Graham Coop

Date of Birth: 23/5/1979
British, U.S. Permanent Resident
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Department of Evolution and Ecology and Center for Population Biology,
UC Davis

Employment

2004-2008	Postdoctoral Fellow, Department of Human Genetics, University of Chicago
2008-	Assistant Professor, Section of Evolution and Ecology, University of California Davis.

Education

1997–2001	University of Reading, M.Phys. Physics, 1st Class degree
2001–2004	Statistics Department, Oxford University, D.Phil. student. 'Computationally Intensive Methods for Detecting Selection under the Coalescent' supervised by Professor R.C. Griffiths

Awards and Activities

2001	Cowan-Burns Prize for best Physics graduate of 2001, University of Reading
2001	Society of Glass Technology - Oldfield Award, first prize for undergraduate project - 'Models of Amorphous Magnetic Structures'
2002-2004	Graduate Male Welfare Representative, Lady Margaret Hall.
2003	Visiting student, Carlos Bustamante group, Cornell University, USA.
2006	ASHG Postdoctoral Presentation Award Finalist. New Orleans.
2006	Our work with the Rubin group on Neanderthal genomic DNA along with a paper by the Paabo group was chosen by Science to be one of the breakthroughs of the year.
2007	Winner of ASHG Award for Postdoctoral Basic Research. San Diego.
2008	Co-organized a Symposium at the Society for Molecular Biology and Evolution meeting, Barcelona.
2009-2010	Member of Faculty of 1000
2009-	Sloan Foundation Research Fellowship

Reviewer for:

Evolution, Genetics, Genome Research, Human Genomics, Molecular Biology and Evolution, Nature Genetics, PLoS Genetics, PLoS Biology, Proceedings of the Royal Society B. Science, Theoretical Population Biology.

2009 ad-hoc reviewer on 3 NHGRI panels.

Teaching

2001-2004	Tutor, First Year Probability, Lady Margaret Hall, University of Oxford
2002	Marking Assistant, Fourth Year Mathematical Genetics, Statistics Department, University of Oxford
2006	Coalescent Workshop, Instituto Glubenkian de Ciencia. Portugal
2009-2011	Introduction to Evolution EVE100, Population genetics PBG 200A. UC Davis

Talks

(I) -invited

2002

University of Edinburgh (BBSRC Theoretical Genetics and Evolution Summer School)
Mathematical Genetics Seminar, University of Oxford.

2003

University of Cornell (I)
Society of Molecular Biology and Evolution Meeting, California

2004

London School of Hygiene & Tropical Medicine (I)
Human Genetics Department, University of Chicago (I)
SNPs and Human Evolution Conference, Musee de l'Homme, Paris (I)

2005

Patterns of linkage disequilibrium and recombination hotspots workshop. University of Ohio

2006

Natural History Seminar, University of Chicago
Meiosis and the causes and consequences of recombination Conference, Warwick
Biostatistics Seminar, University of Michigan (I)
Max Planck Institute of Evolutionary Anthropology, Leipzig, Germany (I)
American Society of Human Genetics Meeting, New Orleans

2007

American Society of Human Genetics Meeting, San Diego.
Society of Molecular Biology and Evolution Meeting, Nova Scotia.
Evolution and Ecology Section, University of California, Davis (I)
Speciation and Adaptation Ecological Genomics of Model Organisms and Beyond.
Okazaki Biology Conference Japan (I)

2008

Society for Molecular Biology and Evolution Meeting, Barcelona
Evolution and Ecology Section, University of California, Davis (I)
Society for the Study of Evolution Meeting, Minnesota. (I)
Population Genetics and Genomics workshop, Kavli Institute for Theoretical Physics. (I)
Integrative Biology Department Seminar, University of California, Berkeley (I)

2009

Society for the Study of Evolution Meeting, Moscow, Idaho
Society for Molecular Biology and Evolution Meeting, Iowa City
Computation biology Seminar, University of California, Berkeley (I)
EMBO Meiosis Meeting. (I)

