

Curriculum vitae: Paul Barton RAINEY

PERSONAL DETAILS

Address (home) 320 Duck Creek Road, Stillwater 0993, Auckland, New Zealand
Tel + 64 21 663 946

Address (work) NZ Institute for Advanced Study, Massey University, Private Bag 102 904, North Shore Mail Centre, Auckland 0745, New Zealand.
Tel +64 9 4140800 x 41107;
Web: evolution.massey.ac.nz/rainey
Email: p.b.rainey@massey.ac.nz

MPI for Evolutionary Biology
August-Thienemann-Strasse 2, 24306 Plön, Germany.
Tel +49 4522 763236
Web: www.evolbio.mpg.de/english
Email: rainey@evolbio.mpg.de

Date of Birth 14th February, 1962
Place of Birth Christchurch, New Zealand
Nationality New Zealand & United Kingdom (by naturalisation)
Health Excellent

CURRENT POSITION

2007- Distinguished Professor of Evolutionary Genetics, NZ Institute for Advanced Study, Massey University; Visiting Professor & Co-Director, Hopkins Microbiology Course, Stanford University; Principal Investigator, Allan Wilson Centre for Molecular Ecology and Evolution; Member, Max Planck Society and External Scientific Member (Honorary Director), Max Planck Institute for Evolutionary Biology, Plön, Germany; Principal Investigator, Infectious Diseases Research Centre, Massey University; Senior Adjunct Researcher, EAWAG, Switzerland.

EDUCATION

University

1986-89 Ph.D. University of Canterbury, New Zealand. Thesis: The role of *Pseudomonas putida* in basidiome initiation of the cultivated mushroom, *Agaricus bisporus*. Three months during 1987 spent working at Horticultural Research International, Littlehampton, United Kingdom.

1984-86 M.Sc. (1st class hon). University of Canterbury, New Zealand. Thesis: A study of physical, chemical and biological properties of the mushroom casing layer.

1983 Overseas travel.

1979-82 B.Sc. (Botany), University of Canterbury, New Zealand.

Secondary School

1975-79 Scots College, New Zealand. Captain of swimming and athletics, First XI.
1979 University Bursary.
1978 University Entrance.

FELLOWSHIPS AND ACADEMIC AWARDS

2014 Einstein Professor, Chinese Academy of Sciences
2014 KITP Simons Distinguished Visiting Scholar, University of California Santa Barbara
2014 ENS Visiting Professor, Institut de Biologie de l'École Normale Supérieure

2013 CNRS Visiting Professor, Departement de Physique de l'École Normale Supérieure
 2013 KITP Simons Distinguished Visiting Scholar, University of California Santa Barbara
 2012 Title of Distinguished Professor Conferred by Massey University
 2011- Member of the Max Planck Society and External Scientific Member (Honorary
 Director) Max Planck Institute for Evolutionary Biology, Plön, Germany
 2010 James Cook Research Fellowship
 2007 Elected Fellow of the Academy of the Royal Society of NZ (FRSNZ)
 2007- Senior Adjunct Researcher, EAWAG, Switzerland
 2006- Visiting Professor, Stanford University
 1994-1999 Biotechnology and Biological Sciences Research Council Advanced Research
 Fellow, University of Oxford
 1994-1997 BTP Fellowship in Microbiology and Molecular Genetics at Pembroke College
 1988 William Georgetti Scholarship
 1988 New Zealand Microbiological Society Ph.D. Prize
 1986 University Grants Committee Scholarship

