
SEB Main Meeting Caterbury 2006

Monday 3 April 2006

A1. Ion Sensing and Ion Regulation

Organised by **N. Bury (Kings College)**, **S. Webster (University of Wales Bangor)** and **R. Wilson (University of Exeter)**

Chair: Nic Bury and Rod Wilson

09:15 Dr. Gordon Cramb (University of St Andrews)

Salinity acclimation and Na, K-ATPase expression in the Euryhaline Bullshark *Carcharhinus leucas* [A1.1]

09:40 Ms. Josi Taylor (University of Miami)

Intestinal Cl-/HCO₃⁻ exchange in fish: Implications for postprandial hydromineral and acid-base balance [A1.2]

10:05 Ms. Amelia Grant (University of British Columbia)

Na⁺/K⁺ ATPase α1a and α1b isoform expression and activity in juvenile Chinook salmon [A1.3]

10:30 Dr. Rod Wilson (University of Exeter)

Differential sodium uptake kinetics in freshwater Atlantic salmon juveniles destined for either migratory or residential life styles [A1.4]

10:55 Tea

Chair: Nic Bury and Rod Wilson

11:30 Dr. Martin Cann (Durham University)

Inorganic carbon regulation of adenylyl cyclase [A1.5]

11:55 Dr. Weiqun Lu (University of Manchester)

Urotensin II: Ancient hormone with new functions in vertebrate body fluid regulation [A1.6]

12:20 Dr. M.C. Subhash Peter (University of Kerala)

Ionoregulatory and interrenal responses in hyper- and hypothyroid tilapia (*Oreochromis mossambicus*) to thyroid hormones [A1.7]

12:45 Lunch

12:45 Osmoregulation group AGM

Chair: Rod Wilson and Nic Bury

14:00 Dr. Nicolas Bury (King's College London)

Corticosteroid receptor signalling pathways in teleost fish [A1.8]

14:25 Miss Hélène Ollivier (Unité de Physiologie Comparée et Intégrative)

Effect of hyposmotic stress on ATP release in isolated turbot (*Scophthalmus maximus*) hepatocytes [A1.9]

14:50 Dr. Christelle Goanvec (Unité de Physiologie Comparée et Intégrative)

Effects of a contamination by the dissolved fraction of a heavy fuel oil on hydromineral balance in turbot [A1.10]

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15:15 Prof. Gudrun De Boeck (University of Antwerp)
Disruption of osmo- and ionoregulation in spiny dogfish under metal exposure: role of urea [A1.11]

A3. Tribute to Graham Shelton (1930–2004)

Organised by D. Jones (University of British Columbia)

Chair: W.K. Milsom

09:00 Prof. David Randall (City University of Hong Kong)
Responses of fish to hypoxia [A3.1]

09:30 Dr. Tommy Tsui (McMaster University)
Mitochondrial uncoupling in fish [A3.2]

10:00 Dr. David Jones (University of British Columbia)
Varanid cardiac dynamics: "The balloon goes up now!" [A3.3]

10:30 Tea

11:00 Mr. Marvin Braun (University of Cambridge)
Anoxic survival in *Helix aspersa* [A3.4]

11:30 Prof. Pat Butler (University of Birmingham)
A year in the life of barnacle geese: the relationship between body temperature, body composition and resting oxygen consumption [A3.5]

12:00 Lunch

Chair: E.W. Taylor

13:30 Dr. Julian Metcalfe (CEFAS)
Cod in a sweat: from physiology to behaviour and back again [A3.6]

14:00 Dr. Chris Wood (McMaster University)
Physiological consequences of feeding in sharks [A3.7]

14:30 Dr. Jeff Richards (The University of British Columbia)
Matching supply and demand: integrating energetics from the genome to the organism [A3.8]

15:00 Tea

15:30 W.W. Burggren (University of North Texas)
Cardio-respiratory lessons from Graham Shelton - "Be suspicious of straight lines" [A3.9]

16:00 Dr. Brian Bagatto (University of Akron)
Chronic hypoxia in zebrafish: an integrative approach to studying plasticity [A3.10]

19:00 Dinner :Falstaff Hotel

A5. Perspectives and Developments in Fish Swimming and Bird Flight – A Tribute to John Videler

Organised by E. Stamhuis (University of Groningen) and U. Muller (Wageningen University)

Chair: Ulrike Muller

09:00 Opening

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- 09:10 Prof. Paul Webb (University of Michigan)**
Swimming in an unsteady world [A5.1]
- 09:30 Prof. Lee A. Fuiman (University of Texas)**
Limits of the viscous and inertial hydrodynamic regimes for fish larvae [A5.2]
- 09:50 Dr. Ulrike Muller (Wageningen University)**
An un-momentous start in life: what stops fish larvae from coasting? [A5.3]
- 10:10 Coffee/Tea**
- 10:40 Prof. Johan van Leeuwen (Wageningen University)**
The functional design of swimming muscles in fish [A5.4]
- 11:00 Dr. Talitha van der Meulen (Wageningen University)**
Decreased muscle activity alters development of myotomal muscle [A5.5]
- 11:20 Prof. Melina Hale (University of Chicago)**
Cells, circuits and swimming: examining the neural control and evolution of startle behaviour in fishes [A5.6]
- 11:40 Dr. Paolo Domenici (CNR-IAMC Oristano Italy)**
Kinematic, directional and temporal patterns in fish escape responses [A5.7]
- 12:00 Lunch**
- Chair: Eize Stamhuis**
- 13:30 Prof. Anders Hedenström (University of Lund)**
Vortex wakes generated by birds during free flight in a wind tunnel [A5.8]
- 13:50 Dr. Ezie Stamhuis (University of Groningen)**
Flapping Wings: flow patterns and lift enhancement [A5.9]
- 14:10 Dr. Adrian Thomas (Oxford University)**
Free-flight aerodynamics of birds from onboard cameras and instrumentation [A5.10]
- 14:30 Dr. Richard Bonser (University of Reading)**
The mechanical behaviour of birds' plumage [A5.11]
- 14:50 Coffee/Tea**
- 15:20 Dr. Charles Bishop (University of Wales Bangor)**
Two wings good, two legs bad: The heart rate and oxygen consumption relationships of flying birds [A5.12]
- 15:40 Dr. Sophia Engel (Max Planck Institute for Ornithology)**
In search of the metabolic power curve [A5.13]
- 16:00 Dr. Graham Taylor (Oxford University)**
System identification of avian flight dynamics and control [A5.14]
- 16:20 Dr. Jim Usherwood (The Royal Veterinary College)**
Aerodynamics and energetics of ostrich locomotion. Why is locomotion costly? [A5.15]
- 16:40 Dr. John Videler (closing remarks)**
The Next Challenge: understanding bird flight and fish swimming at the species level [A5.16]
- 17:00 End of Session**

C5./P7 Genomics and Systems Biology

Organised by C. Grierson (University of Bristol)

Sponsored by: BBSRC

Monday 3 April 2006

09:00 **Opening Remarks**

Chair: **Wilhelm Gruissem**

09:05 **Key Speaker Mark Stitt (Max Planck Institute of Molecular Plant Physiology)**
Multilevel genomics analysis of carbon responses in arabidopsis [C5.3]

09:50 **Sue Bosch (University of Stellenbosch)**
Multi-level profiling of trehalose metabolism in sugarcane tissues with differing sucrose levels [C5.4]

10:10 **Alex Marshall (University of Nottingham)**
Metabolic networks of Tea (*Camellia sinensis*) [C5.5]

10:30 **Coffee/Tea**

Chair: **Mark Stitt**

11:00 **Key Speaker Wilhelm Gruissem (ETH Zurich)**
Reverse engineering of metabolic pathways using sparse GGM [C5.6]

11:45 **Patrick Armengaud (University of Glasgow)**
Systems biology of potassium nutrition in *Arabidopsis thaliana* [C5.7]

12:05 **Lunch**

12:15 **SEB AGM**

Chair: **Liisa Holm**

13:30 **Key Speaker Pam Green (University of Delaware)**
Elucidating the small RNA component of the transcriptome [C5.8]

14:15 **Adam Price (Aberdeen University)**
A three gene model for arsenate tolerance in rice [C5.9]

14:35 **Murray Grant (Imperial College)**
Towards a systems approach to plant defense responses [C5.10]

14:55 **Coffee/Tea**

Chair: **Pam Green**

15:30 **Key Speaker Liisa Holm (Helsinki)**
Protein interaction networks [C5.11]

16:15 **Philip White (Warwick HRI)**
Ionomics of the Brassicaceae [C5.12]

16:35 **Howard Griffiths (University of Cambridge)**
Multidimensional isotopes: integrating outputs from biological systems [C5.13]

16:55 **End of Day 1**

17:10 **Bidder and Woolhouse Lectures**

P4. Compartmentation (Tissue, Plastid, Organelle)

Organised by R. Leigh (University of Cambridge), K. Pyke (University of Nottingham) and P. White (Horticultural Research International)

Chair: **Prof. Roger A. Leigh**

Monday 3 April 2006

- 08:30** **Welcome**
- 08:35** **Dr. Enrique Lopez-Juez (Royal Holloway, University of London)**
Plastid and chloroplast biogenesis: recent insights [P4.1]
- 09:05** **Prof. John C. Gray (University of Cambridge)**
Coordinating chloroplast, mitochondrial and nuclear gene expression [P4.2]
- 09:35** **Dr. Imogen Sparkes (Oxford Brookes University)**
How are plant peroxisomes synthesised? [P4.3]
- 10:05** **Break**
- 10:30** **Aaron O. Richardson (Indiana University)**
Frequent horizontal gene transfer in plant mitochondria [P4.4]
- 11:00** **Dr. David Logan (University of St Andrews)**
The mitochondrial compartment [P4.5]
- 11:30** **Dr. Guy Hanke (Osaka University)**
Post genomic studies on ferredoxin and ferredoxin: NADP(H) oxidoreductase: Functional differentiation of iso-proteins, and detection of new interactions [P4.6]
- 11:45** **Dr. John Lunn (Max Planck Institute of Molecular Plant Physiology)**
Compartmentation of plant metabolism [P4.7]
- 12:15** **Mr. James Graham (University of Oxford)**
Mitochondrial glycolysis in plants [P4.8]
- 12:30** **Miss Sophie Janacek (University of Cambridge)**
Identifying roles for photosynthesis in defined cells type of C3 plants [P4.9]
- 12:45** **Dr. Janneke Balk (University of Cambridge)**
Compartmentalization of iron-sulphur cluster biogenesis in plants [P4.10]
- 12:45** **Lunch**
- 14:00** **Prof. Alice Cheung (University of Massachusetts)**
Structural and functional compartmentalization in elongating pollen tubes [P4.11]
- 14:30** **Miss Helen Rushton (Oxford University)**
An unbiased approach to the question of specificity in calcium signalling [P4.12]
- 14:45** **Prof. Francis Marty (Univ. Bourgogne)**
Vacuoles and other acidic compartments in plants [P4.13]
- 15:15** **Dr. Enrico Martinoia (University of Zurich)**
The role of the vacuole in cellular compartmentalization [P4.14]
- 15:45** **Mr. Maciej Pasternak (University of Heidelberg)**
Compartmentation of glutathione biosynthesis between plastids and cytosol in *Arabidopsis thaliana* [P4.15]

JS. Water Transport

Organised by **M. Grosell (University of Miami)**, **D. Evans (Oxford Brookes University)** and **A. Tomos (Coleg Prifysgol Gogledd Cymru)**

