

Curriculum Vitae

July 2015

Nicholas Hamilton Barton

Born in London, 30th August 1955; British citizen.

Research keywords: Population genetics, evolutionary biology, mathematical models, speciation, hybrid zones

Education and training

1976-1979 Natural Environment Research Council research studentship on "A narrow hybrid zone in the alpine grasshopper *Podisma pedestris*". Supervised by Dr. G.M. Hewitt at the University of East Anglia. (Ph.D. 1979).

1973-1976 Natural Sciences, specialising in Genetics at Cambridge University. B.A. (First Class).

Professional appointments

2015 - Dean, IST Austria Graduate School

2008 – Professor, Institute of Science and Technology, Austria.

2000-2010 Personal Chair in Evolutionary Genetics, Institute of Evolutionary Biology, University of Edinburgh.

1990 -2000 Darwin Trust Fellow, Institute of Cell, Animal and Population Biology, University of Edinburgh.

1989-1990 Reader at Department of Genetics and Biometry, University College London.

1982-1989 Lecturer at Department of Genetics and Biometry, University College London.

1979-1982 Research Fellowship at Girton College, Cambridge.

Awards and distinctions

2013 Austrian Academy of Sciences, Erwin Schrödinger Prize

2013 Leopoldina , Mendel medal

2009 Linnean Society Darwin-Wallace Medal

2006 Royal Society Darwin Medal

2001 Elected President, Society for the Study of Evolution (on Council 2000-2002)

1998 American Society of Naturalists President's Award (joint with Mark Kirkpatrick)

1995 Elected Fellow, Royal Society of Edinburgh

1994 Elected Fellow, Royal Society of London

1994 David Starr Jordan Prize (joint with S. Pacala)

1993 Genetical Society Balfour Lecturer.

- 1992 Zoological Society Scientific Medal.
 1989 Elected Vice-President, Society for the Study of Evolution.
 1985 Linnean Society Bicentennial Medal.

Professional service activities

- 2016- Senior Editor, *Genetics*
 2013- Associate Editor, *Molecular Ecology*
 2013- Associate Editor, *Genetics*
 2013-2016 Human Frontiers Fellowship panel
 2013- ERC panel LS8
 2010-2015 Editorial Board, *Philosophical Transactions of the Royal Society B*
 2008-2011 Handling Editor, *Evolution*
 2009-2011 Co-Chair, Portuguese Foundation for Science and Technology (FCT) panel
 2004 - 2007 Royal Society, Sectional Committee 9 (Chair, 2007)
 2004 - 2006 Royal Society, Biological Sciences Awards Committee
 2003 - 2006 NERC Peer Review Panel (Terrestrial Sciences)
 2002-2004 Conference Grants Committee, Royal Society
 2003 - Editorial Board, *PLoS Biology*
 2001 Editor, special issue of *TREE* 16(7) on speciation
 1999-2000 BBSRC/NERC Steering Committee on "Genome manipulation and gene flow in plants and microorganisms"
 1999 BBSRC MAFS Panel
 1999-2001 Chair, Royal Society Research Grants Committee (Board H)
 1997-2000 Editorial Board, *American Naturalist*
 1995-1997 Royal Society Sectional Committee 9
 1994-1997 Editorial Board, *Journal of Evolutionary Biology*.
 1997-2000 Genetical Society Committee
 1997 BBSRC Fellowships Panel
 1997 NERC EDGE Initiative Panel
 1996-1998 Royal Society Research Grants Committee (Board H)
 1995 Organised 5th Congress, European Society for Evolutionary Biology, Edinburgh, Sept. 4th - 8th.
 1993 - 1994 SERC Mathematical Biology committee.
 1993 -1998 NERC Terrestrial Life Sciences committee.
 1993 - Editorial Board, *Genetical Research*.
 1990 - 2007 Associate editor, *Theoretical Population Biology*.
 1989 - 2007 Editorial Board, *Journal of Theoretical Biology*.
 1985 - 1989 Advisory Board, *Journal of Theoretical Biology*.
 1989 - 1992 SERC Molecular Biology and Genetics subcommittee.
 1987 - 1989 Genetical Society Committee