PREVIOUS POSITIONS

Oct 08-July 09 Director, Allan Wilson Centre for Molecular Ecology & Evolution.
 2003-2007 Chair of Ecology and Evolution, School of Biological Sciences, University of
 Auckland (95% appointment from 2003 – 2005); Acting Deputy Director (Research)
 June 2005-Dec 2005.
 2003-2005 International Professor of Biology (5% appointment), Department of Plant Sciences,
 University of Oxford (funded through the Division of Life and Environment
 Sciences); Senior Research Fellow, St Cross College; Visiting Professor, Wadham
 College.
 1997-2003 Stipendary Lecturer, Wadham College, Oxford.
 1997-2005 Fellow of St Cross College, Oxford
 1996-2002 University Lecturer in Microbial Ecology and Population Genetics, Department
 of Plant Sciences, University of Oxford.
 1994-1999 BBSRC Advanced Research Fellow, Department of Plant Sciences, University
 of Oxford.
 1991-1994 Higher Scientific Officer, Molecular Microbial Ecology, Institute of Virology
 and Environmental Microbiology, Oxford: *Pseudomonas fluorescens* genome
 mapping, microbial population ecology, ecological divergence in *Pseudomonas*.
 1989-1991 Post Doctoral Research Scientist, Microbial Physiology Group, Department of
 Plant Sciences, Cambridge University: Biochemistry and molecular genetics of
 tolaasin toxin production by *Pseudomonas tolaasii*. Visiting associate, Clare
 Hall, Cambridge.

RESEARCH GRANTS

2013	d'Urville Fund (RSNZ)	Molecular noise	\$NZ 20k
2013	Canadian Health Research	Cystic fibrosis 1000 genomes	Funded
2012	MSI (with P&FR)	Psa genetics and resistant kiwifruit	\$NZ 6,000k
2012	Templeton Foundation	Evolution of emergence	\$US 200k
2012	Marden Fund (NZ)	Evolution of multicellularity	\$NZ 500k
2012	KVH	Psa population genomics	\$NZ 35k
2011	Zespri International	Population genomics of PSA	\$NZ 140k
2010	James Cook Fellowship	Extending the Modern Synthesis	\$NZ 240k
2010	Marsden Fund (NZ)	Principles of genetic evolution	\$NZ 870k
2010	NIH (with SDSU)	Ecology of the CF lung	Funded
2010	Auckland Regional Council	Population genetics of sea slugs	\$NZ 180k
2009	TCPH (with four others)	Population genetics of <i>P. aeruginosa</i>	\$NZ 75k

2008	Marsden Fund (NZ)	Evolution of multicellularity	\$NZ 900k
2008	Paykel Trust	Small equipment grant	\$NZ 10k
2007	TEC (with eleven others)	Allan Wilson Centre	\$NZ 3,000k pa
2007	UARC (with two others)	Genetic structure of Staphylococcus	\$NZ 93k
2006	UARC (NZ)	Evolution of virulence	\$NZ 120k
2005	DOE (US)	Burkholderia genomics	3 genomes
2005	Marsden Fund (NZ)	Signalling and transport	\$NZ 730k
2004	UARC (NZ)	Vibrio population genetics	\$NZ 30k
2003	Marsden Fund (NZ)	Reverse evolution	\$NZ 630k
2003	NERF (NZ) (with six others)	Genomics of Acidovorax	\$NZ 6,000k
2002	EU	Genomics of Pseudomonas	£150k
2001	NERC	Adaptive evolution	£440k
2001	BBSRC	Novel bacterial polymers	£97k
2001	BBSRC	Rhizosphere gene expression	£200k
2001	BBSRC	P. fluorescens genome	£385k
2001	Sainsbury Foundation	Gatsby Studentship	£70k
2001	NZ Crop & Food	Fitness traits and plastic degradation	£60k
2000	BBSRC	Special Research Studentship	£70k
2000	BBSRC	Type III secretion	£200k
2000	Wellcome Trust	RNA phage evolution	£70k
1999	NERC	Plasmid encoded fitness traits	£200k
1999	NZ Crop & Food	Determinants of pathogenicity	£30k
1998	NERC	Niche specificity	£166k
1998	BBSRC	High res map	£91k
1998	EU	Determinants of fitness	£85k
1998	Sutcliffe Speakman	DNA Sequencer	£25k
1998	University of Oxford	DNA Sequencer	£25k
1997	BBSRC	Molecular basis of rhizosphere ecology	£150k
1997	Royal Society	Pseudomonas-plant signal exchange	£10 k
1997	BBSRC	Commonalities in colonization	£50 k
1995	Nipa Laboratories	In vivo expression technology	£50 k
1995	BBSRC	Population genetics	£70 k
1994	Royal Society Small Grant	Population genetics	£10 k
1994	BTP plc	Contingency loci in Pseudomonas	£15 k
1994	University Pump-Priming	Population genetics	£10 k
1994	BBSRC	Determinants of ecological success	£250k