Bay Area population Genomics meeting (I)

2010

Department of Human Genetics, University of Pennsylvania (I)
Genome Center, UC Davis (I)
Inference in Stochastic Models of Sequence Evolution workshop. Mathematical Biosciences Institute. University of Ohio. (I)
Gordon Conference on Meiosis. New Hampshire (I)
Society for Molecular Biology and Evolution Meeting, Lyon
Sloan Kettering Institute NYC (I)
Integrative Biology Department Seminar, University of California, Berkeley (I)
Statistics Department, University of Oxford (I)
Department of Ecology, Evolution and Marine Biology, Department of Ecology, Evolution and Marine Biology.
Genetics Dept. Harvard Medical School (I)
Human Evolutionary Biology Dept, Harvard (I)

Papers

2004

Ancestral inference on gene trees under selection. Coop G. , Griffiths R. C., Theor Popul Biol, 2004; 66; 219-32.

SelSim: a program to simulate population genetic data with natural selection and recombination. Spencer C.C.A., Coop G. Bioinformatics. 2004, 20: 3673-5.

Darwinian Selection on a Selfing Locus. Shimizu KK, Cork JM, Caicedo AL, Mays CA, Moore RC, Olsen KM, Ruzsa S, Coop G, Bustamante CD, Awadalla P, Purugganan MD. Science. 2004, 306, 2081-4. (Later retracted by senior author due to experimental errors).

2005

The rise and fall of the chemoattractant receptor GPR33. Rompler H, Schulz A, Pitra C, Coop G, Przeworski M, Paabo S, Schoneberg T. J Biol Chem. 2005, 284: 31068-75

The signature of positive selection on standing genetic variation. Przeworski M, Coop G, Wall JD. Evolution 2005, 59: 2312-23.

Can a genome change its (hot)spots. Coop G. Trends in Ecology and Evolution. Dec 2005; 20, 643-645

Screening for recently selected alleles by analysis of human haplotype similarity. Hanchard NA, Rockett KA, Spencer C, Coop G, Pinder M, Jallow M, Kimber M, McVean G, Mott R, Kwiatkowski DP. American Journal of Human Genetics, 2005, 78:153-9

2006

Spread of an Inactive Form of Caspase-12 in Humans Is Due to Recent Positive Selection Xue Y, Daly A, Yngvadottir B, Liu M, Coop G, Kim Y, Sabeti P, Chen Y, Stalker J, Huckle E, Burton J, Leonard S, Rogers J, Tyler-Smith C. American Journal of Human Genetics, 2006, 78:659-70

How reliable are empirical genomic scans for selective sweeps? Teshima KM, Coop G, Przeworski M. Genome Res. 2006 Jun;16(6):702-12

A worldwide survey of haplotype variation and linkage disequilibrium in the human genome Conrad DF*, Jakobsson M*, Coop G*, Wen X, Wall JD, Rosenberg NA, Pritchard JK., Nat Gen 2006. 38(11):1251-60

Combining sperm typing and LD analyses reveals differences in selective pressures or recombination rates across human populations. Clark V, Ptak SE, Tiemann-Boege I, Qian Y, Coop G, Stone AC, Przeworski M, Arnheim N, Di Rienzo A. Genetics. 2006

Sequencing and analysis of Neanderthal genomic DNA. Noonan JP, Coop G, Kudaravalli S, Smith D, Krause J, Alessi J, Chen F, Platt D, Paabo S, Pritchard JK, Rubin EM. Science. 2006, 314:1113-1118.

