THE COMPANY OF Biologists WORKSHOPS

Stochasticity in Cell and Developmental Processes

Workshop Programme

17th – 20th October 2010
Cumberland Lodge, Berkshire, UK

Stochasticity in Cell and Developmental Processes

Scientific Organisers: James Briscoe and Alfonso Martinez Arias

PROGRAMME

Sunday 17th October 2010

18:45-19:15	Pre-dinner drinks - *Drawing Room*
19:15-20:45	Dinner - *Cumberland Room*
20:45-21:00	Chairman's remarks - *Cumberland Room*
21:00-22:00	Opening lecture - *Cumberland Room* **Alexander van Oudenaarden** "Stochastic cell fate decisions"

Monday 18th October 2010

Session Ia: Signalling and transcription
Co-chair: **Josh Brickman**

08:00-08:55	Breakfast - *Cumberland Room*
	Sessions to be held in the *Flitcroft Room*
08:55-09:00	Introduction to session
09:00-09:40	**Jeremy Gunawardena** "A dose-response strategy for analysing cell-to-cell variation in mammalian signaling"
09:40-10:20	**Suzanne Gaudet** "Variability in the cellular response to death receptor ligands"
10:20-11:00	**Jonathan Chubb** "Transcriptional stability along cell lineages"
11:00-11:30	Group Photo Coffee - *Drawing Room*
11:30-12:10	**Attila Becskei** "Stochastic bimodal expression due to epigenetic circuits anchored to the chromosome"
12:10-12:50	**Mike White** "The role of stochastic transcription in the timing of cellular oscillatory processes"
12:50-13:30	**Andy Oates** "Oscillations of gene expression and pattern formation during somitogenesis"
13:30-14:30	Lunch - *Cumberland Room*

Session Ib: The fabric of the cell
Co-chair: **Suzanne Gaudet**

14:55-15:00	Introduction to session
15:00-15:40	**Buzz Baum** “Dynamic filopodia induce intermittent signalling to establish and refine epithelial patterning”
15:40-16:20	**Thomas Lecuit** “Cytoskeletal dynamics and cell adhesion during coordinated cell movements and morphogenesis”
16:20-16:50	Tea - *Drawing Room*
16:50-17:30	**François Nédélec** “A model of microtubule organization in the mitotic spindle”
17:30-18:10	**Ray Goldstein** “Stochastic dynamics and synchronization of eukaryotic flagella”
19:30-20:00	Pre-dinner drinks - *Drawing Room*
20:00	Dinner - *Prince Christian Room*

Tuesday 19th October 2010

Session IIa: Cell fates I
Co-chair: **Jeremy Gunawardena**

08:00-08:55	Breakfast - *Cumberland Room*
	Sessions to be held in the *Flitcroft Room*
08:55-09:00	Introduction to session
09:00-09:40	**Brian Hendrich** “Transcription and lineage commitment in embryonic stem cells”
09:40-10:20	**Josh Brickman** “Lineage primed endodermal states in embryonic stem cells”
10:20-11:00	**Sally Lowell** “Unpredictability and variability during ES cell differentiation”
11:00-11:30	Coffee - *Drawing Room*
11:30-12:10	**Shahragim Tajbakhsh** “Making sense of heterogeneities in stem cells”
12:10-12:50	**Takashi Hiiragi** “Stochastic processes in the development of pluripotency in vivo”
13:00-14:00	Lunch - *Cumberland Room*

Session IIb: Cell fates II
Co-chair: **Sally Lowell**

14:25-14:30	Introduction to session
14:30-15:10	**Jordi Garcia-Ojalvo** “Processing and integration of information under noise in signalling networks”
15:10-15:50	**Chris Thompson** “Cell fate bias and stochastic differentiation during *Dictyostelium* development”
15:50-16:20	Tea - *Drawing Room*
16:20-17:00	**Ben Simons** “Patterns of stem and progenitor cell fate in adult tissues”
17:00-17:40	**Timm Schroeder** “Tracking cell fate decisions in the hematopoietic system”
19:00-19:30	Pre-dinner drinks - *Drawing Room*
19:30	Dinner - *Cumberland Room*

Wednesday 20th October 2010

Session III: The tissue level
Co-chair: **James Briscoe**

07:30-08:25	Breakfast - *Cumberland Room*
	Sessions to be held in the *Flitcroft Room*
08:55-09:00	Introduction to session
07:30-08:25	Breakfast served in the Cumberland Room
08:25-08:30	Introduction to session in the Flitcroft Room
08:30-09:10	**Dagmar Iber** "Vertebrate limb bud development towards a comprehensive, spatio-temporal computational model of organogenesis"
09:10-09:40	Coffee - *Drawing Room*
09:40-10:20	**Jim Smith** "How precise is morphogen gradient interpretation?"
10:20-11:00	**James Briscoe** "The gene regulatory logic for reading the Sonic Hedgehog morphogen gradient in the neural tube"
11:00-11:40	**Marcos Gonzalez-Gaitan** "Spatial and temporal control of growth in *Drosophila* imaginal discs"
11:40-12:00	Closing remarks
12:00-13:00	Lunch - *Cumberland Room*
	Depart

Attendee's list

Jane Alfred	Development
Buzz Baum	University College London
Attila Becskei	University of Zurich
Josh Brickman	University of Edinburgh
James Briscoe	NIMR
Fernando Casares	CABD Seville
Jonathan Chubb	University of Dundee
Michael Cohen	NIMR
Joaquin de Navascues	University of Cambridge
Jordi Garcia-Ojalvo	Technical University of Catalonia
Suzanne Gaudet	Dana-Farber Cancer Institute Harvard Medical School
Ray Goldstein	University of Cambridge
Marcos Gonzalez-Gaitan	University of Geneva
Seema Grewal	Development
Petra Gross	Journal of Cell Science
Jeremy Gunawardena	Harvard Medical School
Brian Hendrich	Wellcome Trust Centre for Stem Cell Research
Takashi Hiiragi	Max Planck Institute
Dagmar Iber	ETH Zurich
Thomas Lecuit	IBDML-Marseille
Sally Lowell	MRC Centre for Regenerative Medicine
Alfonso Martinez-Arias	University of Cambridge
Claire Moulton	The Company of Biologists
Silvia Munoz Descalzo	University of Cambridge
François Nédélec	EMBL
Andy Oates	Max Planck Institute for Cell Biology and Genetics
Timm Schroeder	Helmholtz Zentrum München
Ben Simons	University of Cambridge
Jim Smith	NIMR
Shahragim Tajbakhsh	Institut Pasteur
Chris Thompson	University of Manchester
Alexander van Oudenaarden	MIT
Mike White	University of Liverpool
Vivian Siegel	Disease, Models & Mechanisms