Curriculum Vitae November 17, 2003

Patrik D'haeseleer

Department of Genetics, Harvard Medical School
The New Research Building, 77 Avenue Louis Pasteur, Boston, MA 02115
Phone: 617-432-6511; Fax: 617-432-7266
E-mail: patrik@genetics.med.harvard.edu
http://genetics.med.harvard.edu/~patrik

Education

2000 **Ph.D. in Computer Science**.
University of New Mexico, Albuquerque, NM.

1993 **M.S. in Computer Science** (Artificial Intelligence), GPA: 4.0.
Stanford University, Stanford, CA

1991 **M.S.** ("*Burgerlijk Ingenieur*") **in Electrical Engineering** (electronics), with distinction.
Ghent University, Ghent, Belgium.

1988 **M.E.** ("*Industrieel Ingenieur*") **in Electrical Engineering**, with distinction.
Katholieke Industriele Hogeschool Oost-Vlaanderen, Ghent, Belgium.

Research and Professional Experience

2001-present	Postdoctoral Fellow, Harvard Medical School. Study of complex networks in biology: regulatory motifs and expression patterns; reconstruction of regulatory and metabolic networks; tracing signaling pathways through the protein interaction network; protein interaction error rates and analysis of weighted interaction networks. Advisor: Prof. George Church.
1996-2000	Research Assistant, University of New Mexico. Ph.D. thesis work on inference of genetic regulatory networks from large-scale gene expression data. Advisor: Prof. Stephanie Forrest.
1995-1996	Research Assistant, Santa Fe Institute. Member of the EvCA (Evolving Cellular Automata) group. Investigated evolution of emergent computation in 2D cellular automata, in collaboration with Melanie Mitchell and Jim Crutchfield.
1995	Complex Systems Summer School. Santa Fe Institute, NM.
1994-1995	Research Assistant, University of New Mexico. Investigated the mathematical and algorithmic foundations of an artificial immune system.
1993-1994	Research Scientist, LSI Logic, Mountain View, CA. Development of novel methods for cell placement in integrated circuit design (based on evolutionary algorithms), resulting in several patents.
1990-1991	Thesis research, Ghent University. Implemented an artificial neural network for optical character recognition.
1987-1988	Thesis research, Katholieke Industriele Hogeschool Oost-Vlaanderen. Designed and implemented a system for capturing and digitizing video frames on a PC.

Teaching Experience

2001-2002	Organized and ran a bi-weekly Networks Discussion Group, Harvard Medical School.
2001 & 2002	Instructor, Instituto Gulbenkian de Ciência, Portugal. Co-taught a one-week intensive Introduction to Bioinformatics for the PhD program in Biomedicine.
1992-1993	Teaching Assistant, Stanford University. CS140: Concurrent Programming (three times) and CS221: Introduction to Artificial Intelligence (twice).

Awards

1996	Outstanding graduate student award, UNM Computer Science Department.
1995	First student to pass UNM CS comprehensive exams with distinction in 5 years.
1991	Honorary fellowship, Belgian-American Education Foundation.
1991	Graduated Ghent University with distinction.
1988	Graduated Katholieke Industriele Hogeschool Oost-Vlaanderen with distinction.

Invited Lectures

June 2003	Southern Regional Council on Statistics, Summer Research Conference in Statistics.
March 2003	Harvard Center for Genomics Research.
June 2001	Boston University, Center for BioDynamics.
April 2000	University of New Mexico, Department of Biology.
February 2000	University of New Mexico, Department of Neurosciences.
December 1999	Los Alamos National Labs, Theoretical Biology and Biophysics group.
October 1999	Short course on microarrays, Society for Neuroscience Annual Meeting.
June 1999	National Center For Genome Resources, Santa Fe, NM.
May 1999	Fred Hutchinson Cancer Research Center/Santa Fe Institute Exchange Meeting: Melding Theoretical and Experimental Biology.
January 1999	Tutorial on Gene Expression and Genetic Networks, Pac. Symp. Biocomputing, Hawaii, HI.

