



## **Natural Systems and Processes**

### **Poster Session 2012**

#### **Presenters and Posters**



**1. Peter Adamson**

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**Namacalathus: The evidence for the oldest skeletonised animal**

**9. Harriet Benbow**

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**QTL Mapping and Grain Yield in Wheat**

**2. James Armstrong**

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**Stem cell priming with Protein-Surfactant Bioconjugates**

**10. Ravneet Bhuller**

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**Bioinformatic Identification and Analysis of the Excretory/Secretory Gene Products of the Genome of *Strongyloides ratti***

**3. Mariosol Correa Ascencio**

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**Pulque, the Meso-American Elixir of Life. An Organic Residue Analysis Approach**

**11. Charlotte Bickler**

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**Evolutionary Responses in Habitat and Ecological Networks**

**4. Beth Atkinson**

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**Restoration of Native Woodland**

**12. Victoria Bird**

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**Blowfly Strike and Resistance**

**5. Chuck Bacon**

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**Mineralogy and Controls on Pb and Cd Mobility in Contaminated Soils in the Mendip Hills**

**13. Verity Bonnell**

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**Investigating the Control of Stomatal Development and Function in Wheat and Barley**

**6. Alice Banks**

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**Drug Discovery in Mushrooms**

**14. Fran Bragg**

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**Modelling the Pliocene Climate and Carbon Cycle**

**7. James Barnett**

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**Multiple Function Morphology: Combining Camouflage and Aposematism**

**15. Victor Brena-Medina**

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**Morphogenesis on Plant Root Hair Initiation: A Reaction-Diffusion Perspective**

**8. Calum Baugh**

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**Quantifying the Role of the Amazon Floodplain in Routing Surface Water**

**16. Catie Butler**

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**Natural Chemical Tracers on the Greenland Ice Sheet**

**17. David Button** gldjb@bristol.ac.uk  
**Continuous Character States and their Impact on Pterosaur Phylogeny**

**18. Christina Carter** cc7510@bristol.ac.uk  
**Identifying Tick of Veterinary Importance**

**19. Frances Cartwright** frances.cartwright@bristol.ac.uk  
**Crops Against Climate Change**

**20. Martin Chavez-Hoffmeister** glmfch@bristol.ac.uk  
**The Fossil Record of Penguins in South America**

**21. Broderick Coburn** broderick.coburn@bristol.ac.uk  
**Venus Flytrap – A Bistable Orthotropic Shell Structure**

**22. Olivia Cooke & Samantha Weaver** sweaver.2011@my.bristol.ac.uk  
**Natural Hazards in Guatemala: A Field Study**

**23. Katherine Cooper** k.j.cooper@bristol.ac.uk  
**Investigating the Spatial Distribution of Meteoric Diagenesis: Reactive Transport Modelling of Carbonate Island Systems**

**24. Elena Couce** e.couce.07@bristol.ac.uk  
**A Tale of Two Futures: Climate Change, Geoengineering and the Fate of the World's Coral Reefs**

**25. Gemma Coxon** gemma.coxon@bristol.ac.uk  
**Spaced Out: Linking Model Space to Catchment Space within an Uncertainty Analysis Framework**

**26. Katherine Daniels** k.a.daniels@bristol.ac.uk  
**Modelling Dyke Injection through Numerical Heat Flow Models, Laboratory Analogue Models and Fieldwork**

**27. James Davies** james.davies@bristol.ac.uk  
**Time-Resolved Measurements of Evaporation and Condensation in Single Aerosol Droplets**

**28. Anna Davies** anna.c.davies@bristol.ac.uk  
**Behavioural and Physiological Indicators of Motivation during Animal Decision-Making**

**29. Taraka Davies-Barnard** t.davies-barnard@bristol.ac.uk  
**Climate Cooling and Yield Increase from Natural Variations in Wheat Reflectance**

**30. Mathieu Depoorter** mathieu.depoorter@bristol.ac.uk  
**Resolving Grounding Line Ambiguities around Antarctica from Inter-Comparison and Driving Stress Mapping**

**31. Celia Duff** cd4031@bristol.ac.uk  
**Pepino Mosaic Virus: From Genotype to Phenotype**

**32. Alex Dunhill** alex.dunhill@bristol.ac.uk  
**The Phanerozoic of Great Britain: Biodiversity, Sampling Proxies and the Quality of the Fossil Record**

**33. Julie Dunne** julie.dunne@bristol.ac.uk  
**First Dairying in 'Green' Saharan Arica in the 5<sup>th</sup> Millennium BC**