Supervised Ph.D. students

J. Dallas	1981-1986	DNA sequence variation in <i>Podisma</i>
N. Sanderson	1985-1988	Reinforcement and the evolution of mating isolation
A. Liebowitz	1987-1992	Homogamy in <i>Podisma</i>
K.S. Jackson	1988-1991	Fitness across a hybrid zone in <i>Podisma</i>
C. MacCallum	1990-1994	Habitat choice in <i>Bombina</i>
C. Semple	1990-1994	Fitness variation in <i>Drosophila</i> (with L. Partridge, Edinburgh)
K. Dawson	1991-1994	Models of hybridisation and speciation
S. Baird	1991-1994	Applications of junction theory
K. Abernethy	1991-1994	Hybridisation between red and sika deer (with A. Illius, Edinburgh)
I. Wilson	1992- 1996	Population structure in salmonid fish (with E. Verspoor, MAFF, Aberdeen)
L. Kruuk	1993- 1997	Sexual selection and habitat preference in <i>Bombina</i>
K. Lythgoe	1995- 1999	Quantitative genetic variation in hybrid zones
N. Atkinson	1995- 2000	Measuring natural selection and mating patterns in a hybrid zone
T. Johnson	1997- 2000	Theoretical population genetics
T. Vines	1998- 2002	Measuring natural selection in the <i>Bombina</i> hybrid zone
T. Sands	1999- 2004	Habitat preference in a mosaic hybrid zone
A. Gardner	2001- 2004	Theoretical population genetics of fluctuating selection
A. Kalinka	2002-2006	Studies of epistasis using laboratory populations of <i>Chlamydomonas</i>
J. Polechova	2003-2005	Models of speciation
P. Wesche	2003-2007	Fitness variance and sex
H. Senn	2005-2009	Hybridisation between red and sika deer (joint with J Pemberton)
K. Lohse	2006-2010	Empirical and theoretical studies of phylogeography (joint with G. Stone, Edinburgh)
S. Logeswaran	2006-2010	Using selection to map QTL
S. Aeschbacher	2008-2011	Estimating population structure
T. Ellis	2010-2015	The role of pollinator-mediated selection in an <i>Antirrhinum majus</i> hybrid zone
S. Novak	2011-2016	evolutionary processes in variable environments
M. Tugrul	2010-2016	Evolution of transcriptional regulatory sequences (joint with G. Tkacik, IST)

Major Research Grants

1981-1984	A study of DNA sequence variation and speciation in two chromosomal races of the grasshopper <i>Podisma pedestris</i> , S.R.C. GR/B/61542. (£7,827).
1984-1988	Speciation and the 'shifting balance'. S.R.C. GR/C/91529. (£42,259).
1986-1999	Polygenic variation and divergence: application of new mathematical methods. SERC GR/E/08507. (£52,589).
1988-1992	Fitness and population density across a hybrid zone. NERC GR/3/6864. (£47,771).

