

# Spatio-temporal dynamics challenges from fluorescence data.

## July 13-16<sup>th</sup> 2010. Warwick University, UK.

Organised by Nigel Burroughs, Till Bretschneider and Kurt Anderson

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### **Tuesday July 13<sup>th</sup>. Lecture Room MS.02, Mathematics Institute, Zeeman Building**

10.00 Registration & coffee

11.15 Welcome.

11.30 Dan Axelrod, University of Michigan – Visualising submicroscopic dynamics in cells: polarized TIRF and membrane deformation during secretion

12.30 Lunch (buffet)

#### *In vivo imaging*

1.45 Paul Barber, University of Oxford – Automated high-throughput FLIM for the analysis of protein-protein interactions

2.45 Vladimir Ermolayev, Helmholtz Zentrum München - Non-Invasive Imaging for Cancer Diagnostics and Treatment

3.45-4.15 Tea

4.15 Ernst Stelzer, EMBL Heidelberg – Fluorescence microscopy based on spatially modulated light sheets reduces phototoxic effects and estimates scattering properties

5.15 Discussion over wine

6.45 Bus to Leamington Spa, Emperors Restaurant (Chinese).

10.00 Return bus

This workshop is part of the symposium year in Complexity and Systems Biology, University of Warwick, funded by EPSRC.  
Symposium: [http://www2.warwick.ac.uk/fac/sci/math/research/events/2009\\_2010/symposium](http://www2.warwick.ac.uk/fac/sci/math/research/events/2009_2010/symposium)

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**Wednesday July 14<sup>th</sup> . Lecture Room MS.02, Mathematics Institute, Zeeman Building**

### *Image processing and information extraction*

9.30 Gaudenz Danuser, Harvard Medical School – Forces and signals at the leading edge

10.30 Contributed talk. Marjan Ashtari, Brunel University - Machine Learning to Model and Understand Live Cell Time-Lapse Sequences

11.00 Tea

11.30 Michael Unser, EPFL - Advanced signal processing for fluorescence microscopy

12.30 Contributed talk. Rizwan Ali, TU Dresden – Live Cell Imaging of Intracellular Distribution of Benzo(a)pyrene

1.00 Lunch (buffet)

### *Super resolution imaging*

2.00 George Patterson, NIH Bethesda – Development of fluorescent proteins for single molecular localization techniques

3.00 Christian Eggeling, MPI Gottingen – Observing the nanoscale Far-Field STED Microscopy

4.00 Discussion over tea

6.30 Bus to Coombe Abbey, Conference Dinner (Booking essential).

Dress code (no jeans, no sneakers).

10.00 Return Bus

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## July 13-16<sup>th</sup> 2010. Warwick University, UK.

**Thursday July 15th. Lecture Room MS.02, Mathematics Institute, Zeeman Building**

*Single particle interactions and kinetics*

10.00 Sandy Simon, Rockefeller – Dynamics of proteins in macromolecular machines

11.00 Tea

11.30 Xavier Darzacq, IBENS, Paris - Time resolved gene expression and Regulation of transcription factors nuclear mobility

12.30 Contributed talk. Andrew McAinsh, Warwick – Chromosome navigation: finding the way to the spindle equator

1.00 Lunch (curry)

2.00 Gerhard Schuetz, Biophysics Institute, Linz – Addressing plasma membrane nanostructures by single molecular techniques

3.00 Justin Molloy, NIMR – TIRF microscopy of single molecules inside live cells

4.00 Discussion over Tea

4.30 Karsten Rippe, Heidelberg – Dissecting chromatin dynamics and epigenetic networks in living cells by fluorescence fluctuation microscopy

5.45 Bus to pub, canal walk and dinner. *The Waterman*.

9.30 Return bus.

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Friday July 16th. Lecture Room **B3.03**, Mathematics Institute, Zeeman Building

*High-throughput methods and sub cellular structure classification*

9.30 Zvi Kam, Weizmann Institute of Science – Multi-parametric quantification of cell images: Analysis pipeline, and data mining platform

10.30 Contributed talk. Katrin Huebner, Bioquant - Correlating cell morphology dynamics with fluorescent intensities of intracellular calcium in single human neutrophils

11.00 Tea and coffee

11.30 Robert Murphy, Carnegie Mellon University – Proteome-Scale Analysis and Modeling of Subcellular Patterns for Integration with Systems Biology

12.30 Lunch (chilli)

2.00 End.