GRADUATE SUPERVISION

Current (PhD only)

Orso Romano (2014-) with Silvia De Monte, ENS, Paris. Stochastic switching

Chhavi Chawla (2013-) NZIAS PhD Studentship. Experimental transitions in individuality.

Elena Colombi (2013-) Zespri. Evolution of Psa

Yuriy Pichiguin (2010-) Marsden Fund. Mathematical models of major transitions

Yeserin Yildirim (2010-) Allan Wilson Centre PhD Scholarship. Genetics of sea slugs

Thomas Finn (2010-) Marsden Fund. Evolution under anaerobiosis

Sonal Shawamarani (2010-) Marsden Fund. Evolution under anaerobiosis

Andy Farr (2009-) NZIAS PhD Studentship. Reverse evolution

Yunhou Liu (2009-) Massey University Doctoral Scholarship. Catabolite repression.

Caroline Rose (2008-) Massey University Doctoral Scholarship. Evolution of multicellularity

Completed (PhD / D. Phil. only)

Sylke Nestmann (2008-) NZIAS PhD Studentship. Genetics of adaptive evolution [currently post doc, NZIAS]

Frederic Bertels (2008-2011). Allan Wilson Centre PhD Scholarship. Evolution of palindromic repeats [currently post doc, BioZentrum, Basel]

Jenna Gallie (2006-2009). FRST Bright Futures Scholarship. Evolution of a mutable switch [currently post doc, ETH, Zurich]

McDonald (2005-2008). NERF. Molecular analysis of AWS [currently post doc, Harvard]

Peter Meintjes (2005-2008). FRST Bright Futures Scholarship. Evolution of cooperation [currently scientific advisor for BioMatters]

Jacob Malone (2002-2005). D. Phil. BBSRC. Biochemistry of GGDEF domain proteins [currently faculty, University of East Anglia, UK]

Stefanie Gehrig (2002-2005). D. Phil. Gatsby Charitable Foundation. Genetics of adaptive evolution [currently commissioning editor, Oxford University Press]

Michael Brockhurst (2000-2003). D. Phil. Wellcome Trust. Evolution of virulence [currently faculty at University of York]

John Bohannon (1999-2002). D. Phil. Christopher Welch Scholarship. Spatial localisation of cellulose biosynthetic enzymes [currently free-lance writer for Science]

Patrick Goymer (1999-2002). D. Phil. BBSRC. Genetics of adaptive evolution [currently deputy biological sciences editor, Nature]

Eleni Bantinaki (1998-2002). D. Phil. BBSRC. Genetics of adaptive evolution [currently scientist, Oxford biotech company]

Micaela Gal (1999-2003). D. Phil. BTP Ltd. IVET development and application to the plant rhizosphere [currently PHLS, Cardiff]

Sophie Kahn (1995-1998). D. Phil. University of Oxford. Experimental evolution: genetics of adaptation.

Bernhard Haubold (1994-1997). D. Phil. BBSRC. Population genetics of Pseudomonas [currently faculty member Max Planck Institute for Evolution, Ploen]

Postdoctoral Researchers (current)

Chaitanya Gokhale (2014-) NZIAS Postdoctoral Fellowship. Biological theory

Honour McCann (2013-) MPI. Psa evolution and virulence.