Sponsored by: **Company of Biologists**

Chair: **Deri Tomos**

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09:00 **Welcome and Introduction**

09:10 **Prof. Felix Franks (BioUpdate Foundation)**

Physics and chemistry of adaptation to water stress [JS.1]

10:00 **Prof. Per Kjellbom (Lund University)**

Plant aquaporins – expression profiling, proteomics, substrate specificity and gating [JS.2]

10:50 **Coffee**

11:20 **Dr. Christophe Maurel (CNRS-INRA)**

Aquaporins and regulation of root water uptake [JS.3]

12:10 **Prof. Ernst Steudle (University of Bayreuth)**

Gating of aquaporin activity of plant cells: consequences at the cell, tissue and organ levels [JS.4]

13:00 **Lunch**

Chair: **Christophe Maurel**

14:00 **Prof. Thierry Simonneau (INRA, Montpellier)**

The integrated role of root aquaporins [JS.5]

14:50 **Dr. Henk Van As (Wageningen University and Wageningen NMR Centre)**

MRI of water transport in intact plants: characteristics and dynamics [JS.6]

15:40 **Tea**

16:10 **Dr. Jeremy Pritchard (University of Birmingham)**

Water and solute flow through the phloem system [JS.7]

17:00 **Dr. Wieland Fricke (University of Paisley)**

Water transport in the growing barley leaf [JS.8]

17:50 **End of part 1. Session continues Tuesday**

Tuesday 4 April 2006

A2. Evolutionary Physiology

Organised by **M. Berenbrink (Liverpool University)**, **A. Bennett (University of California)**, and **T. Wang (University of Aarhus)**

Organised on behalf of the SEB Animal Respiration Group

Chair: Michael Berenbrink

08:30 Prof. Albert Bennett (University of California Irvine)
Studying physiology from an evolutionary perspective [A2.1]

09:00 Dr. Thorsten Burmester (University of Mainz)
Haemo-, Myo-, Neuro- and Cytoglobins: The evolution of vertebrate respiratory proteins [A2.2]

09:30 Prof. C.-H. Christina Cheng (University of Illinois)
Old proteins and DNA, new tricks: Molecular evolution of antifreeze proteins in polar fishes [A2.3]

10:00 Tea or Coffee

10:30 Prof. Michael Conlon (United Arab Emirates University)
Insights from comparative genomics into the molecular and functional evolution of neuroendocrine peptides [A2.4]

Chair: Tobias Wang

11:00 Prof. Albert Bennett (University of California, Irvine)
Using experimental evolution to study temperature adaptation [A2.5]

12:00 Lunch

Chair: Al Bennett

13:00 Prof. Steven Perry (University of Bonn)
Method for reconstructing the respiratory system of extinct animals: Sauropod dinosaurs as a case in point [A2.6]

13:30 Dr. Bieke Vanhooydonck (University of Antwerp)
Evolutionary correlates of locomotor performance in lizards [A2.7]

14:30 Dr. Michael Berenbrink (The University of Liverpool)
Key physiological innovations and adaptive radiation: Swimbladder oxygen secretion as a case study [A2.8]

15:00 Tea or Coffee

Chair: Steven Perry

15:30 Dr. Felix Mark (Alfred-Wegener Institute)
Variable haemocyanin properties within a panmictic population of the cuttlefish *Sepia officinalis* in the English Channel and the Bay of Biscay [A2.9]

15:45 Dr. Helen Evans (The University of Liverpool)
Ancient and modern duplication events and the diversity of .9-desaturase genes in the ray-finned fishes [A2.10]

16:00 Dr. Hamish Campbell (University of Birmingham)
Vagally mediated heart rates in fish: an evolutionary flexible strategy [A2.11]

16:15 Dr. Pia Koldkjaer (The University of Liverpool)
Strategies for reconstructing the evolution of a beta-adrenergically activated Na, K, 2Cl cotransporter in bird red blood cells: Correlation with exercise physiology and domestication [A2.12]

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- 16:30 Dr. Tony D. Williams (Simon Fraser University)**
Regulatory (resource-independent) versus resource-dependent mechanisms for cost of reproduction trade-offs [A2.13]
- 16:45 Mr. Ruud Schilder (Pennsylvania State University)**
Intraspecific variation in dragonfly flight behavior: effects of a parasitic infection on flight muscle performance, metabolism, and myofibrillar protein content [A2.14]
- 17:00 Posters**

A4. General Animal Biology

Organised by **T. Wang (University of Aarhus)**

Chair: To be confirmed

- 09:00 Ms. Christine Vanderlinden (UCL, Belgium)**
Do brittle star photocytes spark alone? [A4.1]
- 09:20 Dr. Russell Nicholson (Simon Fraser University)**
The interaction of lipid signaling molecules and related drugs with sodium channels [A4.2]
- 09:40 Miss Gina Galli (The University of Birmingham)**
Calcium flux in turtle ventricular myocytes [A4.3]
- 10:00 Miss Rikke Birkedal (The University of Manchester, UK)**
Mitochondrial positioning and restriction of ADP-diffusion in trout cardiomyocytes [A4.4]
- 10:20 Dr. Christine Wall (Duke University)**
Anatomical and functional specializations of the anterior temporalis muscle of baboons as revealed by fiber type, fiber architecture, and EMG [A4.5]
- 10:40 Coffee**
- Chair: To be confirmed**
- 11:10 Miss Nini Skovgaard (University of Aarhus)**
Cost of ventilation in the vagotomized alligator [A4.6]
- 11:30 Prof. Michael Hedrick (California State University)**
Lung ventilation is coupled to lymph movement in anuran amphibians [A4.7]
- 11:50 Prof. Michael Hedrick (California State University)**
Glutamateric regulation of respiratory rhythm generation during development in the bullfrog (*Rana catesbeiana*) [A4.8]
- 12:10 Dr. Stuart Egginton (University of Birmingham)**
Baroreceptor sensitivity of Antarctic fishes - cardiovascular control in extreme hypothermia [A4.9]
- 12:30 Miss Marianne Skals (University of Aarhus)**
Regulation of cardiac filling and stroke volume in *Synbranchus marmoratus* [A4.10]
- 12:50 Ms. Erika Eliason (University of British Columbia)**
Growth, specific dynamic action and gut blood flow using isocaloric diets in Rainbow trout (*Oncorhynchus mykiss*) [A4.11]
- 13:10 Lunch**

Chair: To be confirmed

 Tuesday 4 April 2006

- 14:00 Ms. Jodie Rummer (University of British Columbia)**
A swimmer's diet: Substituting dietary lipids and the resulting effects on swimming performance in Chinook salmon (*Oncorhynchus tshawytscha*) [A4.12]
- 14:20 Mr. Christian Tudorache (University of Antwerp)**
Swimming capacity and energetics of migrating and non_migrating morphs of Threespined Stickleback (*Gasterosteus aculeatus*) and ecological implication [A4.13]
- 14:40 Mr. Matthew Regan (University of British Columbia)**
Effects of dietary lipid substitution on swimming performance during the early developmental stages of Chinook salmon (*Oncorhynchus tshawytscha*) [A4.14]
- 15:30 Dr. Tony D. Williams (Simon Fraser University)**
Flyway_scale variation in plasma triglyceride levels as an index of fattening in migrating shorebirds [A4.15]
- 15:50 Dr. Markus Knaden (Zurich University)**
Ant navigation: resetting the path integrator [A4.16]
- 16:10 Mr. Steven Young (University of Birmingham)**
Cardiovascular responses to thermal acclimation in [A4.17]
- 16:30 Mr. Johannes Overgaard (National Environmental Research Institute)**
Changes in membrane lipid composition during rapid cold hardening in *Drosophila melanogaster* [A4.18]
- 16:50 Close**

A7. General Biomechanics

Organised by P. Aerts (University of Antwerp (UIA))

Organised on behalf of the SEB Animal Section

Chair: Peter AERTS

- 08:20 Dr. Lei Ren (The Royal Veterinary College)**
Basic limb kinematics of the locomotion in African elephants (*Loxodonta africana*) [A7.1]
- 08:40 Mr. John R Hutchison (Royal Veterinary College)**
The challenges of reconstructing dinosaur locomotor biomechanics [A7.2]
- 09:00 Dr. Jim Usherwood (The Royal Veterinary College)**
The kinetics of walking dogs are consistent with passive, stiff_limbed models [A7.3]
- 09:20 Dr. Daniel Schmitt (Duke University)**
Ambling: An unusual intermediate speed gait in primates and other mammals [A7.4]
- 09:40 Mr. Kevin Parsons (Royal Veterinary College)**
Stance time and duty factor during pacing in the Dromedary camel (*Camelus dromedaries*) [A7.5]
- 10:00 Coffee**
- 10:30 Dr. Jonas Rubenson (Northeastern University)**
The in vivo function of two swing-phase muscles in running guinea fowl and their relation to limb-swing dynamics [A7.6]
- 10:50 Mr. Christopher Richards (Harvard University)**
Using in vivo and in vitro techniques to identify mechanisms by which power is modulated in the *Xenopus laevis* plantaris muscle during swimming [A7.7]
- 11:10 Dr. Glen Lichtwark (Royal Veterinary College)**
Optimal tendon compliance for maximising efficiency during locomotion [A7.8]
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- 11:30 Dr. Richard L. Marsh (Northeastern University)**
Lateral gastrocnemius function in running and jumping guinea fowl [A7.9]
- 11:50 Miss Sarah Williams (The Royal Veterinary College)**
Functional Specialisation of the Hare (*Lepus europeus*) and Greyhound (*Canis familiaris*) [A7.10]
- 12:10 Lunch**
- Chair: Anthony Herrel**
- 13:20 Dr. Matthew Wilkinson (University of Cambridge)**
Pitch control in 'tailless' pterosaurs [A7.11]
- 13:40 Dr. Stacey Combes (U.C. Berkeley)**
Limits to maximum flight velocity: pitch control and roll instability in orchid bees during fast, forward flight [A7.12]
- 14:00 Dr. Richard Bomphrey (Oxford University).**
Tracking insect trajectories in 3-dimensions using a large corner-cube reflector arena [A7.13]
- 14:20 Mr. Simon Walker (Oxford University)**
Automated tracking of natural or artificial features used to obtain topographical wing kinematics of tethered locusts and free flying hoverflies [A7.14]
- 14:40 Mr. Tobias Seidl (Zurich University)**
Vertical object avoidance reaction in desert ants [A7.15]
- 15:00 Coffee**
- 15:40 Prof. R.McN. Alexander (Leeds)**
Biomechanics of Imaginary Organisms [A7.16]
- 16:00 Prof. Thomas Speck (University of Freiburg)**
New insights into the eco-biomechanics of climbing plants [A7.17]
- 16:20 Prof. Tim Pedley (Cambridge University)**
Hydrodynamic aggregation and diffusion in populations of model micro_organisms [A7.18]
- 16:40 End of session 1**

C3. Role of Thermal Environment in Stress adaptation and Tolerance: Integration of Multiple Stressors

Organised by I. Sokolova (University of North Carolina at Charlotte) and H. Poertner (Alfred-Wegener Institute for Polar and)

