

Curriculum Vitae

Gavin C. Conant

Department of Genetics
Smurfit Institute
University of Dublin
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Education:

B.S. Biology *summa cum laude*, 1998, The University of New Mexico. Thesis title: "Effects of nucleotide composition bias on the success of the parsimony criterion in phylogenetic inference." Advisor: Prof. Paul Lewis

Ph. D. Biology, with distinction, 2004, The University of New Mexico. Dissertation title: "Functional divergence at the molecular level: Robustness, asymmetry, and convergence." Advisor: Prof. Andreas Wagner.

Employment History:

January 2005-current: Post-doctoral fellow, Department of Genetics, Trinity College, Dublin, Ireland. Advisor: Prof. Kenneth Wolfe.

June-Dec. 2004: Post-doctoral fellow, Lehrstuhl für Bioinformatik, Universität Leipzig, Leipzig, Germany. Advisor: Prof. Peter Stadler.

Fellowships and Assistantships

Department of Energy Computational Sciences Graduate Fellowship (2000-2004). Included research practicum at Sandia National Laboratories (Alb.), Summer 2002.

Albuquerque High Performance Computing Center, Research Assistant (1998-2000)

Other Awards:

Outstanding Graduate Poster Presentation, Department of Biology Research Day, 2003

Outstanding Graduate Oral Presentation, Department of Biology Research Day, 2002

Phi Beta Kappa, The University of New Mexico, 1998

Publications:

- Conant, G. C., and A. Wagner, (2005) The rarity of gene shuffling in conserved genes, *Genome Biology*, **6**:R50.
- Babu, S. R., G. C. Conant, E. Eller, C. M. Roberts, K. Gowan, G. S. Eisenbarth, P. R. Fain, and P. Vardi, (2004) A second-generation genome screen for linkage to Type 1 diabetes in a Bedouin Arab family, *Annals of the New York Academy of Sciences*, **1037**: 157-160.
- Conant, G. C., and A. Wagner, (2004) A fast algorithm for determining the best combination of local alignments to a query sequence, *BMC Bioinformatics*, **5**: 62.
- Hahn, M. W., G. C. Conant, and A. Wagner, (2004) Molecular evolution in large genetic networks: Does connectivity equal constraint? *Journal of Molecular Evolution*, **58**: 203-211.
- Conant, G. C. and A. Wagner, (2004) Duplicate genes and robustness to transient gene knockouts in *Caenorhabditis elegans*, *Proceedings of the Royal Society, Biological Sciences*, **271**: 89-96.
- Conant, G. C. and A. Wagner, (2003) Asymmetric sequence divergence of duplicate genes, *Genome Research*, **13**: 2052-2058.
- Conant, G. C., S. J. Plimpton, W. Old, A. Wagner, P. R. Fain, T. R. Pacheco, and G. Heffelfinger. (2003). Parallel Genehunter: Implementation of a linkage analysis package for distributed-memory architectures, *Journal of Parallel and Distributed Computing*, **63**: 674-682.
- Conant, G. C. and A. Wagner, (2003) Convergent evolution of gene circuits, *Nature Genetics*, **34**: 264-266.
- Conant, G. C. and A. Wagner. (2002) GenomeHistory: A software tool and its application to fully sequenced genomes, *Nucleic Acids Research*, **30**: 3378-3386.
- Conant, G. C. and P. O. Lewis. (2001) Effects of nucleotide composition bias on the success of the parsimony criterion in phylogenetic inference, *Molecular Biology and Evolution*, **18**: 1024-1033.

Presentations:

- "Patterns of amino acid substitution in orthologous and paralogous genes." VIBE Meeting, Dublin City University, February, 2005.
- "Parallel Genehunter: Implementation of a linkage analysis package for distributed-

memory architectures." First Workshop on High Performance Computational Biology, 16th IPDPS, Ft. Lauderdale, FL, April 2002.

Recent Posters:

Conant, G., Plimpton, S., Old, W., Wagner, A., Fain, P., and Heffelfinger, G. "Parallel Genehunter: Implementation of a Linkage Analysis Package for Distributed-Memory Architectures," The Conference on High Speed Computing, Glendon Beach, OR, 2002, and Supercomputing 2003, Krell Institute Booth, Phoenix AZ, 2003.

Conant, G. and Wagner, A. "The rarity of evolutionary innovation by gene shuffling," German Conference on Bioinformatics, Bielefeld, Germany, 2004.

Conant, G. and Wolfe, K. "Network subfunctionalization after whole-genome duplication in yeast," RECOMB Workshop on Comparative Genomics, Dublin, Ireland 2005.

Service:

Software packages distributed: GenomeHistory, parallel Genehunter, find_max_cover

Department of Biology (UNM) Comparative and evolutionary genomics faculty search committee member

Reviewer for *Molecular Biology and Evolution*, *Theory in Biosciences*, *Bioinformatics*, *BMC Bioinformatics*, *New Phytologist*, *Advances in Complex Systems*, *Molecular and Developmental Biology*, and the Workshops on High-Performance Computational Biology.