

Paul Barton RAINEY

CURRENT POSITION

2007 Professor of Evolutionary Genetics, NZ Institute for Advanced Study & Institute for Molecular Bioscience, Massey University; Visiting Professor & Co-Director, Hopkins Microbial Diversity Programme, Stanford University (2006-); Adjunct Senior Researcher, Swiss Federal Institute for Aquatic Science & Technology (2007-); Principle Investigator, Allan Wilson Centre for Molecular Ecology & Evolution (2008-)

EDUCATION

University

- 1986-1989 Ph.D. 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.
- 1984-1986 M.Sc. (first class hon). Thesis: *A study of physical, chemical and biological properties of the mushroom casing layer*.
- 1983 Overseas travel.
- 1979-1982 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

- 1994-1999 Biological and Biotechnology 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

- 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

2007	TEC (with 10 others)	Allan Wilson Centre	\$NZ 18,500k
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	<i>P. fluorescens</i> 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	<i>Pseudomonas</i> -plant signal exchange	£10 k
1997	BBSRC	Commonalities in colonization	£50 k
1995	Nipa Laboratories	<i>In vivo</i> 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 <i>Pseudomonas</i>	£15 k
1994	University Pump-Priming	Population genetics	£10 k
1994	BBSRC	Determinants of ecological success	£250k

GRADUATE SUPERVISION

Current (PhD only)

Jenna Gallie (2006-) FRST Bright Futures Scholarship. Evolution of a mutable switch

Peter Meintjes (2005-) FRST Bright Futures Scholarship. Evolution of cooperation

Michael McDonald (2005-) NERF. Molecular analysis of AWS

Completed (D. Phil. only)

Jacob Malone (2002-2005). D. Phil. BBSRC. Biochemistry of GGDEF domain proteins [currently post doc, Biocentrum, Basel]

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 Liverpool]

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 editor, *Nature Reviews, Genetics*]

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 Fachhochschule Weihenstephan Fachbereich Biotechnologie und Bioinformatik, Munich]

Postdoctoral Researchers (current)

Jonathan Gauntlet (2008-) Marsden Fund. Signalling and transport

Christian Kost (2007-) Humboldt Fellow. Unravelling the effects of history in evolution

Dominik Refardt (2005-) Swiss National Science. Evolution of virulence

Tim Cooper (2003-) FRST Fellow. Evolution of specialists and generalists

Xue-Xian Zhang (2003-) University of Auckland. Genetics of histidine regulation

Postdoctoral Researchers (alumni)

Bertus Beaumont (2004-2007) Marsden Fund. Reverse evolution [currently Veni Fellow, Leiden University]

Darby Brown (2006-2007) Marsden Fund. Signalling and transport [currently back 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 Departmental Research Fellow, Plant Sciences, Oxford]

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

OTHER ACTIVITIES

Appointments and elected posts

2007 Strategic Advisory Board, HRC funded programme in human pathogenic viruses: drug targets and therapeutic potential, University of Otago.
2007 RQF Assessment Panel (RQF Pre-Implementation Trial), James Cook University
2005 Tertiary Education Commission (NZ), Performance-Based Research Fund Assessment Panel, Biology
2005 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
2000-2002 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)

2007 Reviewer, McArthur Fellowship Awards
2007 Chair, Gordon Research Conference on Microbial Population Biology
2007 Session Organizer, 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- Editor, *Ecology Letters*
2005- 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 Advisor on staff 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 (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- Member, Departmental Staffing Advisory Committee
2003- Appointment Committees (various)
2003- 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- Scientific Advisory Board, Evolva
2004 Founder (with two others), Nuveris

Public outreach / media

2007 Radio NZ interview: "Our Changing World"
2007 Feature article in New York Times special on evolution (June 26)
2007 Nature Podcast and numerous interviews associated with *Nature* publications
2006 Public debates on 'intelligent design' and evolution including radio interviews
2005 (& earlier) Numerous interviews with journalists; articles featuring aspects of my work (and work of my colleagues) have appeared in the scientific press including: *Science*, *Nature*, *New Scientist*, *National Geographic*; and in the popular press / newspapers.

Miscellaneous

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

UNIVERSITY TEACHING

University of Auckland

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

Stanford University

Hopkins Microbial Diversity	Four week postgraduate course (Co-Director); Hopkins Marine Station, Monterey Bay, CA (Stanford University); from 2006
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University of Oxford

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

University of Cambridge

Supervisions	
Plant microbe interactions	Stage III

INVITED CONFERENCE PRESENTATIONS AND LECTURES (2003-)

2007	American Society for Microbiology, Biofilms (Quebec) Webster Centre for Infectious Disease (Otago) Massey University (Palmerston North) Australian Society for Evolution (Sydney) American Society for Microbiology, General Meeting (Toronto) Society for the Study of Evolution (Christchurch) Workshop on adaptive evolution (DTU, Copenhagen) Prokagenomics; 3 rd European Conference on Prokaryote Genomics (Tubegin) ETH Zurich Jacques Monod Conference (evolution of virulence) (Roscoff) Journée d'Ecologie de Toulouse (Toulouse)
2006	Okazaki Biology Conference (Okazaki, Japan) Shizuoka University (Japan)

Society for General Microbiology (two lectures) (University of Warwick)
Stanford University (USA)
University of Auckland Medical School

- 2005
International Society for Molecular Biology and Evolution (Auckland)
Imperial College (London)
University College (London)
University of Toronto (Toronto)
University of Ottawa (Ottawa)
University of Otago (Dunedin)
Karolinska Institute (Stockholm – two lectures)
University of Queensland (Brisbane)
Australian National University (Canberra);
Dartmouth Medical College (New Hampshire)
Tufts Medical School (Boston)
Danish Technical University (Denmark)
Massey University (Albany)
- 2004
EMBO workshop (Heidelberg)
Institute Pasteur (Paris)
University of Oxford (Oxford)
University of Melbourne (Invitrogen Lecturer) (Melbourne)
University of Auckland (Auckland)
International Society for Microbial Ecology (Cancun)
2nd Okazaki Biology Conference (Ishe Shima)
Queenstown Molecular Biology Meeting (Queenstown)
Australian Microbiological Society (Sydney)
Danish Technical University (Copenhagen)
- 2003
Dutch Academy for Microbiology (Amsterdam)
British Ecological Society (Lancaster)
Gordon Research Conference on Ecological and Evolutionary Functional Genomics (New Hampshire)
Gordon Research Conference on Microbial Population Biology (New Hampshire)
Rockefeller Workshop on the interaction between beneficial bacterial and eukaryotes (Bellagio)
Department of Biological Sciences, University of Pittsburgh (by special invitation of the graduate students)
European Society for Evolutionary Biology Society (Leeds)
Society for General Microbiology (Edinburgh)
Massey University (Palmerston North)
New Zealand Microbiological Society (Auckland)

RECREATIONAL ACTIVITIES

I spend time each day playing a piano (mostly Bach); I am interesting in wine, I read avidly, I garden and walk in the hills when I can. I paint when possible. I am building a yacht.