Scottish Phylogeny Discussion Group

University of Glasgow, 30th March 2012

Programme

Scottish
Phylogeny
Discussion
Group

SCOTTISH BIOINFORMATICS FORUM

CEGG

The discussion group will be held in the Gilbert Scott conference rooms, 253 and 356. These are situated within the historic main building of the University, just off the West Quadrangle (see maps at end of programme).

1 PM, Room 253

Buffet lunch and registration.

2 PM, Room 356

Introduction to the Scottish Phylogeny Discussion Group.

Dr Chris Quince, University of Glasgow

2:10 PM, Room 356

Biodiversity Informatics: An Emerging Computational Science.

Dr. Alexandros Stamatakis, Heidelberg Institute for Theoretical Studies

Abstract:

Biodiversity informatics and phyloinformatics in particular are currently facing a paradigm shift toward becoming a 'real' computational science. Molecular sequencing technologies are developing at a rapid pace, providing the biological sciences with enormous amounts of new data. Due to the necessity to process (and store) huge amounts of data, we expect the field to undergo an analogous transition that physics or computational fluid dynamics underwent 20 to 30 years ago. For instance, we are already facing such data analysis challenges in the 1000 insect transcriptome sequencing project (www.1kite.org). Such evolutionary studies require software that scales far beyond a multi-core node, that can be checkpointed and restarted with low overhead, and that can accommodate the memory requirements of whole-genome datasets under likelihood-based models. As an example of the efforts to turn biodiversity informatics into a computational science, I will describe RAxML-Light, a dedicated tool for large-scale phylogenetic inference on supercomputers under maximum likelihood. RAxML-Light implements a light-weight checkpointing mechanism, deploys 128-bit (SSE3) and 256-bit (AVX) vector intrinsics, offers two orthogonal memory saving techniques, and provides a fine-grain production-level MPI (Message Passing Interface) parallelization of the likelihood function. To demonstrate scalability and robustness of the code, we inferred a phylogeny on a simulated DNA alignment (1481 taxa, 20,000,000 bp) using 672 cores. This alignment required one TeraByte of RAM to compute the likelihood score on a single tree.

Web: www.exelixis-lab.org

3:00 PM, Room 356

Calculating likelihoods under the coalescent.

Mr Konrad Lohse, University of Edinburgh

3:20 PM, Room 356

Defining ecotypes on phylogenetic trees from microbiomics data.

Dr Chris Quince

3:40 PM, Room 253
Tea/Coffee.

4:00 PM, Room 356

The population genetics of the human influenza virus.

Dr Trever Bedford

4:20 PM, Room 356

Using placements to learn about microbial ecology.

Dr Erick Matsen – by video conference

4:50-5:30 PM, Room 253

Drinks and general discussion.

The meeting will be followed by dinner at a restaurant in Glasgow. Dinner is open to anyone registered for the meeting, but **requires separate booking in advance**. If you would like dinner, please tell Chris Quince (christopher.quince@glasgow.ac.uk) before 26th March. Dinner will be charged at cost.

Speakers

Trevor Bedford

University of Edinburgh

t.bedford@ed.ac.uk

Konrad Lohse

University of Edinburgh

klohse@staffmail.ed.ac.uk

Erick Matsen

Fred Hutchinson Cancer Research Center

matsen@fhcrc.org

Alexandros Stamatakis

Heidelberg Institute for Theoretical Studies

Alexandros.Stamatakis@h-its.org

Organizer

Chris Quince

School of Engineering

University of Glasgow

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Christopher.quince@glasgow.ac.uk

Further Information

The Scottish Phylogeny Discussion Group is funded by a grant from the Scottish Bioinformatics Forum and by the Centre for Evolution, Genes and Genomics at the University of St Andrews. For information on the Scottish Phylogeny Discussion Group and its activities, please see:

http://biology.st-andrews.ac.uk/cegg/spdg

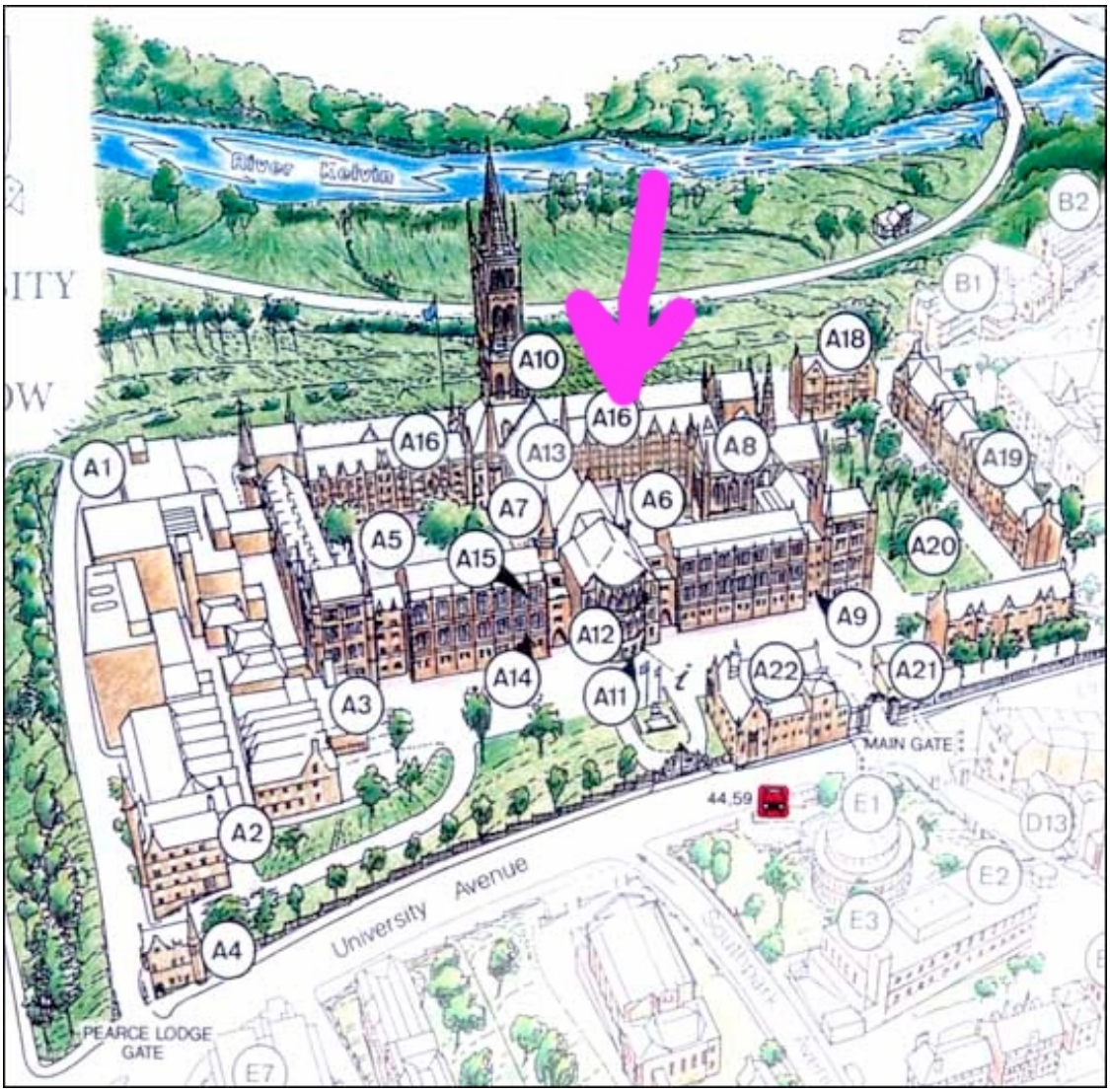
University of Glasgow

Accommodation Services	D14 – 73 Great George St
Accounting & Finance	A24 – Main Building
Adam Smith Building	D8
Adam Smith Research Foundation	E10 – 66 Oakfield Ave
Adult & Continuing Education	E14 – St Andrew's Building, 11 Eldon St
Aerospace Engineering	A1 – James Watt South Building
AMICUS	E13 – 68 Oakfield Av
Alexander Stone Building	D5 – 16 University Gdns
Anatomy	A3 – Thomson Building
Anderson College	C1
Archaeology	D2 – Gregory Building
Archive Services	C7 – 13 Thurso St
	C10 – 77-87 Dumbarton Road
Arts, College of (Office)	D15 – 6 University Gdns
Arts, College of (ArtsLab)	D5 – Sir Alexander Stone Building
Bedellus Office	A24 – Main Building
Biodiversity, Animal Health & Comparative Medicine, Institute of	B3 – Graham Kerr Building
BHF Glasgow Cardiovascular Research Centre	C12 – University Place
(Glasgow) Biomedical Research Centre	C13 – University Place
Sir Graeme Davies Building	B7
Bower Building	D1
Boyd Orr Building	A9 – West Quadrangle
Business School	A13
Bute Hall	C12 – University Place
Cardiovascular & Medical Sciences, Institute of	E2 – Fraser Building
Careers Service	A10 – Main Building
Carnegie Hall	E11 – 15 Southpark Avenue
Catholic Chaplaincy	D15 – 3 University Gdns
Celtic & Gaelic	D16 – 9-9 Lilybank Gdns
Central & East European Studies	B6 – Estates & Buildings Office
Central Room Bookings	A21 – Main Gatehouse
Central Services	C3-89 Dumbarton Road
Centre for Cognitive Neuroimaging	C4 – 8 Church Street
Centre for Drugs Misuse Research	D32 – 1 Bute Lane
Centre for Virus Research	A8
Chapel	A24 – Main Building
Chaplaincy	B4 – Joseph Black Building
Chemistry, School of	E14 – St Andrew's Building, 11 Eldon St
Children's Panel Training Group	E7 – Rankine Building
Civil Engineering	E10 – 65 Oakfield Av
Classics	Western Infirmary
Clinical Physics	D16 - 17 Lilybank Gdns
Computing Science, School of	D20 – Sir Alwyn Williams Building
Computing Service	A2 – James Watt North Building
Concert Hall	A12
Conference & Visitor Services	A20 – 3 The Square
Corporate Communications	A20 – 1 The Square
Court Office	A10 – Main Building
Critical Studies, School of (Head of School Admin)	D15 – 5 University Gdns
Critical Studies, School of (Student & Staff Support)	D15 – 4 University Gdns
Culture & Creative Arts, School of (Student & Staff Support)	D15 – 8 University Gdns
Critical Studies, School of (Theatre, Film & TV Studies)	E9 -Gilmorehill Centre
Davidson Building	B1
Dermatology (School of Medicine)	C2 – Robertson Building
Development & Alumni Office	A20 – 2 The Square
Disability Service	E10 – 65 Southpark Avenue
East Quadrangle	A5
East Quad. Lecture Theatre	A25
Economic & Social History	D8 – Lilybank House
Economics	D8 – Adam Smith Building
Education, School of	D1 – Boyd Orr Building E14 – St Andrew's Building, 11 Eldon St
Electronics & Electrical Engineering, School of	A1 – James Watt South Building
