIV infection.)
- 18:55 Short talk. (Dipankar Nandi – Infection-induced thymic atrophy.)
- 19:15 **Poster session.**
- 20:15 **Dinner**

## Wednesday 24th of October 2012

- 09:00 **Jose Faro**, Measuring and estimating TCR diversity.
- 09:35 Short talk (Leila Perié – Beyond TCR affinity)
- 09:55 Short talk (Isabel Mérida)
- 10:15 Roundtable for general discussion (Ed Palmer) and closing remarks (Carmen Molina-París).
- 12:00 Bus departure to Madrid (lunch bag included).
- 13:00 **Lunch**