- Chair: Dr. Inna Sokolova**
- 08:00 Dr. Peter Frappell (La Trobe University)**
Ventilatory and metabolic responses to temperature and hypoxic stress in air-breathing vertebrates [C3.1]
- 08:25 Dr. Donald Jackson (Brown University)**
Temperature and hypoxia in ectothermic tetrapods [C3.2]
- 08:50 Dr. John Lighton (UNLV)**
Assessing the thermal effects of hypoxia using thermolimit respirometry [C3.3]
- 09:15 Prof. Hans Poertner (Alfred-Wegener-Institute, Bremerhaven)**
Effects of CO₂ and hypoxia on thermal sensitivity in marine invertebrates [C3.4]
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09:40 Coffee Break

Chair: Prof. Hans-Otto Poertner

10:00 Dr. Christophe Minier (University of Le Havre)
Effect of temperature on the zebra mussel MXR system [C3.5]

10:25 Dr. Inna Sokolova (University of North Carolina at Charlotte)
Temperature-dependent effects of cadmium on the bioenergetics of oysters (*Crassostrea virginica*): from mitochondrial to whole-organism responses [C3.6]

10:50 Prof. Volker Loeschke (Aarhus University)
Identifying candidate genes of the (thermal) stress response in *Drosophila* [C3.7]

11:15 Dr. Patricia Schulte (University of British Columbia)
Responses to environmental stressors in fish: impacts of local thermal adaptation [C3.8]

11:40 Dr. Keith Brander (ICES Copenhagen)
The impact of temperature change on fisheries production [C3.9]

C4. Thermal Biology of Coral Reefs

Organised by O. Hoegh-Guldberg (University of Queensland) and H. Poertner (Alfred-Wegener Institute for Polar and)

Chair: Ove Hoegh-Guldberg

13:00 Prof. Ove Hoegh-Guldberg (University of Queensland)
Thermal biology of coral reefs: will coral reefs survive global warming? [C4.1]

13:25 Prof. Barbara Brown (University of Newcastle)
Corals and heat-stress [C4.2]

13:50 Mr. Yossi Loya (University of Tel Aviv)
Ecological impacts of thermal stress on Okinawan reefs [C4.3]

14:15 Dr. Roberto Iglesias-Prieto (Universidad Nacional Autónoma de México)
Thermal stress mechanisms in corals [C4.4]

14:40 Dr. Sophie Dove (University of Queensland)
All-protein chromophores isolated from corals, quench superoxide radicals [C4.5]

15:05 Coffee

Chair: Barbara Brown

15:30 Dr. William Leggat (University of Queensland)
The molecular biology of thermal stress in *Symbiodinium* [C4.6]

15:55 Dr. John Bythell (Newcastle University)
The influence of microbial communities in mediating environmental stress events on coral reefs [C4.7]

16:20 Dr. William Fitt (University of Georgia)
Thermal history of Caribbean reef corals [C4.8]

16:55 Prof. Denis Allemand (Centre Scientifique de Monaco)
Effect of temperature and sea water acidification on Scleractinian coral calcification: toward a physiological explanation [C4.9]

17:20 Mr. Christian Wild (UNESCO/IOC)
Corals as ecosystem engineers – ecological feedback scenarios after thermal stress and bleaching events [C4.10]

Tuesday 4 April 2006

C5. /P7 Genomics and Systems Biology

Organised by C. Grierson (University of Bristol)

Sponsored by: BBSRC

- 09:00 Keith Lindsey (University of Durham)**
Transcriptional profiling of the Arabidopsis embryo [C5.14]
- Chair: Peter McCourt**
- 09:35 Ji-Young Lee (Duke University)**
Genome to network: An integrative approach to understanding gene regulatory networks in Arabidopsis roots [C5.15]
- 10:10 To be confirmed [C5.16]**
- 10:30 Coffee/Tea**
- Chair: Keith Lindsey**
- 11:00 Key Speaker Peter McCourt (University of Toronto)**
Interactions of transcriptional networks and hormones in leaf development [C5.17]
- 11:45 Jayne Griffiths (Rothamsted Research)**
Identification of early GA response genes in Arabidopsis [C5.18]
- 12:05 David Brown (University of Manchester)**
The characterisation of Arabidopsis secondary cell wall synthesis using microarrays and metabolic fingerprinting [C5.19]
- 12:25 Lunch**
- 14:00 Bioinformatics Workshop**
- 17:00 Poster Session**
- 19:00 Women in Science Dinner**

P4. Compartmentation (Tissue, Plastid, Organelle)

Organised by R. Leigh (University of Cambridge), K. Pyke (University of Nottingham) and P. White (Horticultural Research International)

Chair: Prof. Philip J. White

- 09:00 Dr. Setsuko Komatsu (National Institute of Agrobiological Sciences, Japan)**
The proteomics of plant cell membranes [P4.16]
- 09:30 Mr. Viktor Zarsky (IEB ASCR, Czech Republic)**
Angiosperm exocyst [P4.17]
- 09:45 Mr. Piers A. Hemsley (University of Bristol)**
TIP1 is a protein lipidation enzyme controlling multiple aspects of Arabidopsis growth and development [P4.18]
- 10:00 Dr. Iris Meier (Ohio State University)**
Plant nuclear envelope proteins: Theme and variations [P4.19]
- 10:30 Break**
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- 11:00 Dr. Patrick Moreau (CNRS-Univ. Bordeaux2)**
The plant ER-Golgi channel: focus on SNAREs and lipids [P4.20]
- 11:30 Prof. Michael R. Blatt (University of Glasgow)**
Mobility and traffic of K channels at the plasma membrane [P4.21]
- 12:00 Dr. Vadim Volkov (University of Paisley)**
Water and ion transport properties differ between growth and mature zone and between epidermis and mesophyll in barley leaves [P4.22]

JS. Water Transport

Organised by **M. Grosell (University of Miami)**, **D. Evans (Oxford Brookes University)** and **A. Tomos (Coleg Prifysgol Gogledd Cymru)**

Sponsored by: **Company of Biologists**

Chair: Martin Grosell

- 08:30 Prof. Masakazu Suzuki (Shizuoka University)**
Amphibian aquaporins and adaptation to terrestrial environments [JS.9]
- 09:00 Dr. Christopher Cutler (Georgia Southern University)**
Aquaporin channels in fish [JS.10]
- 09:30 Mrs. Else Kay Hoffmann (Institute of Molecular Biology and Physiology, University of Copenhagen)**
On the role of volume sensitive ion transport systems in regulation of epithelial transport [JS.11]
- 10:00 Dr. William Marshall (St. Francis Xavier University)**
Osmosensing mechanisms of ion transporting epithelial systems [JS.12]
- 10:30 Coffee/Tea**
- Chair: Erik Hviid Larsen**
- 11:00 Dr. Martin Grosell (RSMAS, University of Miami)**
Intestinal anion exchange in teleost water balance [JS.13]
- 11:25 Dr. Rod Wilson (University of Exeter)**
Water absorption by precipitation in the marine teleost intestine [JS.14]
- 11:50 Mr. Jonathan Whittamore (University of Exeter)**
Calcium dramatically stimulates water absorption in the marine teleost intestine in vitro [JS.15]
- 12:05 Lunch**
- Chair: Rod W. Wilson**
- 13:05 Dr. Niels J. Willumsen (University of Copenhagen)**
Amphibian skin: epithelial and vascular functions in water uptake [JS.16]
- 13:35 Dr. Robert Nielsen (University of Copenhagen)**
Coupling between ion and water transport across anuran epithelia [JS.17]
- 14:05 Dr. Stanley Hillyard (University of Nevada)**
Chemosensory function of salt and water transport [JS.18]
- 14:35 Dr. Masaaki Ando (Hiroshima University)**
Water metabolism in marine fish - regulation of drinking behavior [JS.19]
-

Tuesday 4 April 2006

15:05 Coffee/Tea

Chair: Niels Willumsen

15:35 **Dr. W. Gary Anderson (University of Manitoba)**
Water metabolism in elasmobranch fish [JS.20]

16:00 **Dr. Jeffrey H. Spring (University of Louisiana)**
Water transport in insect renal tubules [JS.21]

16:30 **Prof. Erik Larsen (University of Copenhagen)**
Recirculation theory of isotonic transport [JS.22]

17:00 **End of part 2**
Session continues Wednesday

Tuesday Poster Session

A1. Ion Sensing and Ion Regulation

Miss Nimta George (University of Kerala)
Ionoregulatory responses in the air-breathing perch, *Anabas testudineus* to iron loading [A1.12]

Miss Hélène Ollivier (Unité de Physiologie Comparée et Intégrative)
Volume regulation following hyposmotic shock in isolated turbot (*Scophthalmus maximus*) hepatocytes [A1.13]

Mr. Phillip Holliday (Durham University)
Inorganic carbon regulation of CyaB [A1.14]

Mrs. Valérie Maxime (Unité de Physiologie Comparée et Intégrative)
Volumetric and ionic responses of trout erythrocytes to hypotonic exposure [A1.15]

Dr. Gordon Cramb (University of St Andrews)
Development of a bacterial expression system for the production of guanylin prohormones from the European Eel (*Anguilla anguilla*) [A1.16]

A2. Evolutionary Physiology

Dr. Katja Wolfram (Alfred Wegener Institute)
Microsatellite DNA variation indicates a panmictic population of the cuttlefish *Sepia officinalis* (Mollusca: Cephalopoda) in the English Channel and the Bay of Biscay [A2.15]

A4. General Animal Biology

Mr. Daniel Baker (University of British Columbia)
Effect of dietary canola oil level on ion regulatory development and immunological status of spring chinook salmon (*Oncorhynchus tshawytscha*) [A4.23]

Miss Nini Skovgaard (University of Aarhus)
Hemodynamic effects of the regulatory peptide neurotensin on the systemic and pulmonary circulation in the python, *Python regius* [A4.24]

Ms. Julia Stalleicken (University of Oldenburg)
Compass orientation and spatiotemporal orientation strategies in monarch butterflies (*Danaus plexippus*) [A4.25]

Tuesday 4 April 2006

Mr. Shodja Hashemi (University of Antwerp)

The effect of food ration on copper toxicity and tissue specific copper accumulation patterns of sublethal waterborne exposure in *Cyprinus carpio* [A4.26]

Miss Christina Von Scheven (Royal Veterinary College)

Muscle architecture of the equine longissimus dorsi muscle [A4.27]

Dr. Holly Shiels (University of Manchester)

Cardiac myocyte morphology from Pelagic fish Species [A4.28]

Mr. Steven Portugal (University of Birmingham)

Seasonal variability in body composition, physiology and energetics of barnacle geese (*Branta leucopsis*) [A4.29]

Dr. Saber Khodabandeh (Tarbiat Modarres University)

Some Biological characters of *Triops cancriformis* (Branchiopoda, Notostraca) in the vernal pools of West Azarbaijan, IRAN [A4.30]

Mr. Johannes Overgaard (National Environmental Research Institute)

Determining factors for glucose accumulation in the freeze tolerant earthworm *Dendrobaena octaedra* [A4.31]

Dr. Jonathan Codd (University of Manchester)

Uncinate processes in birds and maniraptoran dinosaurs [A4.32]

Dr. Chris Lloyd Mills (Nottingham Trent University)

Alteration of water permeability as an osmoregulatory adaption in an ecological series of gammaridean amphipods [A4.33]

Dr. Jennifer Sneddon (Liverpool John Moores University)

Physiological responses of seasonally anhidrotic horses to exercise [A4.34]

Mr. Johannes Overgaard (National Environmental Research Institute)

Seasonal acclimation to freeze tolerance in the earthworm *Dendrobaena octardra* [A4.35]