**34. Sophie Edwards** se1264@bristol.ac.uk  
**A Finite Element Validation of Buzzards**

**35. Samantha Engwell** sam.engwell@bristol.ac.uk  
**The Campanian Ignimbrite Eruption: Inferring Eruption Characteristics from Distal Submarine Deposits**

**36. Davide Foffa** df1818@bristol.ac.uk  
**Digital Modelling Reveals Soft Tissues in a Giant Pliosaur**

**37. Kathryn Ford** kathryn.ford@bristol.ac.uk  
**The Honey Fungus - *Armillaria***

**38. Jonathan Forth** jf0149@bristol.ac.uk  
**Reconstructing *Pantydraco caducus* for better Understanding of the Early Dinosaurs**

**39. Jennifer Frost** jf4889@bristol.ac.uk  
**The Lower Mantle – Earth's Water Tank?**

**40. Edward Gasson** e.gasson@bristol.ac.uk  
**Modelling the Onset of the Cenozoic Antarctic Glaciation**

**41. Ken Groom** ken.groom@bristol.ac.uk  
**Understanding Root Hair Development in Barley**

**42. Amanda Hall** a.c.hall@bristol.ac.uk  
**Observing the Amazon Floodplain with Remote Sensing: ICESat, Radar Altimetry and SRTM**

**43. Becky Harison** becky.harrison@bristol.ac.uk  
**Pesticide Dynamics in Natural Systems: A Catchment Perspective**

**44. Scott Hayes** scott.hayes@bristol.ac.uk  
**How do Plants Judge Sunlight Signals?**

**45. Patrick Hayes** patrick.hayes@bristol.ac.uk  
**Exploring and Manipulating Pleuromutilin Biosynthesis**

**46. Brioch Hemmings** brioch.hemmings@bristol.ac.uk  
**Volcanic Island Hydrology**

**47. James Hickey** james.hickey@bristol.ac.uk  
**Ground Deformation at Uturuncu Volcano, Bolivia: Insights from Finite Element Analysis**

**48. Paul Hope** bzprh@bristol.ac.uk  
**An Entrained Circadian Cycle of Peak Activity in a Population of Hibernating Bats**

**49. Gordon Inglis** gordon.inglis@bristol.ac.uk  
**The Evolution of an Early Eocene Peatbog: Insights into the Paleo-Environment using a Multiple-Biomarker Approach**

**50. Alia Jasim** glzaj@bristol.ac.uk  
**Hydrothermal Alteration: Rock Properties and Modelling**

**51. Sarah Jones** s.e.jones@bristol.ac.uk  
**Carbon Geoengineering: Implications for Ocean Acidification?**

**52. Nancy Jones** nancy.jones@bristol.ac.uk  
**Modelling Coral Reefs in a Changing Climate**

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Reproductive Success and Mating Behaviour in <i>Drosophila birchii</i>		The Isotopic Mass Balance of Zinc in the Oceans	
<b><u>54. Emma Kerridge</u></b>	ek8630@bristol.ac.uk	<b><u>63. Shanna Ludwig</u></b>	Shanna.ludwig@bristol.ac.uk
Fish can Talk too!		Whitebeam ( <i>Sorbus</i> ) Evolution in the Avon Gorge	
<b><u>55. Magdalena Koziol</u></b>	magdalena.koziol@bristol.ac.uk	<b><u>64. Liz Martin</u></b>	em1419@bristol.ac.uk
Construction of Hybrid Enzymes for Production of Novel Secondary Metabolites		Pterosaur: A Massive Problem	
<b><u>56. Stephan Lautenschlager</u></b>	glzsl@bristol.ac.uk	<b><u>65. Daniel Maxwell</u></b>	daniel.maxwell@bristol.ac.uk
Cranial Myology of <i>Erlisosaurus andrewsi</i> Visualised in Three Dimensions		The Effect of Viruses on Polarisation Reflection from Plants	
<b><u>57. Robert Lemanis</u></b>	rl1209@my.bristol.ac.uk	<b><u>66. Jessica McLachlan</u></b>	jessica.mclachlan@bristol.ac.uk
Cranial Functional Morphology of the Phytosaur <i>Ebrachosuchus</i>		Begging for Complexity?	
<b><u>58. Jeanette Di Leo</u></b>	jd7479@bristol.ac.uk	<b><u>67. Sorcha McMahon</u></b>	sorcha.mcmahon@bristol.ac.uk
Deformation and Mantle Flow beneath Eastern Indonesia from Seismic Anisotropy		Carbonate Globules in Calatrava Tuffs: Melts or Solids?	
<b><u>59. Boo Lewis</u></b>	boo.lewis@bristol.ac.uk	<b><u>68. Harriet Mills</u></b>	harriet.mills@bristol.ac.uk
Characterising Mismatch Repair in Bread Wheat		Respondent Driven Sampling and Community Structure in a Population of Injecting Drug Users, Bristol, UK	
<b><u>60. Jamie Lewis</u></b>	jamie.lewis@bristol.ac.uk	<b><u>69. Matt Montgomery</u></b>	cemjm@bristol.ac.uk
Strontium Diagenesis in Teeth		The Application of Systems Dynamics for Sustainable Development	
<b><u>61. Katie Lim</u></b>	k.lim@bristol.ac.uk	<b><u>70. Benjamin Moon</u></b>	benjamin.moon@bristol.ac.uk
Investigating the Microbial Populations Controlling the Production and Oxidation of Methane in Water-Saturated Mineral Soils		Enigmatic <i>Ichthyosaurs</i> from the Late Jurassic	