- 1988-1992 Genetic variation for total fitness and its components in *Drosophila melanogaster*. SERC GR/E/94524 (with Dr. L. Partridge). (£86,424).
- 1991-1995 A quantitative analysis of the hybrid zone between the fire-bellied and yellow-bellied toads, *Bombina bombina* and *B. variegata*. NERC GR3/8002 (£74,612).
- 1991-1993 A theoretical examination of Wright's "shifting balance". SERC Visiting Fellowship for Dr. S. Rouhani. SERC GR/H/12607, GR/J/18033 (£3,490; renewed 1993 £4,743).
- 1991-1995 A theoretical investigation of polygenic variation in structured populations. SERC GR/H/09928 (£60,085).
- 1992-1996 The evolutionary consequences of deleterious mutation. SERC GR/J/6057 . (£90,017).
- 1992-1996 Population genetics and feeding ecology of an invading species: the Sika deer, and their hybrids with Red deer. NERC GR9/830 (With A. Illius) (£7,062).
- 1993-1997 EC Human Capital and Mobility Grant ERB4050PL922765 (with J. Searle, Univ. of York) (230,000 ecu).
- 1994-1998 The genetics of adaptation and speciation in the hybridising toads *Bombina bombina* and *B. variegata*. NERC GR3/9353 (with C. Abbott). (£205,673).
- 1994-1998 The evolutionary consequences of deleterious mutation. SERC GR/J/76057. (£90,017).
- 1995-1999 Analysis of the distribution of the toads *Bombina bombina* and *B. variegata* across a hybrid zone: predictions from remotely sensed data. NERC GR9/01719 (with J.W. Arntzen) (£20,800)
- 1995-1996 Development of methods for analysis of data from hybrid zones. NERC GR9/01909 (£16,029)
- 1995-2000 Genetic variation for fitness and its components in *Drosophila melanogaster*. BBSRC 31/G09821. (With L Partridge, UCL). (£190,000)
- 1996-2000 GR/L10048 Stochastic processes in spatially continuous populations: applications in evolution and ecology EPSRC (with A Etheridge, Maths) (£90,000)
- 1996-2000 Testing mutational explanations of sexual reproduction. BBSRC (with Andrew Read & Stuart West) (£ 195K)
- 1996-2000 Introgression of Scottish red deer populations by sika deer (with J Pemberton) NERC GR3/10350 (£171K)
- 1998-2001 Consequences of mutation accumulation for fitness traits. BBSRC (with P Keightley). (£213K)
- 1998-2002 Genealogies and the process of speciation. NERC GR3/11635. (£144K)
- 1998-2002 The coalescent process in genetically structured populations. (with A Etheridge, Oxford, and B&D Charlesworth, ICAPB) BBSRC/EPSRC MMI09726 (£111K)
- 2003-2007 Genealogies in fluctuating populations: the effect of selection. EPSRC GR/S41203/01 (with A. Etheridge, Oxford) £130,208
- 2003-2007 Theoretical analysis of speciation: a general framework. (with M Kirkpatrick) NERC £139,000
- 2004-2008 Novel Approaches to Networks of Interacting Autonomes (EPSRC GR/T11753/01) Joint grant with G Ackland (Physics) and G. Marion (BioSS). (£440K)
- 2005-2008 Distinguishing causes of reduced diversity. GR/T19537/01. Co-PI with A Etheridge (Oxford). (£138,307).
- 2005-2009 Evolvable Networks of Intelligent and Secure Integrated and Distributed Reconfigurable System-on-Chip Sensor Nodes for Aerospace based Monitoring and Diagnostics. (Edinburgh/Surrey/Kent/JPL-

- NASA/SSTL/Epson/SpiralGateway) (EPSRC £1 million total)
EP/C546318/01
- 2005-2007 Natural hybridisation and sexual selection in fire-bellied toads *Bombina* .
Royal Society 2004/R1-FSU (with Alexey Yanchukov)
- 2005-2010 Royal Society/Wolfson Research Merit Award.
- 2007-2010 New models for spatially structured populations. (EPSRC S41203 £265K). With
Alison Etheridge.
- 2010-2015 ERC Advanced Grant “Information and Evolution”. €1.9m
- 2010-2014 Natural Selection in Spatially Structured Populations. (EPSRC 1013091 £215K).
With Alison Etheridge
- 2014-2018 FP7 FET grant SAGE “Speed of Adaptation in Population Genetics and
Evolutionary Algorithms”, grant with T. Paixao (IST), Per Kristian Lehre
(Nottingham), Tobias Friedrich (Jena), Dirk Sudholt (Sheffield). (€366K)