Mr. Erik Sandblom (Göteborg University)

Central venous pressure and mean circulatory filli [A4.36]

Dr. Svetlana Kalujnaia (St Andrews University)

Gene profiling analysis of *Anguilla anguilla*'s salinity response using microarray technology [A4.37]

A7. General Biomechanics

Miss Nina Schaller (Senckenberg Research Institute)

Preliminary analysis of toe function in walking ostriches (*Struthio camelus*) [A7.27]

Prof. Vincent Bels (MNHN)

Feeding in terrestrial turtles [A7.28]

Ms. Yukie Ozawa (Oxford University)

Onboard video for free-flight analysis of vision-based flight control in birds [A7.29]

Dr. Elena Gorb (MPI Stuttgart)

Surface properties and adhesion: the beetle *Gastrophysa viridula* on the host plant *Rumex obtusifolius* [A7.30]

Miss Patricia de Cocq (Wageningen UR and HAS Den Bosch)

Effects of a girth, a saddle and weigh on the movements of the horse [A7.31]

Dr. Rob James (Coventry University)

Maximising work during active lengthening or during active shortening leads to similar in vitro fatigue and damage in mouse soleus muscle [A7.32]

Tuesday 4 April 2006

Dr. Emmanuelle Pouydebat (MNHN)

Comparative analysis of object grasping in lower and higher primates: do they have similar abilities? [A7.33]

C1. Advances in Cellular Micromanipulation

Mrs. Camelia Dijkstra (University of Nottingham)

Impact of magnetic levitation and gravity on *Escherichia coli* and *Staphylococcus albus* [C1.9]

C3. Role of Thermal Environment in Stress Adaptation and Tolerance: Integration of Multiple Stressors

Dr. M.S. Clark (British Antarctic Survey)

The heat shock response in Antarctic marine organisms [C3.10]

Miss Natallia Pshybytko (Institute of Biophysics of NAS Belarus)

Effect of environmental temperature on pathogenesis in tomato plants [C3.11]

Dr. Gisela Lannig (AWI, Bremerhaven)

Cadmium reduces temperature tolerance in oyster, *Crassostrea virginica* [C3.12]

Mr. Johannes Overgaard (National Environmental Research Institute, Denmark)

You are what you eat: Role of fatty acid diets for thermal resistance and phospholipid fatty acid composition [C3.13]

Mr. Anton Cherkasov (University of North Carolina at Charlotte)

Cadmium and temperature effects on mitochondrial and cellular function of the eastern oyster, *Crassostrea virginica* [C3.14]

C5. /P7 Genomics and Systems Biology

Gareth Norton (University of Aberdeen)

A bioinformatic and transcriptomic approach for the identification of candidate genes for QTL's in rice [C5.25]

Elizabeth Allen (University of Wales)

Metabolic and transcriptional consequences of disrupting acetate metabolism in *Arabidopsis* seedlings [C5.26]

P4. Compartmentation (Tissue, Plastid, Organelle)

Mr. Nicolas Fabre (Plant Molecular Ecophysiology Laboratory)

Characterisation of alpha and beta carbonic anhydrase families in *Arabidopsis thaliana* [P4.23]

Dr. Alexandre Boscari (University of Paisley)

Potassium channels and transporters in growing and non-growing leaf tissue of barley [P4.24]

Prof. Richard Leegood (University of Sheffield)

Single-cell C4 photosynthesis in marine diatoms? [P4.25]

E1. Problem-Based Learning -Poster Session

Dr. Patricia Ash (Open University)

Problem solving activities in biology for Open University students [E1.1]

Dr. Celia Knight (University of Leeds)

Undergraduate E-Journals [E1.2]

 Tuesday 4 April 2006

JS. Water Transport

Dr. Vadim Volkov (University of Paisley)

Osmotic water permeability differs between growing and non-growing barley leaf tissues [JS.29]

Dr. Andrew Richardson (University of Paisley)

Cuticular permeance and its relation to profiles of waxes and cutin along the developing barley leaf [JS.30]

Miss Ewa Przedpelska (University of Bayreuth)

Influence of the heavy metals stress on aquaporins activity in the epidermis of onion cells [JS.31]

Mr. Thorsten Knipfer (University of Bayreuth)

Effects of internal unstirred layers (USLs) on hydraulic measurements in young maize roots during pressure clamp (PC) [JS.32]

Mr. Hagen Reinhardt (University of Bayreuth)

Verification of cohesion/tension gating mechanism of aquaporins in Chara by perfusion technique [JS.33]

Mr. Qing Ye (University of Bayreuth)

Minor role of unstirred layers (USLs) during the measurement of transport coefficients of Chara internodes with the cell pressure Probe [JS.34]

Mr. Lukasz Kotula (University of Bayreuth)

Radial oxygen loss by roots: first measurements of [JS.35]

Miss Yangmin Kim (Bayreuth University)

Regulation of water permeability in leaf parenchyma cells of Zea mays by light [JS.36]

E1 PROBLEM-BASED LEARNING WORKSHOP

PBL – What's the Problem?

Organisers: Jeremy Pritchard, Jackie Wilson, Steve Maw and Sarah Blackford

Organised in collaboration with the Centre for Bioscience, this workshop aims to assist you in developing more creative teaching methods in your lectures and will include information and advice on facilitation, assessment, implementation, resources and constraints. We expect you to take away practical advice and realistic tools to enable you to initiate PBL within your own lecture series.

9:00 am–12:00 pm An Introduction to Problem-based Learning

This section of the workshop will be delivered by LeAP (University of Leicester) who have pioneered PBL working practices. It will take an informal format with the opportunity for participants to share their experiences where appropriate as well as hearing from the experts.

- What is PBL and why use it?
- When and how much should it be used?
- What are the advantages and disadvantages of using PBL?
- Turning teaching into facilitation
- How can PBL be used effectively in teaching?
- Resources

12:00 pm–2:00 pm Buffet lunch and poster presentations

Delegates will be able to see ways in which PBL is being used from poster presenters during lunch where they can swap ideas and discuss possibilities for their own teaching purposes.

2:00–5:00 pm PBL in Progress!!

Real life uses of PBL for teaching purposes using the following examples:

- 'Omics'
 - Field work
 - Bioethics
-

Tuesday 4 April 2006

The rest of the afternoon is set aside for participants to work together or individually to develop strategies and methods for transforming their own lectures into a mixture of didactic and problem-based formats.

E2/C5/P7 BIOINFORMATICS TRAINING WORKSHOP

Introduction to bioinformatics – protein sequence analysis in action

Organisers: Sarah Blackford and Claire Grierson

Speaker: Professor Terri Attwood (University of Manchester)

This introductory workshop is aimed at anyone wanting to know more about the tools and databases available for practical protein sequence analysis. Whether you are just getting to grips with bioinformatics for the first time, or already have some experience but want a quick refresher course, or if you have your own pet sequence analysis project that you 'd like to take a bit further – there's something here for everyone! The workshop begins with an overview of bioinformatics, highlighting the advantages and limitations of the tools and databases available. This is followed by an on-line tutorial, which gives first-hand experience of practical sequence analysis – the tutorial is freely accessible on the Web, so participants may continue their analyses after the workshop. Or you may dip in beforehand by creating an EMBER account as an independent user at <http://www.ember.man.ac.uk>.

Wednesday 5 April 2006

A4. General Animal Biology

Organised by T. Wang (University of Aarhus)

Chair: To be confirmed

- 09:00 Mr. Dave Ball (University of Dundee)**
Environment gene interactions in natural populations of three-spine stickleback [A4.19]
- 09:20 Ms. Jodie Rummer (University of British Columbia)**
Characterization of the hemoglobin and red blood cell system in the copper rockfish, *Sebastes caurinus* [A4.20]
- 09:40 Dr. Cliff Rankin (Huddersfield University)**
Effects of silvering and maturation on acclimation to sea water in the European eel, *Anguilla anguilla* L [A4.21]
- 10:00 Mr. Dan Baker (University of British Columbia)**
Acid-base regulation during exposure to elevated environmental CO₂ in an osmoconformer, the Pacific Hagfish (*Eptatretus stoutii*) [A4.22]

A6. Scaling in Biomechanics

Organised by A. Herrel (Biology Department) and G. Askew (University of Leeds)

Sponsored by: Sable Systems International

Chair: Graham Askew

- 13:00 Dr. Robert Dudley (UC-Berkeley)**
Allometry of maximum hovering performance in insects and hummingbirds [A6.1]
- 13:40 Dr. Robert L. Nudds (University of Leeds)**
Scaling of the avian wing-skeleton [A6.2]
- 14:20 Prof. Adrià Casinos (University of Barcelona)**
Intraspecific and interspecific scaling of calcaneus in Carnivora [A6.3]
- 14:45 Mrs. Melanie Scholz (IFKB)**
Scaling and jumping: gravity loses grip on small jumpers [A6.4]
- 15:10 Tea**
- 15:40 Prof. Steven Vogel (Duke University)**
Bioballistics: The scaling of acceleration and trajectories [A6.5]
- 16:20 Dr. Kiisa Nishikawa (Northern Arizona University)**
Scaling of ballistic mouth opening during feeding in toads [A6.6]
- 17:00 Session continues on thursday**

A7. General Biomechanics

Organised by P. Aerts (University of Antwerp (UIA))

Organised on behalf of the SEB Animal Section

Chair: Johan VAN LEEUWEN

Wednesday 5 April 2006

- 08:40 Dr. Emmanuelle Pouydebat (MNHN)**
Evolutionary perspectives of object grasping in primates [A7.19]
- 09:00 Ms. Vicky Schaerlaeken (University of Antwerp)**
Modulation of prey capture kinematics and the role of lingual sensory feedback in the lizard *Pogona vitticeps* [A7.20]
- 09:20 Dr. Sandra Nauwelaerts (University of Rhode Island)**
Substrate increases feeding effectiveness in a white-spotted bamboo shark [A7.21]
- 09:40 Dr. Jon Barnes (Glasgow University)**
Adhesion and friction forces generated by single toe pads of the tree frog *Litoria carerulea* [A7.22]
- 10:00 Coffee**
- 10:30 Mr. Jan Schuppert (Max Planck Institute for Metals Research)**
The wet step: visualisation of the liquid bridges in the attachment pads of the beetle *Gastrophysa virifula* [A7.23]
- 10:50 Dr. Stanislav Gorb (MPI Stuttgart)**
Walking on a smooth ceiling: combination of nanoscale structures and the global-scale biomechanics [A7.24]
- 11:10 Dr. Sander Kranenborg (Wageningen University)**
Local biophysical stimuli and chondroid bone in lordotic vertebrae of the sea bass [A7.25]
- 11:30 Mr. Mark van Turnhout (Wageningen University)**
Finite element modeling of articular cartilage [A7.26]
- 11:50 End of session 2**

C1. Advances in Cellular Micromanipulation

Organised by **D. Evans (Oxford Brookes University)**, **I. Sparkes (Oxford Brookes University)** and **S. Brooks (Oxford Brookes University)**