Philippe Remigi (2013-) James Cook Fellowship. Stochastic switching

Peter Lind (2011-) Marsden Fund. Principles of genetic evolution

Sylke Nestmann (2013-) Templeton Fund. Multi-level selection

Katrin Hammerschmidt (2009-) Marsden Fund. Evolution of individuality

Postdoctoral Researchers (alumni)

Eric Libby (2010-13) NZIAS Postdoctoral Fellowship. Biological theory [currently Research Fellow, Santa Fe Institute]

Heather Hendrickson (2011-) James Cook. Principles of genetic evolution [currently Lecturer, INMS, Massey University]

Steve Ritchie (2010-12) Allan Wilson Centre. Evolution of infectious disease [currently University of Auckland]

Xue-Xian Zhang (2003-12), NZIAS Fellow, Massey University. Genetics of histidine regulation [currently Senior Lecturer, INMS, Massey University]

Monica Gerth (2008-11) FRST Postdoctoral Fellowship. The HutD governor of gene expression [completed August 2011 and now University of Otago]

Gayle Ferguson (2008-11) FRST Postdoctoral Fellowship. Evolution of a mutable switch [completed October 2011 and now Senior Tutor INS, still works in my team]

Jonathan Gauntlet (2008-2010) Marsden Fund. Signalling and transport [currently Ondek, Perth, Australia]

Christian Kost (2007-2009) Humboldt Fellow. Unravelling the effects of history in evolution [currently Max Planck Institute for Chemical Ecology, Jena]

Dominik Refardt (2005-2008) Swiss National Science. Evolution of virulence [currently ETH (Theoretical Biology)]

Bertus Beaumont (2004-2007) Marsden Fund. Reverse evolution [currently Faculty Kavli Institute for NanoScience, Delft University]

Darby Brown (2006-2007) Marsden Fund. Signalling and transport [currently teaching in Wisconsin]

Christina Moon (2002-2005) BBSRC. Spatial and temporal distribution of signals in the plant-root environment [currently scientist, AgResearch, Palmerston North, NZ]

Stephen Giddens (2002-2005) EU. Pseudomonas genomics [currently post doc, Plant Sciences, Oxford]

Robert Jackson (2001-2004) BBSRC. Type three secretion and translocation of effector proteins [currently faculty, University of Reading]

Christopher Knight (2001-2004) NERC. A proteomic perspective on adaptive evolution [currently post doc, UMIST]

Rees Kassen (1999-2004) NSERC. Evolution of diversity [currently faculty, University of Ottawa]

Xue-Xian Zhang (2000-2003) NERC. Molecular analysis of indigenous plasmids [currently, Senior Research Fellow, Massey University]

Angus Buckling (1999-2002) NERC. Evolution in temporally varying regimes [currently Royal Society URF & Lecturer, Zoology, Oxford]

Ruth Massey (1998-2000) EU. Rhizosphere biology [currently Departmental Lecturer, Zoology, Oxford]

Gail Preston (1997-2000) BBSRC. Type three secretion in plant-microbe interactions [currently Royal Society URF, Plant Sciences, Oxford]

Andrew Spiers (1997-2005) BBSRC / University of Oxford. *Pseudomonas* genetics [currently senior lecture, University of Abertay]

Michael Travisano (1997-1999) BBSRC. Adaptive radiation [currently faculty at University of Minnesota]