English Language	D15 – 12 University Gdns
English Literature	D15-4 5 University Gdns
Equality & Diversity Unit	A10 – Main Building
Estates & Buildings	B6 – Botany Gate

Finance Office	A16 – Main Building
Florentine House (College of Social Sciences)	E4
Fore Hall	A6 – Main Building adjoining Chapel
Forensic Medicine & Science (School of Medicine)	B4 – Joseph Black Building
Fraser Building	E2
French Language & Literature	D10 – Hetherington Building
Gardiner Institute	C6 – Western Infirmary
UCU	E13 – 68 Oakfield Av
Geographical & Earth Sciences, School of	A25 - East Quadrangle
George Service House	D7
German	D10 – Hetherington Building
Gilmorehill Centre	E9 – 9 University Av
Glasgow International College	C1 – Anderson College & C2 – Robertson
Glasgow University Sports Association	E13 – 62 Oakfield Av
Glasgow University Union	E8 – 32 University Av
Graham Kerr Building	B3
HATII – College of Arts	D7 – George Service
Hetherington Building	D10
Hetherington House	D6 – 13 University Gdns
Hispanic Studies	D10 – Hetherington Building
History	D15 -10 University Gdns
History (Medieval)	D15 -10 University Gdns
History (Modern)	D15-12 University Gdns
History (Scottish)	D15 – 9 University Gdns
History of Art	D15 – 7 University Gdns
Hospitality Services	A6 – 1a The Square
Humanities, School of (Student & Staff Support)	D15 – 1 University Gdns
Humanities, School of (Classics & Philosophy)	E13 – 69 Oakfield Ave
Human Resources	A10 – Main Building
Hunter Halls	A14 – Main Building
Hunterian Art Gallery	D12 – Hillhead St
Hunterian Museum	A15 – Main Building
Infection, Immunity & Inflammation, Institute of	C12 – University Place
Italian	D10 – Hetherington Building
James Watt North Building	A2
James Watt South Building	A3
Joseph Black Building	B4
John McIntyre Building	A22
Kelvin Building	B8
Kelvin Gallery	A7 – Hunterian Museum
Language Centre & EFL Unit	D10 – Hetherington Building
Law, School of	A19 -Star Building & D5 – Sir Alexander Stone Building
Learning & Teaching Centre	E5 – Southpark House
Library	D11 – Hillhead St
Life Sciences, School of (Main Office)	B7 Bower Building
Life Sciences, School of (Support)	B00 Wolfson Building
Lilybank House	D8
Mackintosh House	D13 – Hunterian Art Gallery
McMillan Reading Room	E1
Mail Room	D1 – Boyd Orr Building
Main Building	A10
Main Gatehouse (Security)	A21 – Main Gate, University Av
Management Information Services	A10 – Main Building
Mathematics & Statistics, School of	D4 – Maths Building
Mechanical Engineering	A1 – James Watt South Building
Medical, Veterinary & Life Sciences, College of (Admin)	C8 – Wolfson Medical School Building
Medical, Veterinary & Life Sciences, College of (Graduate School)	C8 – Wolfson Medical School Building
Medicine, School of	C8 – Wolfson Medical School Building
Modern Languages & Cultures, School of	D10 – Hetherington Building
Molecular, Cell & Systems Biology, Institute of	C13 – University Place
MRC Social & Public Health Sciences Unit	D16 – 4-7 Lilybank Gdns