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Large-Scale Folding in Central Shikoku of the Subduction-type Sanbagawa  
Metamorphic Belt, Southwest Japan

**72. Bolajoko Muhammad-Bashir** bzzmb@bristol.ac.uk  
Climatic Influence on the Distribution and Risk of Ovine Haemonchosis in the UK

**73. Alice Muntzer** alice.muntzer@bristol.ac.uk  
The Impacts of Increased Winter Temperature on the Lipid Content of the Sheep  
Bowfly, *Lucilia sericata*

**74. Rose Murray** rose.murray@bristol.ac.uk  
The Effect of a Virus Infection on Host Stomata

**75. Michaela Musilova** m.musilova@bristol.ac.uk  
'Cryoconite Casserole' – Investigating the Production of Organic Matter on Glaciers

**76. Emma Nelder** emma.nelder@bristol.ac.uk  
Helminths of Domestic Chickens in the UK

**77. Rachael Ogilvie-Harris** r.c.ogilvie-harris@bristol.ac.uk  
An Experimental Investigation of Phase Relations in Kimberlite Melts

**78. Katy Orford** ko6013@bristol.ac.uk  
Engineering Biodiversity: The Implications of Grassland Management on Pollinator  
Communities

**79. Khomaizon Abdul Kadir Pahirulzaman** bzkakp@bristol.ac.uk  
Efficient Expression System for Production of Natural Products in *Aspergillus oryzae*

**80. Edine Pape** ep1097@my.bristol.ac.uk  
Fossil Face to Human Face: Dermal Skeleton of *Moythomasia*

**81. Amy Parker** glalp@bristol.ac.uk  
Volcano Monitoring using InSAR: Cascade Volcanoes

**82. Louise Parry** ggimp@bristol.ac.uk  
The Response of Himalayan Glaciers to Climate Change and its Hydrological Impact

**83. Maxine Penny** maxine.penny@bristol.ac.uk  
Antibiotic Production in Mushrooms

**84. Sharmini Pitter** chzsp@bristol.ac.uk  
Assessing the Fatty Acyl Components of the Pottery of Çatalhöyük, Turkey

**85. Rory Power** rory.power@bristol.ac.uk  
A Platform for Performing Microfluidic Operations in Particle Arrays: A Study of Aerosol  
Coagulation

