TUESDAY 6TH JULY

10:30-11:00 **COFFEE**

SESSION I

Chair: David Hogg

11:00-11:05 Welcome - David Hogg
Pro-Vice Chancellor & Professor of Artificial Intelligence

11:05-11:30 LASR workshops & emerging topics
Kanti V Mardia

11:30-11:55 Wavelets in genome sequence and microarray analysis
Pietro Liò

11:55-12:20 Solubility as an evolutionary constraint
Hugh P. Shanahan & Janet M. Thornton*

12:30-1:30 **LUNCH**

SESSION II

Chairs: John Kent, Robert Aykroyd

1:30-2:15 Bayesian shape matching and protein structure alignment
Scott C. Schmidler

2:15-2:40 Interesting problems for learning and statistics in biology
David R. Westhead & James R. Bradford*

2:40-3:05 Bayesian inference for stochastic kinetic genetic networks
Darren Wilkinson & Richard J. Boys*

3:05-3:30 **TEA**

3:30-3:55 Matching protein structure: theory and practice
John T. Kent, Kanti V. Mardia, & Charles C. Taylor**

3:55-4:20 Nonparametric curve estimation on symmetric spaces in high level image analysis
Jeff Lee, Robert Paige, Vic Patrangenaru, & Frits Ruymart*

4:20-4:45 On a surprising connection between morphometrics and bioinformatics
Fred Bookstein

4:45-5.10 Learning Bayesian networks from microarray data using multivariate linear splines
Iosofina Pournara & Lorenz Wernisch*

5:15 **Drinks Reception - Tetley Hall Bar**

In multiple author papers, * indicates the presenter(s).

SESSION III

Chair: Stuart Barber

9:00-9:45 Lifting and multiscale in proteomics
Guy P Nason

9:45-10:10 Wavelet-based bootstrapping for MRI data
Brandon J. Whitcher

10:10 - 11:00 **COFFEE and Posters**

11:00-11:25 Enhanced false discovery rate correction by wavelet-based denoising: An application to human functional MRI data
Levent Şendur, Voichiţa Maxim, Brandon J. Whitcher, & Ed Bullmore*

11:25-11:50 Analysis of complex soil variation using wavelets
Murray Lark

11:50-12:15 Reconstruction of brain images with a spatiotemporal ℓ_1 Markov random field penalized likelihood approach
Sylvain Sardy

12:15-12:30 Photographs
All talk and poster presenters, and session chairs

12:30-1:30 **LUNCH**

SESSION IV

Chair: David Westhead

2:00-2:45 Empirical methods in protein modelling
Michael Sternberg

2:45-3:10 Active site comparison: Assigning function to protein structures
Alexander Stark & Robert B. Russell*

3:10-3:35 A searchable structural database for comparing protein-ligand binding sites for the discovery of structure-function relationships
*Nicola Gold & Richard Jackson**

3:35-3:50 **TEA**

3:50-4:15 On stochastic algorithms for the global optimization problem on a torus
Alexander Veretennikov & E. Zhizhina*

4:15-4:40 Wavelet transform for denoising and quantification of microarray data
Qazi M Ali & Omar Farooq*

7:00- **Conference Dinner - Headingley Cricket Ground**

SESSION V

Chairs: Fred Bookstein, Kanti Mardia

9:00-9:25 Data analysis by regular expressions and the analysis of event sequences
Colin Goodall

9:25-9:50 Bayesian reconstruction of low resolution magnetic resonance imaging modalities
John Kornak, Karl Young, Norbert Schuff, & Andrew Maudsley*

9:50-10:15 Interactive segmentation techniques of volume data sets using CT medical image sequences
Stelios Zimeras & G. Karangelis*

10:15-10:40 Boundary element methods for object tracking applied to electrical tomography problems
Robert G. Aykroyd, Brian A. Cattle, & Robert M. West*

10:40-11:20 **COFFEE**

11:20-11:45 Spatio-temporal modeling and short-term forecasting of fine particulate matter
Sujit K. Sahu

11:45-12:10 Reconstruction of rainfall fields by spatio-temporal models using radar and raingauges measurements in Southern Italy
Giovanna Jona Lasinio & Arianna Orasi*

12:10-12:55 Non-coding RNA detection
Wally Gilks

1:00-2:00 **LUNCH**

POSTERS

Models and estimation for phylogenetic trees
Faisal Ababneh & John Robinson*

Bayesian kriged Kalman filter model assessment using cross-validation
Ali F. Alhajraf & Kanti V. Mardia*

Bayesian analysis of human movement data
Ali K. Alshabani, Ian L. Dryden, & C.D. Litton*

Dominant direction of natural textures using a modified Hough transform approach
*Robert G. Aykroyd & Fathi M.O. Hamed**

Variable bandwidth schemes for local polynomial smoothers via vertical wavelet thresholding
Pierpaolo Brutti & Giovanna Jona Lasinio*

Wavelet analysis for morphological characterization of *Saccharymyces cerivisiae*
Andrei Doncescu, Laurent Manyri, & Sebastien Regis*

Linear smoothing of noisy spatial temporal series
Valter Di Giacinto, Ian Dryden, Luigi Ippoliti, & Luca Romagnoli*

Wavelet packet modelling of seismic data
Alex Goodwin, Stuart Barber, & Robert G. Aykroyd*

Evolutionary futuristic term selection in the group method of data handling (GMDH)
Mutasem Hiassat & Neil Mort*

Wavelet analysis for detection of ECG characteristic waves
Vladimir Johneff

Procrustes statistics for unlabelled points and applications
*Kanti V. Mardia & V. Nyirongo**

Support vector machines-type procedure through kriging
M.A. Matin, K.V. Mardia, & C.C. Taylor*

Using an adaptive lifting scheme in predicting transmembrane helix locations along a protein sequence
Marina Popa & Guy P. Nason*

Spatiotemporal analysis of airflow over hills
Laura Quinn, Stephen J. Mobbs, Kanti V. Mardia, & Simon B. Vosper*

EM algorithm for bivariate circular distributions
*K.V. Mardia, C.C. Taylor, & M. Subramaniam**

Simulating mark correlations in spatial point processes
Chaoshui Xu, P.A. Dowd, Kanti V. Mardia, & R.J. Fowell*