Sponsored by: **Company of Biologists**

Chair: Dr. David Evans

- 13:00 Prof. Graeme Murray (University of Aberdeen)**
Laser microdissection: An overview of techniques and applications [C1.1]
- 13:45 Prof. Keith Lindsey (University of Durham)**
Laser-capture microdissection and DNA microarrays for the analysis of plant development [C1.2]
- 14:25 Mr. Graham Wright (University of Edinburgh)**
Optical tweezer micromanipulation of filamentous fungi [C1.3]
- 15:05 Coffee/tea break**
- Chair: Dr. Susan Brooks**
- 15:35 Prof. Roger Leigh (University of Cambridge)**
Exploring cellular composition in leaves using single cell sampling and x-ray microanalysis [C1.4]
- 16:15 Dr. Carol Wagstaff (University of Southampton)**
Expression profiling from single cells of senescing plant tissues [C1.5]
-

Wednesday 5 April 2006

C5./P7 Genomics and Systems Biology

Organised by C. Grierson (University of Bristol)

Sponsored by: BBSRC

Chair: Hans Westerhoff

10:25 Malcolm Bennett (University of Nottingham)
Integrated Systems Biology based modelling of root gravitropic signalling [C5.20]

11:00 Key Speaker Dennis Bray (University of Cambridge)
Bacterial chemotaxis: using computer models to unravel mechanism [C5.21]

11:45 Marcus Tindall (Mathematical Institute, Oxford)
The role of mathematical modelling in biology [C5.22]

12:15 Lunch

12:15 Poster change over

Chair: Alistair Hetherington

13:15 Key Speaker Hans Westerhoff (BioCentrum Amsterdam and Manchester Centre for Integrative Systems Biology)
Hierarchical regulation [C5.23]

14:00 Andrew Millar (University of Edinburgh)
Biological clocks in theory and experiments [C5.24]

14:45 Closing Remarks

15:00 GARNet Town Meeting

17:00 President's Medallist Talks

19:30 Conference Dinner

P3. Imaging Techniques for Understanding Plant Responses to Stress

Organised by H. Jones (University of Dundee) and J. Morison (University of Essex)

Organised on behalf of the SEB Plant Environmental Physiology Group

Sponsored by: British Ecological Society, Photon Systems International, Journal of Experimental Biology, Remote Sensing and Photogrammetry Society, EU Research Training Network-'Stressimaging' (HPRN-CT-2002-00254)

08:30 Imaging Plant Stress Workshop
There will be 20–30 minute demonstrations of the several stress imaging and measuring techniques repeated at intervals during the morning [P3.1]

10:15 Coffee

10:30 Imaging Plant Stress Workshop

Chair: Hamlyn Jones

13:15 Introduction to session

Wednesday 5 April 2006

- 13:20 Dr. Mark Fricker (University of Oxford)**
Imaging cellular stress dynamics [P3.2]
- 13:55 Dr. Walter Kockenberger (University of Nottingham)**
NMR microscopy and 'molecular imaging' of plants [P3.3]
- 14:30 Mr. Ladislav Nedbal (Institute of Systems Biology and Ecology CAS)**
Visualization of early stress phase in plants by combinatorial Chl-fluorescence imaging [P3.4]
- 14:50 Coffee**
- 15:20 Prof. Michael Burrell (Sheffield University)**
MALDI imaging for locating the effects of temperature in developing wheat grain [P3.5]
- 15:50 Dr. Andreas Meyer (University of Heidelberg)**
Imaging of cellular redox state in plant cells with redox-sensitive GFP [P3.6]
- 16:10 Dr. Henk Van As (Wageningen University)**
Intact plant MRI for the study of cell water relations and membrane permeability [P3.7]
- 16:45 End of session**

P6. Developments in Plant Biology: Metabolism, Development, Environmental Physiology, Transport, Gene Structure and Function

Organised by C. Raines (University of Essex)

- Chair: To be confirmed**
- 14:00 Dr. Ilja M. Reiter (CNRS-CEA)**
Reduced CO₂ hydration rate limits growth rate in carbonic anhydrase knockout mutants of Arabidopsis [P6.1]
- 14:20 Dr. John Andralojc (Rothamsted Research)**
Properties of CA1P phosphatase and its role in rubisco regulation [P6.2]
- 14:40 Miss Diana Marshall (University of Cambridge)**
Evolution of C₄ photosynthesis- the genus *Cleome* contains intermediate C₃–C₄ species [P6.3]
- 15:00 Mr. PRASHANT SINGH (University of Essex)**
The physiological role of Arabidopsis CP12 gene Family [P6.4]
- 15:20 Coffee**
- Chair: To be confirmed**
- 16:00 Prof. Rod Casey**
Manipulation of the enzymes of plant oxylipin meta [P6.5]
- 16:20 Dr. Mark Hooks (University of Wales Bangor)**
The ATP-Binding cassette protein COMATOSE is instrumental in glyoxysomal acetate transport [P6.6]
- 16:40 Dr. Marilyn Pike (John Innes Centre)**
Carbon fluxes into biosynthetic pathways in embryos within intact siliques of oilseed rape embryos [P6.7]
- 17:00 Close**
-

 Wednesday 5 April 2006

YSAS - Organised by D. Evans (Oxford Brookes University) and C. Trimmer (Society for Experimental Biology)

- 16:00 Miss Helen Rushton (Oxford University)**
An unbiased approach to the question of specificity in calcium signalling [YSAS.1]
- 16:20 Mrs. Melanie Scholz (IFKB)**
Scaling and jumping: gravity loses grip on small jumpers [YSAS.2]
- 16:40 Mr. Nicolas Fabre (CNRS/Aix-Marseille II University)**
Characterisation of alpha and beta carbonic anhydrase families in *Arabidopsis thaliana* [YSAS.3]
- 17:00 Dr. Imogen Sparkes (Oxford Brookes University)**
How are plant peroxisomes synthesised? [YSAS.4]
- 17:20 Miss Gina Galli (University of Birmingham)**
Calcium flux in turtle ventricular myocytes [YSAS.5]
- 17:40 Ms. Xinnan Wang (University of Cambridge)**
Neuronal and signaling role of a *Drosophila* Hereditary Spastic Paraplegia gene [YSAS.6]

JS. Water Transport

Organised by M. Grosell (University of Miami), D. Evans (Oxford Brookes University) and A. Tomos (Coleg Prifysgol Gogledd Cymru)

Sponsored by: Company of Biologists

Chair: Stanley D. Hillyard

- 08:30 Prof. Brian Eddy (University of Dundee)**
The role of gut, gills and kidney in water balance in freshwater fish [JS.23]
- 09:00 Dr. John Noble-Nesbitt (University of East Anglia)**
Special systems of passive and active water absorption in insects [JS.24]
- Chair: Wieland Fricke**
- 09:30 Dr. Hartmut Kaiser (Botanisches Institut der Universität Kiel)**
The guard cell response to lowered air humidity: No effect of a stomate's own transpiration [JS.25]
- 10:00 Prof. Dorothea Bartels (University of Bonn)**
Desiccation tolerance genomic aspects [JS.26]
- 10:50 Coffee**
- 11:20 Dr. Farkhanda Saifullah Khowaja (University of Aberdeen)**
Evidence that the aquaporin OsPIP2a is a good candidate gene for the drought avoidance QTL on chromosome 7 in rice [JS.27]
- 11:50 Prof. Deri Tomos (U. Wales Bangor)**
Turgor control by osmotic adjustment: Apoplast v Symplast [JS.28]
- 12:40 End of Session**
Lunch
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Wednesday 5 April 2006

E4 MANAGING YOUR LAB – A BEGINNER’S GUIDE

Organisers: Roger Leigh and Sarah Blackford in collaboration with BBSRC

Speakers: Professor Susan Wonnacott (University of Bath) and Dan Mulvihill (University of Kent)

The excitement and feeling of achievement when you get your first research fellowship or lectureship may be tempered when you realise that you will now have to manage a lab of your own! Not only will this mean managing your time, resources, administration and perhaps teaching too, it will also mean managing people, something you may not have done before. In addition, there will be other factors to consider such as the dynamics of your department and how you fit into your institution, the extra duties which accompany taking responsibility for others, training, safety regulations, committees etc.

Our speakers will provide insights from two different perspectives: Sue is a member of BBSRC’s Studentships and Fellowships Panel and Dan won his BBSRC David Phillips Fellowship in 2003. The workshop will take an informative but relaxed look at the issues you may face when you set up your own lab so that you will be able to go into it with your eyes open!

Thursday 6 April 2006

A6. Scaling in Biomechanics

Organised by **A. Herrel (Biology Department)** and **G. Askew (University of Leeds)**

Sponsored by: **Sable Systems International**

Chair: **Peter Aerts**

- 08:30 Prof. Rob James (Coventry University)**
Scaling of jumping performance and skeletal muscle mechanics [A6.7]
- 09:10 Mr. Sam Van Wassenbergh (University of Antwerpen)**
Scaling of contractile properties of catfish feeding muscles [A6.8]
- 09:35 Dr. Graham Askew (University of Leeds)**
Scaling of maximum skeletal muscle power output [A6.9]
- 10:15 Coffee**
- 10:50 Mr. Russell Main (Harvard University)**
Skeletal mechanics and growth in the emu hind limb during ontogeny [A6.10]
- 11:30 Dr. Gary Gillis (Mount Holyoke College)**
Body size and thigh muscle actions in mammalian quadrupeds [A6.11]
- 11:55 Miss Nicola Smith (The Royal Veterinary College)**
A study of scaling of mechanics of the locomotor system through ontogeny in the ostrich (*Struthio camelus*) [A6.12]
- 12:15 Lunch**
- Chair: **Anthony Herrel**
- 13:30 Prof. William Jungers (Stony Brook University)**
Body size and shape in *Homo floresiensis*: does "all" [A6.13]
- 14:10 Dr. Jeremy Burn (University of Bristol)**
The kinematics of 90 turns during trot locomotion in horses and dogs [A6.14]
- 14:35 Dr. Walter Federle (University of Cambridge)**
Scaling of animal attachment devices: implications on adhesive mechanisms, pad design and performance [A6.15]
- 15:00 Tea**
- 15:40 Dr. Callum Ross (University of Chicago)**
Scaling of temporal variables in mammalian mastication [A6.16]
- 16:20 Dr. Eize Stamhuis (University of Groningen)**
Structure and Reynolds' scaling of animal generated wakes [A6.17]
- 16:40 Miss Charlotte E. Miller (Royal Veterinary College, University of London)**
The scaling of foot musculoskeletal anatomy in elephants [A6.18]
- 16:45 End of session**

A9. Life With and Without Oxygen

Organised by **T. Wang (University of Aarhus)** and **G. Nilsson (University of Oslo)**

Sponsored by: **Company of Biologists**

Thursday 6 April 2006

- Chair: Prof. Goran Nilsson**
- 09:00 Prof. Edwin Taylor (University of Birmingham)**
Peter Lutz and his contributions to our understanding of the hypoxic response [A9.1]
- 09:40 Prof. Kenneth Storey (Carleton University)**
Anoxia tolerance in turtles: its in the genes [A9.2]
- 10:20 Coffee**
- 10:50 Prof. Philip Bickler (University of California at San Francisco)**
Role of intracellular Ca²⁺ in adaptation of vertebrate neurons to hypoxia [A9.3]
- 11:30 Prof. Donald Jackson (Brown University)**
Shell buffering correlates with anoxia tolerance in freshwater turtles [A9.4]
- 12:10 Lunch**
- 13:30 Dr. Sarah Milton (Florida Atlantic University)**
Anoxic and reoxygenation survival in the turtle brain [A9.5]
- 14:00 Dr. Howard Prentice (Florida Atlantic University)**
Molecular aspects of the anoxic turtle [A9.6]
- 14:30 Coffee**
- Chair: Dr. Sarah Milton**
- 15:00 Prof. David Jones (University of British Columbia)**
Exercise not size keeps leatherback turtles warm [A9.7]
- 15:40 Prof. Tobias Wang (University of Aarhus)**
Circulatory adaptations to hypoxia in reptiles [A9.8]