OTHER ACTIVITIES

Appointments and elected posts

- 2013-14 Scientific Advisory Board, Isaac Newton Programme on Microbial Communities, Cambridge, United Kingdom.
- 2012 Ministry for Primary Industries Technical Advisory Group (Psa and pollen).
- 2011- International Scientific Advisory Board 'Laboratories of Excellence': Federative Research Institute 'Agrobiosciences, Interactions and Biodiversity', Toulouse, France.
- 2011- International Scientific Advisory Board for *Pseudomonas syringae* pv. *actinidiae* (PSA), Zespri, International Ltd.
- 2011-12 Tertiary Education Commission (NZ), Performance-Based Research Fund Assessment Panel, Biology
- 2010-12 Section Editor (evolutionary and population genetics), *Encyclopaedia of Genetics* Elsevier, Oxford.
- 2009- Faculty 1000 (evolutionary genetics)
- 2009-10 Tertiary Education Commission (NZ), forwarding planning committee (PBRF)
- 2007 RQF Assessment Panel (RQF Pre-Implementation Trial) James Cook University
- 2007- Member HRC Advisory Board, University of Otago (Programme Grant to Prof Andrew Mercer)
- 2005-06 Tertiary Education Commission (NZ), Performance-Based Research Fund Assessment Panel, Biology
- 2005-09 Editor, *Proceedings of the Royal Society (London) B*
- 2003 Elected Vice Chair (2005) and Chair (2007), Gordon Research Conference on the Population Biology of Microbes
- 2003 Health Research Council (NZ) BMAC3 Grant Review Committee
- 2000-02 BBSRC, Plants & Microbial Sciences Committee
- 2000- NERC Steering Committee on Environmental Genomics
- 1997 USDA Advisory Group on GMO risk assessment, Washington

Service contributions (to profession)

- 2012- James Cook Fellowship Selection Committee
- 2011 Session Convenor, ASM General Meeting, New Orleans
- 2009- Fellowship Selection Committee (Ecological and Environmental Sciences). Royal Society of NZ
- 2008 Australian Society for Evolution, Council Member
- 2007 Chair, Gordon Research Conference on Microbial Population Biology
- 2007 Session Convenor, ASM Biofilms Meeting, Quebec
- 2006- Co-Director, Hopkins Microbial Diversity Programme, Stanford University
- 2006 Convener: Experimental Evolution, International Society for Microbial Ecology 11, Vienna
- 2005-2009 Editor, *Ecology Letters*
- 2005-2009 Editor, *Proceedings of the Royal Society (London) B*
- 2005- Editor, *BMC Evolution*
- 2005 Co-convenor, Queenstown Molecular Biology Meeting (speakers included Nobel Laureates, Members of the National Academy of Sciences)
- 2005 Vice Chair, Gordon Research Conference on Microbial Population Biology
- 2004 Assessor for the ETH Medal (ETH Zurich)
- 2004 Assessor of a Member of the National Academy of Sciences for special recognition (UC Berkeley)
- 2004 External Advisor for professorial appointment at the University of Exeter
- 2004 Review of the PRLTI-funded Programme at The Biosciences Institute at University College Cork for HEA (Ireland)
- 2003-2005 Editor, *FEMS Microbiology Ecology*
- 2000- Editorial Board, *Environmental Microbiology*
- 1999-2004 Reviews Editor, *Microbiology*,

1997-1999 Editorial Board, Microbiology
 1999-2002 Advisory Board for the European Programme in Pseudomonas Biology
 1999-2003 International Advisory Board for the international Pseudomonas Biology meeting

Service contributions (Massey University)

2012- Group Leader, Biological Sciences, Institute of Mathematics and Natural Sciences
 2009 Discipline Leader (Biology), Institute of Natural Sciences
 2008 Building Committees (Interim Science Building and West Precinct Development)

Service contributions (University of Auckland)

2005 Deputy Director Research (acting)
 2004-2005 Head, Ecology & Evolution Section
 2003 Member, Professorial Committee to advise on appointment of the Vice Chancellor
 2003-2007 Member, Departmental Staffing Advisory Committee
 2003-2007 Appointment Committees (various)
 2003-2007 Faculty of Science pre-submission grant panel

Service contributions (University of Oxford)

2002 Departmental Strategy Committee
 1997-2003 Wine Steward, St Cross College
 1996-2000 Biological Safety Officer

Industry

2000-2005 Scientific Advisory Board, Evolva
 2004 Founder (with two others), Nuveris

Miscellaneous

I am frequently asked to review papers, grants, book proposals and so forth for a wide range of organisations. I have examined theses at various institutions throughout the world.