Selected Publications

D'haeseleer, P. and Church, G.M. (2003) Estimating and improving protein interaction error rates. *Submitted to RECOMB.*

Segrè, D., Zucker, J., Katz, J., Lin, X., **D'haeseleer, P.**, Rindone, W., Karchenko, P., Nguyen, D., Wright, M., and Church, G.M. (2003) From annotated genomes to metabolic flux models and kinetic parameter fitting. *Omics* 7:301-16

Steffen, M., Petti, A., **D'haeseleer, P.**, Aach, J., and Church, G.M. (2002) Automated Modeling of Signal Transduction Networks. *BMC Bioinformatics* 3:34-44.

Fuhrman, S., **D'haeseleer, P.** and Somogyi, R. (2002) Tracing Genetic Information Flow from Gene Expression to Pathways and Regulatory Networks. In Microarrays for the Neurosciences: An Essential Guide, eds. Geschwind D.H. and Gregg J. (The MIT Press).

Chao, D.L. and **D'haeseleer P.** (2001) The Distribution of Variable-length Phatic Interjectives on the World Wide Web. Technical Report TR-CS-2001-23, The University of New Mexico.

D'haeseleer, P. (2000) Reconstructing Gene Networks from Large Scale Gene Expression Data. Ph.D. dissertation, University of New Mexico.

D'haeseleer, P., Liang, S., and Somogyi, R. (2000) Genetic Network Inference: From Co-Expression Clustering to Reverse Engineering. *Bioinformatics* 16(8):707-26.

D'haeseleer, P., Wen, X., Fuhrman, S., and Somogyi, R. (1999) Linear modeling of mRNA expression levels during CNS development and injury. *Pacific Symposium on Biocomputing* (World Scientific Publishing), pp. 41-52.

D'haeseleer, P., Wen, X., Fuhrman, S., and Somogyi, R. (1998) Mining the gene expression matrix: Inferring gene relationships from large scale gene expression data. In Information Processing in Cells and Tissues, eds. Paton, R.C. and Holcombe, M. (Plenum Publishing), pp. 203-212.

D'haeseleer, P. (1996) An Immunological Approach to Change Detection: Theoretical Results. *Proceedings of the 9th IEEE Computer Security Foundations Workshop* (IEEE Computer Society Press), pp. 18-26.

D'haeseleer, P., Forrest, S. and Helman, P. (1996) An Immunological Approach to Change Detection: Algorithms, Analysis and Implications. *Proceedings of the IEEE Symposium on Security and Privacy* (IEEE Computer Society Press), pp. 110-119.

D'haeseleer, P. and Bluming, J. (1994) Effects of Locality in Individual and Population Evolution. In Advances in Genetic Programming, K.E. Kinnear Jr. Ed. (MIT Press), pp.177-198.

D'haeseleer, P. (1994) Context Preserving Crossover in Genetic Programming. *Proceedings of 1st IEEE Conf. on Evolutionary Computation* (IEEE Press), pp. 256-261.

D'haeseleer, P. and De Backer, W. (1991) Neural Network for Optical Character Recognition ("*Neuraal Netwerk voor Schriftherkenning*"). Thesis work Ghent University, Ghent Belgium.

D'haeseleer, P. and Moreau, P. (1988) Digitizing and Processing of Video Images ("*Digitaliseren en Verwerken van Video Beelden*"). Thesis work K.I.H.O., Ghent Belgium.

Patents

D'haeseleer, P. and Scepanovic, R. (1999) Method and apparatus for computing minimum wirelength position (MWP) for cell in cell placement for integrated circuit chip. United States Patent 5,859,781.

D'haeseleer, P. and Boyle, D. B. (1997) Method of cell placement for an integrated circuit chip comprising integrated placement and cell overlap removal. United States Patent 5,619,419.

Scepanovic, R. and **D'haeseleer, P.** (1997) Optimal pad location method for microelectronic circuit cell placement. United States Patent 5,638,293.

References available upon request