Music	D15 -14 University Gdns
Neuroscience & Psychology, Institute of	D18 – Hillhead Street
Nursery	D31 – 28 Hillhead St
Nursing & Health Care	E10 -57-61 Oakfield Av
Occupational Health	E10 – 63 Oakfield Av
Officer Training Corps	B5 – University Place
One A The Square	A9
Pearce Lodge	A4
Philosophy	E10 -67-69 Oakfield Av
Photographic Unit	D11 – University Library
Physics & Astronomy, School of	B8 – Kelvin Building
Planning Office	A10 – Main Building
Politics	D8 – Adam Smith Building
Pontecorvo Building	C3
Principal's Lodgings	A18 – 12 The Square
Principal's Office	A10 – Main Building
Print Unit (Gilmorehill)	A23 – James Watt South Building
Psychology, School of	D18 – Hillhead Street
Public Health	D16 – 1,2 & 3 Lilybank Gdns
Purchasing Office	A10 – Main Building
Queen Margaret Union	D3 – 32 University Gdns
Radiation Protection Service	B8 – Kelvin Building
Randolph Hall	A10 – Main Building
Rankine Building	E7
Recruitment & International Office	E12 – 71 Southpark Ave
Rector's Office	A10 – Main Building
Registry	E2 – Fraser Building
Research & Enterprise	A19 – 10-11 The Square
Residential Services	D14 – 73 Great George Street
Robert Clark Centre for Technological Education	E14 – St Andrew's Building, 11 Eldon St
Robertson Building	C2
Robing Room	A12 – Main Building (enter via Hunterian Museum stair)
Safety & Environmental Protection Services	A4 – Pearce Lodge
Science & Engineering, College of	D1 – Boyd Orr Building D15 -6 University Gdns
Scottish Literature	A21 – Main Gatehouse
Security (Central Services)	A10 – Main Building
Senate Office	E14 – St Andrew's Building, 11 Eldon St
Sir Alexander Stone Building	D5 -16 University Gdns
Sir Charles Wilson Building	E10 – 59 University Av
Slavonic Studies	D10 – Hetherington Building
Sociology	D8 – Adam Smith Building
Sociology (Scottish Centre for Crime & Justice Research)	E16 – 63 Gibson St
Southpark House	E5
Social & Political Sciences, School of	D8 Adam Smith Building
Social Science, College of (Admin)	E4 - Florentine House
Sport & Recreation Service	E6 – Stevenson Building
Staff Development Service	A10 – Main Building
Stair Building	A19
St. Andrew's Building	E14 – Eldon St
Statistics	D4 – Maths Building
Stevenson Building	E6
Student Counselling & Advisory Service	E12 – 65 Southpark Av
Student Services Enquiries Desk	E2 – Fraser Building
Students' Representative Council (SRC)	A22 – John McIntyre Building
Telephone Exchange	A10 – Main Building
TQMU	E13 – 68 Oakfield Av
Theatre Film & TV Studies	E9 -Gilmorehill Centre
Theology & Religious Studies	A20 – 4 The Square
Thomson Building	A3
Transport Services	C7 – 11 Thurso St
Tutorial Room	A10 – Main Building
UNIQUE	A13 – 68 Oakfield Av
Urban Studies	D17 – 25 Bute Gdns
Visitor Centre	A11 – Main Building
Weir Medical Building	B2
West Quadrangle	A6
Western Clinical Research & Education Centre	C5- Western Infirmary
Western Infirmary Lecture Theatre	B9
Wildlife Garden	D19
Wolfson Building	B10
Wolfson Medical School Building	C8
Zoology Museum	B3 – Graham Kerr Building