UNIVERSITY TEACHING

Massey University

Introductory cell biology	Stage I
Evolution and the origins of life	Stage II (course co-ordinator)
Genetics and genomics	Stage III

University of Auckland

Microbial genetics	Stage I
Evolution and origins of life	Stage II (course developer and co-ordinator)
Evolution	Stage III
Advanced genetics	MSc seminar programme (co-ordinator)

Stanford University

Hopkins Microbial Diversity	Four week postgraduate course (Co-Director); Hopkins Marine Station, Monterey Bay, CA (Stanford University)
-----------------------------	---

University of Oxford

Tutorials in biology	Wadham College
Population biology	Stage I
Evolution and systematics	Stage II
Plant-microbe interactions	Stage III
Examiner (mods)	

Cambridge University

Supervisions	
Plant microbe interactions	Stage III

**INVITED CONFERENCE PRESENTATIONS, PLENARY PRESENTATIONS AND LECTURES
(2003-2014)**

- 2014 KAVLI Institute for Theoretical Physics, University of California Santa Barbara
Cooperation, conflict, and the major evolutionary transition to multicellularity
Department of Biology, Georgia Tech
Cooperation, conflict, and the major evolutionary transition to multicellularity
Department of Biology, Emory University
Cooperation, conflict, and the major evolutionary transition to multicellularity
Ecology, Evolution and Behaviour Colloquium, Princeton
Cooperation, conflict, and the major evolutionary transition to multicellularity
Centre for Infectious Disease Dynamics (Pennsylvania State University)
Multilevel selection and implications for understanding pathogen evolution
Harvard School of Public Health
Multilevel selection and implications for understanding pathogen evolution
Department of Organismal and Evolutionary Biology, Harvard
Cooperation, conflict, and the major evolutionary transition to multicellularity
Keystone Symposium on Plant Signalling (Breckenridge, CO)
Evolution of development
- 2013 University of Oxford (Oxford)
Cooperation, conflict, and the major evolutionary transition to multicellularity
University of Reading (Reading)
Transitions in Darwinian individuality
Phenotypic heterogeneity and sociobiology of bacteria, DFG (Munich)
Evolution of bet hedging
TSRC Town Talk (Telluride, CO)
Evolution of disease
TSRC Cystic Fibrosis meeting (Telluride, CO)
Are microbes really social?
IMNS Seminar Series (Massey)
Rate of evolution in structured populations
Harvey Mudd College (Los Angeles)
Evolution of bet hedging
University of Colorado (Fort Collins)
Cooperation, conflict and the major evolutionary transition to multicellularity
NESCent, Duke University (North Carolina)
Cooperation, conflict and the major evolutionary transition to multicellularity
EMBO: model systems in ecology and evolution (Heidelberg)
Transitions in individuality
European Conference on Clinical Microbiology & Infectious Disease (Berlin)
Stochastic phenotype switching
École Normal Supérieure (Paris)
Evolution of bet hedging
Cooperation, conflict and the major transition to multicellularity
Max Planck Institute for Evolutionary Biology (Ploen)
Evolution of bet hedging
KITP workshop on the evolution of multicellularity (Santa Barbara)
Evolution of individuality
Life cycles transition Darwinian individuality
Vienna Graduate School in Population Genetics (Vetmeduni)
Development as a causal process in evolution
- 2012 Massey University
Evolution of bet hedging
q-Bio, Santa Fe, New Mexico
Transitions in Darwinian individuality
University of Auckland, Bioengineering Institute
The evolution of Individuality
Royal Society of New Zealand (Auckland)

Rules of genetic evolution
National Academy of Sciences (USA): Microbial Threats (Washington)
The evolutionary ecology of an evolutionary transition in individuality
University Paul Sabatier (Toulouse)
The evolution of individuality
European Conference on Clinical Microbiology & Infectious Disease (London)
Evolution of bet hedging
Individuals and Groups (Almora, India)
Evolution of individuality and Evolution of bet hedging
Royal Society NZ VIP Science Class (Wellington)
Plant disease
Disease Ecology & Pathogen Evolution (Palmerston North)
Plant disease and the Psa outbreak