2007

An evolutionary view of human recombination. Coop G, Przeworski M. Nat Rev Gen, 2007. 8:23-34

Live hot, die young. Transmission distortion in recombination hotspots. Coop G*., Myers S.R.*. PLoS genetics. 2007

Adaptive drool in the gene pool Novembre J*, Pritchard JK, Coop G*, Nature Genetics, 2007

2008

No effect of recombination on the efficacy of natural selection in primates. Bullaughey K, Przeworski M*, Coop G* Genome Research. 2008

Adaptations to climate in candidate genes for common metabolic disorders. Hancock AM, Witonsky DB, Gordon AS, Eshel G, Pritchard JK, Coop G, Di Rienzo A. 2008. PLoS Genetics.

The timing of selection at the human FOXP2 gene.Coop G, Bullaughey K, Luca F, Przeworski M. Molecular Biology and Evolution 2008.

High-resolution mapping of crossovers reveals extensive variation in fine-scale recombination patterns among humans. Coop G, Wen X, Ober C, Pritchard JK, Przeworski M Science. 2008

2009

An approximate likelihood for genetic data under a model with recombination and population splitting. Davison D, Pritchard JK, Coop G. Theor. Pop. Bio. 2009

Signals of recent positive selection in a worldwide sample of human populations. Pickrell JK, Coop G, Novembre J, Kudaravalli S, Li J, Absher D, Srinivasan B, Barsh GS, Myers RM, Feldman MW, Pritchard JK. (2009) Genome Research

The roles of geography in human adaptation. Coop G*, Pickrell JP*, Kudaravalli S, Novembre J, Myers RM,Cavalli-Sforza LL, Feldman MW, Pritchard JK. PLoS Genetics 2009

Expression quantitative trait loci detected in cell-lines are often present in primary tissues. Bullaughey K, Chavarria CI, Coop G*, Gilad Y*. Human Molecular Genetics 2009

Broad-scale recombination patterns underlying proper disjunction in humans. Fledel-Alon A, Wilson DJ, Broman K, Wen W, Ober C, Coop G*, Przeworski M.* PLoS Genetics. 2009

2010

PRDM9 is a Major Determinant of Meiotic Recombination Hotspots in Humans and Mice. Baudat F, Buard J, Grey C, Fledel-Alon A, Ober C, Przeworski M, Coop G, de Massy B. Science 2010

The genetics of human adaptation: hard sweeps, soft sweeps, and polygenic adaptation. Prichard JK, Pickrell JK, Coop G. Current Biology. 2010

Adaptations to diet, subsistence and ecoregion in the human genome. Hancock, A.M. and Witonsky D.B. and Ehler, E. and Alkorta-Aranburu, G. and Beall, C. and Gebremedhin, A. and Sukernik, R. Utermann, G. and Pritchard, J.K. and Coop, G. and Di Rienzo, A PNAS 2010

Using environmental correlations to identify loci underlying local adaptation. Coop G, Witonsky D.B. , Di Rienzo, A , Pritchard JK Genetics 2010.

Parallel adaptation: One or many waves of advance of an advantageous allele? Ralph P, Coop G. Genetics 2010.

Back to nature: ecological genomics of loblolly pine (Pinus taeda, Pinaceae). Eckert AJ, Bower AD, González-Martínez SC, Wegrzyn JL, Coop G, Neale DB. Molecular Ecology, 2010

2011

Adaptations to climate-mediated selective pressures in humans. Hancock AM, Witonsky DB, Alkorta-Aranburu G, Beall CM, Gebremedhin A, Sukernik R, Utermann G, Pritchard JK, Coop G, Di Rienzo A. PLoS Genetics. 2011

Variation in Human Recombination Rates and its Genetic Determinants. Fledel-Alon A, Leffler EM, Guan Y, Stephens M, Coop G* and Przeworski M.* PLoS One. 2011

Scrambling eggs: Meiotic drive and the evolution of female recombination rates. Brandvain Y, Coop G. Genetics. 2011

Is your phylogeny informative? Measuring the power of comparative methods Boettiger C, Ralph PL, Coop G Accepted Evolution. 2011

The effect of recurrent partial sweeps on patterns of neutral diversity Coop G, Ralph PL. Submitted Genetics.

* - denotes equal contribution.