A10. Goal Directed Limb Movements

Organised by T. Matheson (University of Leicester)

- Chair: Volker Dürr**
- 08:30 Welcome & Introduction**
- 10:10 Morning Tea**
- Chair: Tom Matheson**
- 10:40 Introduction to Part II**
- 12:15 Lunch**
- Chair: Volker Dürr**
- 13:40 Introduction to Part III**
- Chair: Tom Matheson**
- 15:15 Summary & Discussion**
- 15:30 Afternoon Tea**
-

Thursday 6 April 2006

A11. Genes-Function-Disease Lessons from *Drosophila*

Organised by **A. Mudher (Institute of Psychiatry)** and **T. Newman (University of Southampton)**

Chair: Tracey Newman

09:30 Prof. David Shepherd (University of Southampton)
Modelling human neurodegenerative diseases in *Drosophila* [A11.1]

10:15 Morning coffee

Chair: David Shepherd

10:45 Dr. Efthimios Skoulakis (Institute of Molecular Biology and Genetics, BSRC “Alexander Fleming”)
Cell type and allele specificity in molecular, pathological and behavioral attributes of tauopathies in *Drosophila* [A11.2]

11:15 Dr. Amritpal Mudher (University of Southampton)
Consequences of co-expression of human tau and Abeta in *Drosophila* [A11.3]

11:45 Dr. Damian Crowther (University of Cambridge)
Genome-wide screens in a *Drosophila* model of Alzheimer’s disease yield novel therapeutic targets [A11.4]

12:15 Prof. David Sattelle (MRC Functional Genetics Unit, University of Oxford)
Functional and Microarray analysis of a *Drosophila* [A11.5]

12:45 Lunch

Chair: Tracey Newman/Amrit Mudher

13:45 Dr. Alex Whitworth (University of Sheffield)
Genetic models of Parkinson’s disease: mechanisms and therapies [A11.6]

14:15 Dr. Zdenek Berger (Mayo Clinic)
Can toxic aggregate-prone proteins be protective? Possible roles of expanded polyalanines in Huntington’s disease [A11.7]

14:45 Afternoon Tea/Coffee

Chair: Amrit Mudher

15:30 Dr. Tracey Newman (University of Southampton)
Modelling axonal injury using *Drosophila* [A11.8]

16:00 Dr. Cahir O’Kane (University of Cambridge)
Neuronal and signaling role of a *Drosophila* Hereditary Spastic Paraplegia gene [A11.9]

16:15 Dr. Sean Sweeney (University of York)
Modeling lysosomal storage disease in *Drosophila* [A11.10]

16:45 Discussion/close

C1. Advances in Cellular Micromanipulation

Organised by **D. Evans (Oxford Brookes University)**, **I. Sparkes (Oxford Brookes University)** and **S. Brooks (Oxford Brookes University)**

Sponsored by: Company of Biologists

Chair: Dr. Imogen Sparkes

09:00 Dr. Hanna Jankevics (MRC-National Institute for Medical Research)
Optically-based single molecule techniques and molecular motors [C1.6]

Thursday 6 April 2006

- 09:45 Dr. Julia Kehr (MPI of Molecular Plant Physiology)**
Laser microdissection: a tool for cell type-specific molecular profiling [C1.7]
- 10:25 Prof. Deri Tomos (University of Wales)**
Sampling cells and soils in picolitre volumes using glass micropipettes and their subsequent analysis [C1.8]
- Mrs. Camelia Dijkstra (University of Nottingham)**
Impact of magnetic levitation and gravity on *Eschetichia coli* and *Staphylococcus albus* [C1.9]
- 11:05 Coffee/tea break**
- 11:35 Demonstration talks**
- 12:35 Lunch**
- 14:00 Demonstrations**
- 15:30 Coffee/tea break**
- 16:00 Demonstrations**

C2. Nanobiology

Organised by M. Riehle (University of Glasgow) and R. Handy (University of Plymouth)

Sponsored by: Company of Biologists

Chair: To be confirmed

- 09:00 Dr. Cristina Buzea (Queen's University)**
Nanomaterials - sources, classification, and toxicity [C2.1]
- 09:30 Prof. Vicki Stone (Napier University)**
Nanoparticle toxicity [C2.2]
- 10:00 Dr. Richard Handy (University of Plymouth)**
Predicting the mechanisms of nano-toxicity from the membrane biology of fishes: Is nano pollution a problem for aquatic life? [C2.3]
- 10:30 Coffee**
- 11:00 Dr. Frank Walboomers (Radboud University)**
Artificial micro- and nanostructured surfaces in biomedicine [C2.4]
- 11:30 Dr. Matthew Dalby (University of Glasgow)**
Nanotopographical stimulation of mesenchymal stem cells [C2.5]
- 12:00 Prof. Adam Curtis (University of Glasgow)**
Nanoscale investigations of forces produced by cells [C2.6]
- 12:30 Dr. Joanna Smith (University of Glasgow)**
Function of toe pad cell nano-structuring in adhesion in tree frogs [C2.7]
- 13:00 Ms. Eileen Faucher (Swiss Federal Institute of Technology)**
How the hinge angle of the integrin headpiece is switched open: a hypothesis of integrin activation [C2.8]
- 13:30 Lunch**
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Thursday 6 April 2006

C5. /P7 Genomics and Systems Biology**Organised by C. Grierson (University of Bristol)****Sponsored by: BBSRC****10:00 Coffee/Tea****P3. Imaging Techniques for Understanding Plant Responses to Stress****Organised by H. Jones (University of Dundee) and J. Morison (University of Essex)****Organised on behalf of the SEB Plant Environmental Physiology Group****Sponsored by: British Ecological Society, Photon Systems International, Journal of Experimental Biology, Remote Sensing and Photogrammetry Society, EU Research Training Network -'Stressimaging' (HPRN-CT-2002–00254)****Chair: Dominique Van Der Straeten****08:30 Prof. Neil Baker (University of Essex)**

Imaging reactive oxygen species in plant tissues [P3.8]

09:05 Mr. Bernard Genty (CNRS-CEA, Aix-Marseille II)Functional imaging approaches for assessing CO₂ acquisition in leaves [P3.9]**09:40 Dr. Michael Roberts (Lancaster University)**

Imaging singlet oxygen generation in wounded plants [P3.10]

10:00 Coffee**10:30 Prof. Alistair Hetherington (Lancaster University)**Identification of Arabidopsis guard cell CO₂ signalling mutants using infrared thermography [P3.11]**11:05 Dr. Claus Buschmann (University of Karlsruhe)**

Fluorescence emission of leaves and its interpretation based on causal relationships [P3.12]

11:40 Dr. Laury Chaerle (Ghent University)

Monitoring and screening plant populations with thermal and chlorophyll fluorescence imaging [P3.13]

12:15 Lunch**Chair: Neil Baker****13:30 Mr. Sándor Lenk (University of Karlsruhe)**

Multi-colour fluorescence and reflectance imaging at the leaf level and its application possibilities [P3.14]

13:50 Dr. Siegfried Jahnke (Forschungszentrum Juelich)

A simple approach to estimate homobaricity of leaves by imaging water infiltration [P3.15]

14:10 Prof. Roland Valcke (Hasselt University)

Chlorophyll fluorescence imaging for predicting shelf-life and quality of fruits [P3.16]

14:40 Coffee**15:10 Mr. Said Attia al Hagrey (University of Kiel)**

Geophysical tools for imaging stem and root-zone water content in plant stress studies [P3.17]

15:45 Miss Carole Helfter (Heriot Watt University)

A non-invasive optical system for the measurement of phloem and xylem sap flow in woody plants [P3.18]

Thursday 6 April 2006

- 16:05 Dr. Birgit Gielen (University of Antwerpen)**
Chronic ozone exposure affects leaf senescence of beech: a chlorophyll fluorescence imaging approach [P3.19]
- 16:25 Dr. James Morison (University of Essex)**
Thermal imaging of leaf responses to environment [P3.20]
- 16:50 End of session**

P5. Flowering

Organised by N. Battey (University of Reading)

Sponsored by: Journal of Experimental Botany

- 08:30 Nick Battey (University of Reading)**
Introduction [P5.1]
- 08:35 Prof. Georges Bernier (University of Liege)**
Keynote Paper: The flowering process [P5.2]
- Chair: Session 1: Environmental perception: light, temperature and time**
- Chair: Richard Amasino (University of Wisconsin, USA)**
- 09:10 Prof. Richard Amasino (Wisconsin)**
Vernalization and the epigenetic memory of winter [P5.3]
- 09:45 Prof. Caroline Dean (John Innes Centre)**
The autonomous pathway: Linking RNA processing, RNAi and chromatin regulation [P5.4]
- 10:20 Coffee**
- 10:50 Prof. Brian Thomas (U. Warwick)**
Light signals in flowering [P5.5]
- 11:25 Prof. Andrew Millar (University of Edinburgh)**
Mechanistic modelling of flowering regulators based on molecular data [P5.6]
- 12:00 Dr. Frederic Cremer (Max Planck Institute for Plant Breeding Research)**
Control of GIGANTEA gene expression by light and the clock [P5.7]
- 12:35 Lunch**
- Chair: Session 2: Evolution of flowers and inflorescences**
- Chair: Paula Rudall (Royal Botanic Gardens, Kew, UK)**
- 13:35 Prof. Richard Bateman (Natural History Museum)**
Crucial role of outgroups in inferring the likely reproductive characteristics of the first angiosperm [P5.8]
- 14:10 Dr. Elizabeth Kellogg (University of Missouri-St. Louis)**
Novel genes and their putative functions in grasses [P5.9]
- 14:45 Dr. Dmitry Sokoloff (Moscow State University)**
Flower-like terminal structures in racemose inflorescences: a tool in morphogenetic and evolutionary research [P5.10]
- 15:20 Tea**
-

Thursday 6 April 2006

15:50 Mr. Sam Brockington (Florida Museum of Natural History)
The evolution and development of petaloidy in Aizoaceae (Caryophyllales) [P5.11]

16:25 Prof. Guenter Theissen (University of Jena)
Capsella as a model system to study the evolution of flower development [P5.12]

P6. Developments in Plant Biology: Metabolism, Development, Environmental Physiology, Transport, Gene Structure and Function

Organised by C. Raines (University of Essex)

Chair: To be confirmed

09:10 Dr. James Turner (University of Wales)
The acyl-activating enzymes of arabidopsis; the unknown members of a superfamily [P6.8]

09:30 Ms. Lieve Laurens (John Innes Centre)
Parallels between endosperm and leaf starch synthesis in maize [P6.9]

09:50 Dr. Simon Thain (I.G.E.R.)
Cellular metabolomic “chemical imaging” for fingerprinting and targeted analysis: The application of focal plane array fourier-transform infrared microscopy to study plant development [P6.10]

10:10 Dr. Jeremy Harbinson (Wageningen University and Research)
Regulation by liquidation: how photosynthesis responds to nitrogen stress [P6.11]

10:40 Coffee

Chair: To be confirmed

11:20 Dr. Astrid Wingler
Transcriptome and genetic analysis of sugar-induce [P6.12]