2011

Indiana University
Evolution of individuality
American Society for Microbiology Annual Meeting (New Orleans)
Adaptive evolution of groups
American Society for Microbiology Annual Meeting (New Orleans)
Panel discussion live on This Week in Microbiology
<http://www.youtube.com/watch?v=dSdHqHChrTM>
Kavli Symposium on Phenotypic Evolution (Aspen, Colorado)
Unravelling the rules of genetic evolution
University of Wisconsin
Adaptive radiation and the rules of genetic evolution
University of Chicago
Adaptive radiation and the rules of genetic evolution
KITP, University of California, Santa Barbara
Evolution of a genetic switch
EMBO Genome Evolution (Vienna, Austria)
Evolution of bet hedging
Telluride Science Research Conference on Cystic Fibrosis (CO, USA)
REPINs, RAYTs, and new approaches to control infection
Telluride Town Talk (public lecture) (CO, USA)
The evolution of biological diversity
Lactic Acid Bacteria Symposium (Egmond aan Zee, Netherlands)
Exclusion rules, bottlenecks and the evolution of bet hedging
MPI for Evolutionary Biology (Ploen, Germany)
The asocial biology of bacteria
Evolutionary transitions, life cycles and the evolution of multicellularity
Danish Technical University (Copenhagen, Denmark)
Evolutionary transitions, life cycles and the evolution of multicellularity
MPI for Chemical Ecology (Jena, Germany)
Evolutionary transitions, life cycles and the evolution of multicellularity
MPI for Developmental Biology (Tuebingen, Germany)
Exclusion rules, bottlenecks and the evolution of bet hedging
Analytical Genetics (Carmona, Spain)
Evolution of individuality

2010

Lorne Genome Conference (Lorne, NSW, Australia)
Evolution of bet hedging
Skerman Lecture (University of Queensland)
Inevitability and evolution
Ecological Society of America (Pittsburgh)
Exclusion rules, bottlenecks and the evolution of bet hedging
Conceptual Issues in Evolutionary Medicine
Mutualisms and host parasite evolution
Danish Technical University (Copenhagen, Denmark)
Extending the modern synthesis
San Diego State University

The role of development in evolution
Uppsala University
Unravelling the genetics of CbrA and histidine uptake
Pauanui, NZ (New Directions in Evolutionary Medicine)
The ecological dimension of infectious disease

2009

University of Oslo (Centre for Ecological & Evolutionary Synthesis)
Evolution of bet hedging
University of Oslo (Darwin Day Celebration)
Evolution of individuality
Uppsala University (Department of Medical Biochemistry & Microbiology)
Evolution of bet hedging
Danish Technical University (Darwin Celebration)
Evolution of individuality
Danish Technical University (Department of Microbiology)
Evolution of bet hedging
Massey University (public lecture)
Evolution of life's diversity
University of Sydney (Department of Microbiology / Biology)
Evolution of bet hedging
Telluride Science Research Conference on Cystic Fibrosis
Predicting phenotypic evolution
American Academy for Microbiology Colloquium on Evolution (Galapagos)
Colloquium participant
Queenstown Molecular Biology Meeting (main meeting)
Evolution of bet hedging
Queenstown Molecular Biology Meeting (developmental biology satellite)
Predicting phenotypic evolution
COMBIO (Christchurch)
Evolution of bet hedging
Analytical Genetics (Asilomar)
Why evolution follows a limited subset of pathways
University of Arizona (Department of Ecology & Evolution) (two talks)
Evolution of bet hedging
Evolution of individuality
Stanford University (Department of Biology)
Evolution of bet hedging
University of Washington (Department of Biology)
Evolution of bet hedging