**86. Andrew Rickards** chamjr@bristol.ac.uk  
Hydroscopicity Measurements of Organic Aerosols with O/C=1

**87. Elspeth Robertson** elspeth.robertson@bristol.ac.uk  
Kenyan Volcanism: A Satellite Perspective

**88. Christopher Rogers** cr8392@bristol.ac.uk  
How Sure can we be that a Dinosaur Species is Valid?

- 89. Navjit Sagoo** n.sagoo@bristol.ac.uk  
**Reduced Pole to Equator Temperature Gradients in Past Warm Climates: A Climate Model and Proxy Data Study Investigating the Range of Climates Possible from Perturbing Uncertain Model Parameters and Boundary Conditions**
- 90. Christopher Sampson** chris.sampson@bristol.ac.uk  
**Merging Airborne and Terrestrial LiDAR Data to Determine Geometric Controls on Flood Propagation in Urban Areas**
- 91. David Schlaphorst** david.schlaphorst@bristol.ac.uk  
**Structure of the Northern Caribbean Plate Boundary Zone from Seismic Anisotropy**
- 92. Anne Schöpa** anne.schopa@bristol.ac.uk  
**The Thermal State of the Crust: A Critical Constraint on the Formation of Large Magma Chambers**
- 93. Laura Senior** laura.senior@bristol.ac.uk  
**Biologically Inspired Synthesis of Functional Nanoparticles**
- 94. Camilla Sharkey** cs7750@bristol.ac.uk  
**Polarisation Vision and Prey Capture in an Aquatic Predator**
- 95. Jessie Shields** jessie.shields@bristol.ac.uk  
**Mobilisation of Highly Viscous Lava Flows and Domes**
- 96. Peter Sirl** peter.sirl@bristol.ac.uk  
**Overwinter Survival Strategies of *Trichostrongylid* Larvae**
- 97. Christopher Smith** chris.smith@bristol.ac.uk  
**Taking Advantage of both U-Th and U-Pb Disequilibrium Methods for Speleothem Geochronology**
- 98. Andy Smith** andy.smith@bristol.ac.uk  
**Hydraulic Modelling of Future Extreme Flows**
- 99. Thomas St. John** ts7403@bristol.ac.uk  
**Engineering Implications of Ground Sulphates**
- 100. Charlotte Stamper** c.stamper@bristol.ac.uk  
**Experimental Determination of the Hydrous Basalt Liquidus: The Grenadan Perspective**
- 101. Olivia Stanford** os8223@bristol.ac.uk  
**Camouflage: To Specialise or to Compromise?**
- 102. Agata Staniewicz** agata.staniewicz@bristol.ac.uk  
**Colour Changes in Juvenile *Tomistoma schlegelii* are Caused by Shifts in Ambient Light Level**
- 103. Laszlo Talas** l.talas@bristol.ac.uk  
**Studying Cultural Evolution Through Science: The Phylogeny of Camouflage Uniform Patterns**
- 104. Andrew Thomson** andrew.thomson@bristol.ac.uk  
**Windows into the Deep: A Study of Sublithospheric Diamond Inclusions from the Juina Region, Brazil**
- 105. Peter Tomiak** peter.tomiak@bristol.ac.uk  
**Testing the Limitations of Artificial Protein Degradation Kinetics Using Know-Age Massive Porites Coral Skeletons**
- 106. Peter Tomiak** peter.tomiak@bristol.ac.uk  
**Establishing the Relative Chronology of Raised Reef Terraces on Barbados Using Amino Acid Racemisation in Fossilised *Acropora palmata* Corals**

**107. Lidia Chaves Torres** chylc@bristol.ac.uk  
Tracing Extractable and Non-Extractable Prokaryotic Membrane Lipids in a 600-year-old Welsh Peat Bog

**108. Vassil Taznov** v.tzanov@bristol.ac.uk  
Bifurcation Analysis of a Vertically Excited Cable Close to its Second Natural Frequency

**109. Philip Usher** glpju@bristol.ac.uk  
Measuring Attenuation of Cotton Valley Microseismic Events

**110. Anthony Veal & Mark Puttick** mp1728@bristol.ac.uk  
Biological Drivers of Diversity

**111. Chris Vernon** chris.vernon@bristol.ac.uk  
Constraining the Surface Mass Balance of the Greenland Ice Sheet

**112. Matt Wale** matt.wale@bristol.ac.uk  
Crabs Unquiet in Noisy Seas

**113. Jack Walpole** jack.walpole@bristol.ac.uk  
Towards Global Observations of Shear Wave Splitting in the Earth's Lowermost Mantle

**114. Tong Wang** tong.wang.10@bristol.ac.uk  
Moisture Requirements for the Migration of *Haemonchus contortus* Larvae

**115. Rachel Warnock** rachel.warnock@bristol.ac.uk  
Exploring Uncertainty in the Calibration of the Molecular Clock

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Mantle Seismic Anisotropy Beneath South-Central Chile

**117. Matthew Whipple** matt.whipple@bristol.ac.uk  
Antarctic Ice Sheet Melt at the Last Interglacial

**118. David Wilby** david.wilby@bristol.ac.uk  
The Quantum Optics of Insect Eyes

**119. Hazel Wilkie** hazel.wilkie@bristol.ac.uk  
Targeted Selective Treatment of Ovine Endoparasites

**120. Maria Williams** maricel.williams@bristol.ac.uk  
The Pelagic Record of Ocean Acidification

**121. Jefferson Wong** jeff.wong@bristol.ac.uk  
Sensitivity Analysis of Hydraulic Model to Morphological Changes and Changes in Flood Inundation Extent

**122. Sally Wood** sally.wood@bristol.ac.uk  
Getting Around? Modelling Coral Connectivity Under Climate Change

**123. Ria Woodfield** ria.woodfield@bristol.ac.uk  
Earthy Taste and Odour in Drinking Water

**124. Qian Xue** chxqx@bristol.ac.uk  
Holocene Climate Change in Central Asia Inferred from Biomarkers of Peat Deposit in Altay Mountains in Northern Xinjiang, China