11:40 Miss Emily Breeze (Warwick HRI)
Functional analysis of signalling pathways involved in arabidopsis leaf senescence [P6.13]

12:00 Lunch

Chair: To be confirmed

14:00 Dr. Shutian Li (University of Birmingham)
Investigating the involvement of the p56 MAPK in programmed cell death and actin reorganization during self-incompatibility in papaver pollen [P6.14]

14:20 Mr. Bart Rymen (PSB, Ugent/VIB)
Cold nights impair leaf growth and cell cycle in maize through transcriptional changes of specific CDKs, cyclins, and their inhibitors [P6.15]

14:40 Miss Katharine Hubbard (University of Cambridge)
Dissection of calcium signalling pathways in the Arabidopsis circadian clock [P6.16]

15:00 Coffee

Chair: To be confirmed

15:40 Mr. Gordon Breen (Bristol University)
Understanding the cellular network directing root hair development in Arabidopsis thaliana [P6.17]

16:00 Mr. Jürgen Van Orden (University of Antwerp)
Sulfotransferase activity regulates cell elongation in the root and hypocotyl of Arabidopsis [P6.18]

Thursday 6 April 2006

- 16:20 Miss Angharad Jones (University of Bristol)**
The role of auxin-binding protein one in auxin transport [P6.19]
- 16:40 Miss Saher Mehdi (Durham University)**
The POLARIS gene is essential for correct ethylene signalling in Arabidopsis [P6.20]
- 17:00 Close**

Thursday Poster Session

A8. Comparative Reproduction and Development

- Dr. Saber Khodabandeh (Tarbiat Modarres University)**
Morphological and histological features of the Persian Sturgeon, *Acipenser persicus*, during prelarvae development [A8.12]

A9. Life With and Without Oxygen

- Mr. Stian Ellefsen (University of Oslo)**
Measuring gene expression in anoxic crucian carp: can internal housekeeping genes be trusted? [A9.17]
- Dr. Louise Kuchel (University of British Columbia)**
The effect of alternate dietary lipids on hypoxia tolerance in juvenile Chinook salmon [A9.18]
- Ms. Linda Hanson (University of British Columbia)**
Why hearts fail during maximum prolonged swimming in rainbow trout (*Oncorhynchus mykiss*) [A9.19]
- Miss Jianfeng Yuan (University of Plymouth)**
Hyperbaric oxygen therapy does not stimulate production of detectable nitric oxide (NO), vascular endothelial growth factor (VEGF), or damage blood vessels in vitro [A9.20]

A10. Goal Directed Limb Movements

- Prof. Harald Wolf (University of Ulm)**
The evolution of jumping legs: joint anatomy, mechanics and muscle activity in the middle legs of proscopiids and locusts [A10.10]
- Mrs. Alexandra Patel (University of Leicester)**
Changes in sensory hair distribution are associated with changing aimed limb movements during development [A10.11]
- Mr. Christoph Schütz (University of Bielefeld)**
Neural modelling of adaptive limb movements of the stick insect [A10.12]

A11. Genes-Function-Disease Lessons from *Drosophila*

- Ms. Xinnan Wang (University of Cambridge)**
Neuronal and signaling role of a *Drosophila* Hereditary Spastic Paraplegia gene [A11.11]
- Dr. Daniel Warren (Brown University)**
Repeated anoxic dives in turtles: Tissue-specific effects on aerobic enzymes do not improve the metabolic response during or following anoxia [A11.12]
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Thursday 6 April 2006

A13. General Neurobiology - Poster Session

Dr. Russell Nicholson (Simon Fraser University)

Steroidal natural products from ginseng inhibit sodium channel function by interacting with the alkaloid neurotoxin binding site 2 [A13.1]

Dr. Philip Newland (University of Southampton)

Nitric oxide modulates an oviposition digging rhythm of locusts via a PKG-dependent regulatory pathway [A13.2]

Dr. Hansjürgen Schuppe (University of Southampton)

Nitric oxide adjusts salt responses [A13.3]

Miss Sarah Young (University of Southampton)

Does larval diet influence adult food choice? Gustatory learning and memory in *Drosophila melanogaster* [A13.4]

Miss Christina Sørensen (University of Oslo)

Stress induced reduction of neurogenesis in rainbow trout brain [A13.5]

Prof. Heinrich Dirksen (Stockholm University)

Neuropeptide-containing neurons in the central nervous system of the waterflea *Daphnia magna* [A13.6]

P3. Imaging Techniques for Understanding Plant Responses to Stress

Dr. Kotaro Takayama (Ehime University)

Chlorophyll fluorescence imaging at 77K for assessing the distribution of the state transition over plant leaf surface [P3.35]

Mr. Matthew Tallis (University of Southampton)

Delayed canopy senescence in elevated CO₂? - evidence from remote sensing of canopy greenness [P3.36]

Mr. Steven Driever (University of Essex)

Imaging reactive oxygen species in leaves: Is photo-reduction of oxygen an important photoprotective electron sink? [P3.37]

Mr. Simon Crutchley (English Heritage)

Using differential crop growth to visualise past human intervention in the landscape [P3.38]

Dr. Antony Dodd (University of Cambridge)

Time of day modulates low-temperature Ca²⁺ signals in *Arabidopsis* [P3.39]

Mr. Lukasz Tronina (Istituto de Tecnologia Quimica e Biologica)

Establishing correlations between thermal imaging results and meteorological-ecophysiological variables in a *Quercus suber* L. stand [P3.40]

Dr. Mauro Centritto (Istituto Inquinamento Atmosferico, Consiglio Nazionale delle Ricerche)

Detecting associated changes in leaf physiological parameters and reflectance indices in water-stressed olive (*Olea europaea*) plants [P3.41]

Dr. Armando Apan (University of Southern Queensland)

Detecting downy mildew disease in cucumber using hyperspectral sensing [P3.42]

Miss Davina White (University of Newcastle upon Tyne)

Minimising background effects in field spectra of arable crops to detect stress associated with soil disturbance [P3.43]

Dr. Cecilia Futsaether (University of Oslo)

Effects of ozone on root development and leaf temperature in subterranean clover [P3.44]

Dr. Ryosuke Endo (Nihon university)

3-D cell-level chlorophyll fluorescence imaging of [P3.45]

Thursday 6 April 2006

Mrs. Dragana Rancic (University of Belgrade)

Image analysis of vascular system in fruit pedicels of drought stressed tomato [P3.46]

Dr. Roland Pieruschka (Forschungszentrum Juelich)

Lateral CO₂ diffusion inside leaves contributes to CO₂ uptake of homobaric leaves under drought stress [P3.47]

Mr. Sander Hogewoning (Wageningen University)

Insights into the effects of chilling on photoinhibition [P3.48]

Dr. Joaquim Miguel Costa (CNRS-CEA)

Isolation of Arabidopsis mutants with open stomata [P3.49]

Prof. Michael Steven (University of Nottingham)

Remote sensing of plant spectral responses to gas leaks and other stress factors [P3.50]

P5. Flowering

Prof. Brian Thomas (U Warwick)

Effects of light level on the juvenile phase in Antirrhinum [P5.25]

Mrs. Sarah Thornber (Warwick HRI)

Molecular characterisation of the day neutral flowering (dnf) mutant of Arabidopsis [P5.26]

Miss Emma Hewitt (University of Nottingham)

Development of protein analysis methods for MALE STERILITY 1 (MS1) protein in Arabidopsis thaliana [P5.27]

Mr. Albert Quainoo (University of Reading)

Detection and monitoring of the movement of cocoa swollen shoot virus [P5.28]

Dr. Michael Davey (University of Nottingham)

Micropropagation of Chrysanthemum: securing novel mutations [P5.29]

Dr. Muriel Quinet (Université catholique de Louvain, Belgium)

Genetical approaches towards understanding flowering time regulation in tomato [P5.30]

Mr. Fabrizio Van Kerkhoven (University of Liège)

Control of floral transition in maize [P5.31]

Mr. Karim Tamseddak (University of Liège)

Cloning of CONSTANS and FLOWERING LOCUS T in Sinapis alba [P5.32]

Mrs. Maria D'Aloia (University of Liège)

The FLC-dependent vernalisation pathway in Sinapis alba [P5.33]

Miss Johanna Thouet (University of Liège)

Genetical control of sympodial growth and flowering in tomato [P5.34]

P6. Developments in Plant Biology: Metabolism, Development, Environmental Physiology, Transport, Gene Structure and Function

Dr. Stuart Lane (University of Plymouth)

Effects of compost age on the suppression of Armellaria mellea with green waste compost teas [P6.33]

Mr. Mocanu Paul (Un)

How to get the maximum out of your watermelon production [P6.34]

Dr. Michael Davey (University of Nottingham)

Plant micropropagation: analysis of European stake [P6.35]

Thursday 6 April 2006

Miss Krittika Kaewchumnong (University of Aberdeen)

Differences in interaction between striga and two rice varieties [P6.36]

Dr. Anna Koprivova (John Innes Centre)

The complex signalling network in regulation of sulphate assimilation by salt stress [P6.37]

Mr. Marisol Castrillo-Issa (Universidad Simon Bolivar)

A comparison of some cadmium effects in two plants from different environments [P6.38]

Mr. Sylvester Tumsiime (University of Nottingham)

Self-incompatibility in *Coffea canephora* and *Petunia hybrida* [P6.39]

Ms. Vicky Van Sandt (University of Antwerp)

Xyloglucan endotransglycosylase/hydrolase activity beyond the vascular plants [P6.40]

Mr. Charles Domozoro (University of Aberdeen)

RbcL Sequence marking of poisonous plants; Application in elucidating livestock [P6.41]

Mr. Alireza Dadkhah (Ferdowsi University)

Effect of salinity on seed germination and early seedling growth of four sugar beet (*beta vulgaris*) cultivars [P6.42]

Dr. Ruth Bastow (University of Bristol)

GARNet [P6.43]

E3 CAREERS WORKSHOP

Identifying and selling your employability skills

Organisers: Sarah Blackford and Peter Lumsden

This workshop is aimed at postgraduates and early-career scientists who want to find out more about strategies for making their next career move. We will examine where you are now in your career, assist you in identifying the skills you have developed and guide you in the process of managing your forward career. The workshop will also include information on making effective applications in order to get to that first interview.