*Updated - January 2012


River Cavern
B2
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A9
A12
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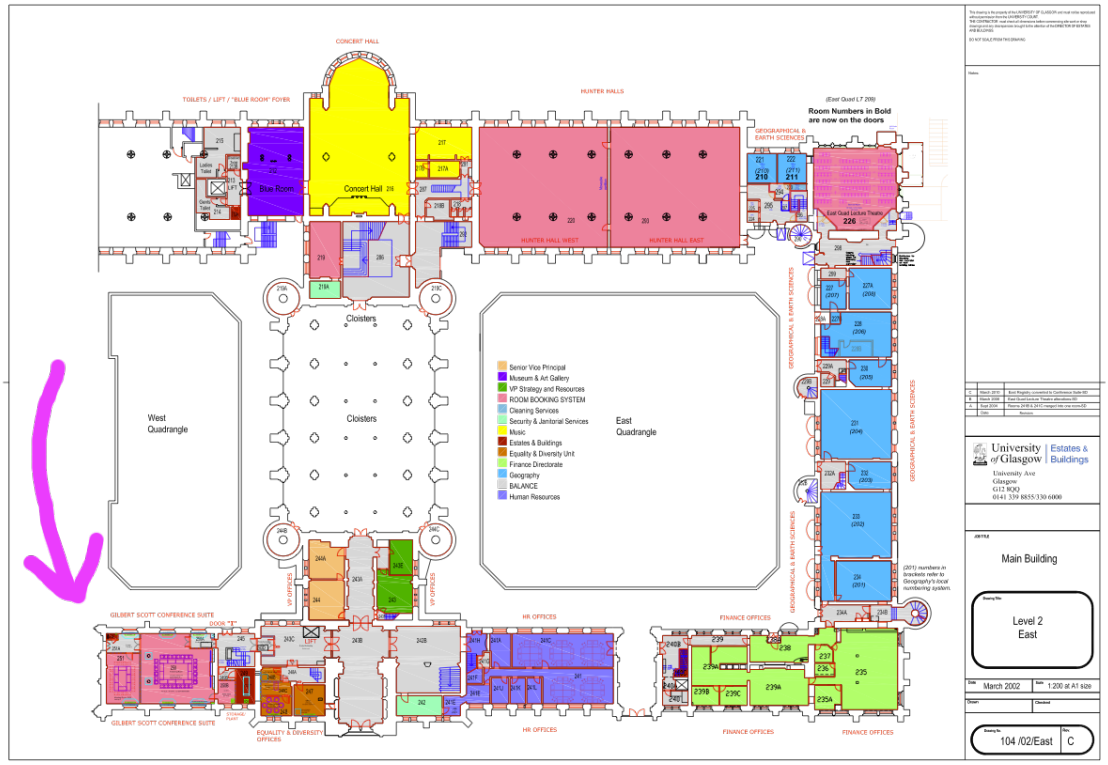
A22
A21
A3
A11
MAIN GATE
44,59
E1
D13
E2
A2
University Avenue
E3
A4
PEARCE LODGE GATE
E7


CONCERT HALL
TOILETS / LIFT / "BLUE ROOM" FOYER
HUNTER HALLS
Room Numbers in Bold
are now on the doors
GEOGRAPHICAL & EARTH SCIENCES
Blue Room
Concert Hall
HUNTER HALL WEST
HUNTER HALL EAST
East Quad Lecture Theatre
226
Cloisters
Cloisters
West
Quadrangle
East
Quadrangle
Senior Vice Principal
Museum & Art Gallery
VP Strategy and Resources
ROOM BOOKING SYSTEM
Cleaning Services
Security & Janitorial Services
Music
Estates & Buildings
Equality & Diversity Unit
Finance Directorate
Geography
BALANCE
Human Resources
VP OFFICES
GILBERT SCOTT CONFERENCE SUITE
DOOR "T"
EQUALITY & DIVERSITY OFFICES
HR OFFICES
FINANCE OFFICES
(2011) numbers in brackets refer to Geography's local numbering system.
University of Glasgow | Estates & Buildings
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Glasgow
G12 8QQ
0141 339 8855/330 6000
Main Building
Level 2
East
March 2002
1:200 at A1 size
104 /02/East
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