Friday 7 April 2006

A8. Comparative Reproduction and Development

Organised by M. Thorndyke (Kristineberg Marine Research Station), D. Bentley (Newcastle University) and K. Coward (University of Oxford)

Chair: Dr. Matt Bentley

09:00 Dr. Neil J. Gostling (The University of Bristol)
Swiss light shed on the nature of embryos from the dawn of animal evolution [A8.1]

09:30 Dr. Sam Dupont (Kristineberg Marine Research Station)
The brittlestar *Amphiura filiformis* as a new model [A8.2]

10:00 Dr. Michael C Thorndyke (Kristineberg Marine Research Station)
Growth or differentiation? Adaptative regeneration [A8.3]

10:30 Tea/Coffee

Chair: Professor Mike Thorndyke

11:00 Dr. Sebastian Shimeld (University of Oxford)
The evolution of vertebrate sensory systems [A8.4]

11:30 Prof. Colin Brownlee (Marine Biological Association, Plymouth)
Polarized development in the brown algae. Common mechanisms and unique features [A8.5]

12:00 Miss Rebecca Taylor (Newcastle University)
Effects of toxic diatoms on population growth and life history parameters of *Tisbe holothuriae* [A8.6]

12:20 Lunch

Chair: TBA

13:30 Prof. Keith Jones (Newcastle University)
Molecular insights into the mechanism of metaphase II arrest in mammalian eggs [A8.7]

14:00 Prof. IM Sheldon (Royal Veterinary College)
Molecular sensing of microbes in the mammalian uterus [A8.8]

14:30 Joerg Hardege (University of Hull)
Sex specific behavioural functions of crustecdysone in *Carciuns maenas* [A8.9]

15:00 Tea/Coffee

Chair: TBA

15:30 Miss Amy Filby (University of Exeter)
The developmental expression of three oestrogen receptor subtypes and their differential responses to oestrogen in fish [A8.10]

15:50 Dr. Eduarda Santos (University of Exeter)
Gender and stage-specific transcriptomic profiles of gonads and brains in breeding zebrafish [A8.11]

16:20 End of Session

A9. Life With and Without Oxygen

Organised by T. Wang (University of Aarhus) and G. Nilsson (University of Oslo)

Sponsored by: Company of Biologists

Chair: Dr. Sarah Milton

Friday 7 April 2006

- 09:00 Prof. Tony Farrell (University of British Columbia)**
The heart as a working model to explore themes and strategies for anoxic survival in ectothermic vertebrates [A9.9]
- 09:40 Prof. Steve F. Perry (University of Ottawa)**
Respiratory adaptations to hypoxia in fish [A9.10]
- 10:20 Coffee**
- 10:50 Dr. Katherine Sloman (University of Plymouth)**
Getting out of the water: Behavioural and physiological responses of tidepool sculpins to hypoxia [A9.11]
- Chair: Dr. Howard Prentice**
- 11:20 Miss Christine Couturier (CNRS-CRELA)**
Effects of hypoxia on metabolism and food digestion kinetics in juvenile sole (*Solea solea*): Consequences on growth [A9.12]
- 11:50 Prof. Goran E. Nilsson (University of Oslo)**
The crucian carp – plain looking but truly extraordinary [A9.13]
- 12:20 Lunch**
- 13:30 Prof. Joseph LaManna (Case Western Reserve University)**
Adaptive mechanisms in the hypoxic mammalian brain [A9.14]
- 14:10 Prof. Michael Fedak (University of St Andrews)**
Exploration and exploitation of the polar seas by elephant seals: monitoring diving behaviour and physiological condition in relation to the ocean environment [A9.15]
- 14:50 Prof. Keith Webster (University of Miami)**
Hypoxic life and death of cardiac myocytes [A9.16]

A10. Goal Directed Limb Movements

Organised by **T. Matheson (University of Leicester)**

- 08:40 Dr. Binyamin Hochner (Hebrew University of Jerusalem)**
The control of goal directed movements in the flexible arm of the octopus [A10.1]
- 09:10 Dr. Thomas Matheson (University of Leicester)**
The motor control of aimed limb movements in an insect [A10.2]
- 09:40 Dr. Paul Gribble (University of Western Ontario)**
Neural control of human limb dynamics [A10.3]
- 10:45 Dr. Trevor Drew (University of Montréal)**
Neural control of voluntary gait modifications and reaching movements in cats [A10.4]
- 11:15 Dr. Volker Dürr (University of Bielefeld)**
A model for stepping, searching and reaching movements in an insect [A10.5]
- 11:45 Prof. Tamar Flash (Weizmann Institute of Science)**
Modeling approaches in limb movement control [A10.6]
- 13:45 Prof. Harald Wolf (University of Ulm)**
Inhibitory motoneurons are essential elements of arthropod motor control strategy [A10.7]
- 14:15 Mr. Till Bockemühl (University of Bielefeld)**
Principal components as motor synergies of human catching movements [A10.8]
- 14:45 Ms. Martina Rieger (MPI Human Cognitive and Brain Sciences)**
The influence of goal representations on movement [A10.9]

Friday 7 April 2006

A12. Biomechanics Teaching and Learning Workshop

Organised by A. Wilson (The Royal Veterinary College) and R. Payne (Royal Vet College)

- 09:30 Start**
An opportunity to meet and discuss in an informal situation teaching and approaches to Biomechanics, bring a lap top and your ideas
- 11:30 Finish**

P3. Imaging Techniques for Understanding Plant Responses to Stress

Organised by H. Jones (University of Dundee) and J. Morison (University of Essex)

Organised on behalf of the SEB Plant Environmental Physiology Group

Sponsored by: British Ecological Society, Photon Systems International, Journal of Experimental Biology, Remote Sensing and Photogrammetry Society, EU Research Training Network – ‘Stressimaging’ (HPRN-CT-2002-00254)

Chair: James Morison

- 08:30 Prof. Hamlyn Jones (University of Dundee)**
Dynamic thermal imaging for estimating leaf and boundary layer conductances [P3.21]
- 08:50 Dr. Olga Grant (East Malling Research)**
Thermal imaging successfully detects stress-related differences between grapevine canopies receiving different irrigation regimes [P3.22]
- 09:20 Dr. Ilkka Leinonen (University of Dundee)**
Towards automated analysis of thermal images [P3.23]
- 09:40 Mr. Alan Gay (IGER)**
Hyperspectral imaging in plant science: some case studies of various stresses on different species and at different scales under laboratory and natural lighting conditions [P3.24]
- 10:00 Coffee**
- 10:30 Prof. Raffaele Casa (University of Tuscia)**
Use of multiangular and hyperspectral data for field crop stress diagnosis [P3.25]
- 10:55 Dr. Hervé Sinoquet (INRA-UBP)**
Light and fruit quality distribution as influenced by training system in apple tree canopies: assessment from imaging of 3D digitised plants [P3.26]
- 11:30 Dr. Alan Blackburn (Lancaster University)**
Hyperspectral remote sensing of plant pigments [P3.27]
- 11:50 Dr. Angela Harris (University of Southampton)**
Detecting near-surface moisture stress in Sphagnum spp [P3.28]
- 12:10 Lunch**
- Chair: Alan Blackburn**
- 13:30 Prof. Kenji Omasa (The University of Tokyo)**
3D lidar imaging for detecting and understanding plant responses and canopy structure [P3.29]
- 14:05 Dr. Frédéric Baret (INRA)**
Remote detection and quantification of plant stress: opportunities remote sensing observations [P3.30]
- 14:40 Mr. Alejandro de Asis (The University of Tokyo)**
An integrated NDVI and spectral mixture analysis for an improved detection of vegetation stress using multispectral data [P3.31]
- 15:00 Coffee**
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Friday 7 April 2006

- 15:30 Miss Stephanie Delalieux (KUL)**
Hyperspectral indices for diagnosing plant biotic stresses in apple trees [P3.32]
- 15:50 Mr. Markus Moller (ARO Volcani Center)**
Integrated thermal and visible imaging for crop water stress assessment in a wine-grape vineyard [P3.33]
- 16:10 Prof. Michael Steven (University of Nottingham)**
Radar Responses to Wilting in Sugar Beet [P3.34]
- 16:40 End of session**

P5. Flowering

Organised by **N. Battey (University of Reading)**

Sponsored by: **Journal of Experimental Botany**

Chair: Session 3: Floral Signalling

Chair: George Coupland (Max Planck Institute, Cologne, Germany)

- 08:35 Prof. Ove Nilsson (Umeå Plant Science Centre)**
The role of the FT mRNA in photoperiodic regulation of plant growth and development [P5.13]
- 09:10 Dr. Laurent Corbesier (Max Planck Institute for Plant Breeding Research)**
Analysis of the expression pattern of FT protein during flowering [P5.14]
- 09:45 Prof. Eliezer Lifschitz (Technion)**
The tomato FT gene triggers conserved systemic flowering signals that regulate termination and substitute for light and photoperiodic stimuli [P5.15]
- 10:20 Coffee**
- 10:50 Dr. Philip Wigge (John Innes Centre)**
FT signalling in the floral transition [P5.16]
- 11:25 Dr. Koji Goto (Res. Inst. Biological Sciences)**
Protein trafficking of FT/TFL1 and flowering signal transmission [P5.17]
- 12:00 Lunch**
- Chair: Session 4: Flower development**
- Chair: Brendan Davies (University of Leeds, UK)**
- 13:00 Brendan Davies (University of Leeds)**
Introduction [P5.18]
- 13:15 Mr. Gerco Angenent (Plant Research International)**
Protein complexes make the flower [P5.19]
- 13:50 Prof. Martin Kater (University of Milan)**
Flower development in rice [P5.20]
- 14:25 Dr. Zinnia Gonzalez-Carranza (The University of Nottingham)**
Characterisation of the HAWAIIAN SKIRT gene, which encodes a novel F-box protein involved in sepal boundary development [P5.21]
- 15:00 Tea**
- 15:30 Prof. Teemu Teeri (University of Helsinki)**
Reproductive meristem fates in Gerbera [P5.22]

Friday 7 April 2006

16:05 Dr. Cristina Ferrandiz (Instituto De Biología Molecular Y Celular De Plantas. CSIC-UPV)
Carpel and fruit patterning in Arabidopsis [P5.23]

16:40 Nick Battey (University of Reading)

P6. Developments in Plant Biology: Metabolism, Development, Environmental Physiology, Transport, Gene Structure and Function

Organised by C. Raines (University of Essex)

Chair: To be confirmed

09:10 Ms. An Maris (University of Antwerp)
Production, purification and characterization of 10 Arabidopsis Xyloglucan endotransglycosylases/hydrolases (XTHs) [P6.21]

09:30 Dr. T. De Cnodder (University of Antwerp)
Identification of crucial cell wall components in cell elongation in the Arabidopsis thaliana root [P6.22]

09:50 Mr. Sunil Cherukuri (Lancaster University)
Effect of high rhizospheric calcium on root growth and structure in Arabidopsis [P6.23]

10:10 Coffee

Chair: To be confirmed

11:00 Mr. Arun Dev Sharma (Lyallpur Khalsa College)
Water stress induced-expression of a 20 kDa cyclophilin-like protein in the drought susceptible and tolerant cultivars of sorghum during water stress [P6.24]

11:20 Dr. Ndiko Ludidi (Stellenbosch University)
AtGC1, a dual function Arabidopsis thaliana protein with guanylyl and cysteine protease activity [P6.25]

11:40 Dr. John Hammond (University of Warwick)
Developing transcriptional platforms for non-model plant species [P6.26]

12:00 Lunch

Chair: To be confirmed

13:30 Miss Roshi Shrestha (University of Aberdeen)
Mapping quantitative resistance to nematodes in rice for marker assisted breeding and gene identification [P6.27]

13:50 Mrs. Meher Nigar (Aberdeen University)
Mapping of arsenic tolerance genes in rice [P6.28]

14:10 Ms. Ana Sofia Soares (Universidade de Lisboa)
Differential regulation of stomata and photosynthesis on the adaxial and abaxial leaf surfaces of the C4 species Paspalum dilatatum in response to CO2 enrichment [P6.29]

14:40 Mr. Douglas Ibrahim (University of Sheffield)
Plant-climate interactions in C3 and C4 subspecies of Alloteropsis semialata [P6.30]

15:00 Coffee

Chair: To be confirmed

15:30 Miss Kate Warner (The Natural History Museum)
Environmental control of sepalness and petalness in waterlilies [P6.31]

15:50 Dr. Maria Donkin (University of Plymouth)
The monitoring of the effects of atmospheric organic pollutants on higher plants [P6.32]
