MARINA AXELSON-FISK, Ph.D.
Curriculum vitae, August 15, 2006

VR Senior Researcher
Mathematical Sciences
Chalmers University of Technology
SE-412 96 Gothenburg, Sweden
Tel: +46 (0) 31 772 4996
Email: Marina.Axelson-Fisk@math.chalmers.se
Web: http://www.math.chalmers.se/~marinaa/

PROFESSIONAL EXPERIENCE

Feb 2006 – present	VR Senior Researcher (Swedish Research Council) Dept of Mathematical Sciences, Chalmers, Sweden
Sep 2002 – Jan 2006	Scientific Director in Bioinformatics Fraunhofer-Chalmers Centre, Gothenburg, Sweden
Sep 2001 – Aug 2002	Visiting research assistant Dept of Mathematics, UC Berkeley
Sep 1999 – Aug 2001	Postdoctoral fellow Dept of Statistics, UC Berkeley
Aug 1995 – June 1999	Graduate student Dept of Math Statistics, Gothenburg University, Sweden Adviser: Ziad Taib
Aug 1995 – June 1999	Statistical consultant Dept of Math Statistics, Gothenburg University, Sweden Supervisor: Tommy Norberg
Jan 1995 – June 1995	Technical translator Wordworks AB, Gothenburg, Sweden Supervisor: Lennart Widhe

EDUCATION

M.Sc., Department of Mathematical Statistics, Gothenburg University 1995
Thesis: *Multivariat kalibrering*
Adviser: Ziad Taib

Ph.Lic., Department of Mathematical Statistics, Gothenburg University 1998
Thesis: *Branching Processes and Cell Populations*
Adviser: Ziad Taib

Ph.D., Department of Mathematical Statistics, Gothenburg University 1999
Thesis: *Branching Processes and Cell Populations*
Adviser: Ziad Taib

Docent, Mathematical Sciences, Chalmers University of Technology 2004

TEACHING EXPERIENCE

Co-lecturer, Fall 2005.
Bioinformatics I.
Department of Mathematical Statistics, Chalmers, Gothenburg.

Co-lecturer, Fall 2003.
Bioinformatics II.
Department of Mathematical Statistics, Chalmers, Gothenburg.

Co-lecturer, Fall 2003.
Bioinformatics I.
Department of Mathematical Statistics, Chalmers, Gothenburg.

Co-lecturer, Fall 2002.
Bioinformatics II.
Department of Mathematical Statistics, Chalmers, Gothenburg.

Guest lecturer, Fall 2001.
PH296 – Applications of Statistics to Genetics and Molecular Biology.
Department of Statistics, UC Berkeley.

Guest lecturer, Spring 2000.
Stat 260 – Topics in probability theory.
Department of Statistics, UC Berkeley.

Teaching Assistant, Spring 2001.
Stat C141 – Statistics for Bioinformatics.
Department of Statistics, UC Berkeley.

Computer Lab Teaching Assistant, June 2000.
PMMB Introductory Short Course.
MSRI, Berkeley.

Lecturer, Fall 1998.
Elementary course in Mathematical Statistics for engineer students (Z3).
Chalmers University of Technology, Gothenburg.

Lecturer, Fall 1997.
Elementary course in Mathematical Statistics for engineer students (Z3).
Chalmers University of Technology, Gothenburg.

Teaching assistant, 1995 – 1997.
Elementary courses in Mathematical Statistics.
Chalmers University of Technology, Gothenburg.

SUPERVISING EXPERIENCE

Co-adviser, M.Sc. thesis project, Aug 2002 – Aug 2003.
Title: *Optimal evolutionary distance for cross-species gene finding and alignment.*

PUBLICATIONS

Note: In 2005 my last name changed from Alexandersson to Axelson-Fisk.

Refereed journal articles

1. Alexandersson, M. (2005). The Cell Cycle. In *Branching Processes: Variation, Growth, and Extinction of Populations.* Editors: Jagers, P. and Haccou, P.
2. Rat Genome Sequence Consortium. (2004). Evolution of the Mammalian Genome: Sequence of the Genome of the Brown Norway Rat. *Nature*, **428**, 493 – 521.
3. Dewey, C., Wu, J.Q., Cawley, S., Alexandersson, M., Gibbs, R., Pachter, L. (2004). Accurate Identification of Novel Human Genes Through Simultaneous Gene Prediction in Human, Mouse and Rat. *Genome Res*. **14**(4), 661 – 664.
4. Lang, T., Alexandersson, M., Hansson, G.C., Samuelsson, T. (2004). Bioinformatic identification of polymerizing and transmembrane mucins in the puffer fish *Fugu rubripes*. *Glycobiology* **14**(6), 521 – 527.
5. Lam, F., Alexandersson, M., Pachter, L. (2003). Picking Alignments from (Steiner) Trees. *J. Comp. Bio.*, **10**(3-4), 509 – 520.
6. Cawley, S., Pachter, L., Alexandersson, M. (2003). SLAM webserver for comparative gene finding and alignment. *Nucl. Ac. Res.*, **31**(13), 3507 – 3509.
7. Alexandersson, M., Cawley, S., Pachter, L. (2003). SLAM: Cross-species Gene Finding and Alignment with a Generalized Pair Hidden Markov Model. *Genome Res.*, **13**(3), 496 – 502.
8. Waterston, R.H., Lindblad-Toh, K., Birney, E., Rogers, J., Abril, J.F., Agarwal, P., Agarwala, R., Ainscough, R., Alexandersson, M., An, P., *et al*. (2002). Initial sequencing and comparative analysis of the mouse genome. *Nature*, **420**, 520 – 562.
9. Pachter, L., Alexandersson, M., Cawley, S. (2002). Applications of Generalized Pair Hidden Markov Models to Alignment and Gene Finding Problems. *J. Comp. Bio.*, **9**(2), 389 – 399.
10. Alexandersson, M. (2001). Existence of the Stable Birth Type Distribution in a General Branching Process Cell Cycle Model with Unequal Cell Division. *J. Appl. Prob.*, **38**(3), 673 – 685.
11. Alexandersson, M. (1998). An Application of General Branching Processes to a Cell Cycle Model with Two Uncoupled Subcycles and Unequal Cell Division. *Int. J. Appl. Math. and Comp. Sci.*,**1**, 131-145.

Book chapters

12. Alexandersson, M., Bray, N., Pachter, L. (2005). Pair hidden Markov models. Special review in *Encyklopedia of Genetics, Genomics, Proteomics and Bioinformatics.* John Wiley & Sons, Ltd. Editors: Jorde, L.B., Little, P., Dunn, M. and Subramanian, S.
13. Axelson-Fisk, M., Sunnerhagen, P. (2005). Gene finding in fungal genomes. In preparation. In *Topics in Current Genetics: Comparative genomics using fungi as models*. Springer Verlag. Editors: Sunnerhagen, P. and Piskur, J.

Conference proceedings

14. Alexandersson, M. (2003). Gene Finding, Alignments, and Generalized Pair Hidden Markov Models. *Proceedings of the 54th ISI session*, ISI Berlin 2003, 1 – 4.
15. Pachter, L., Lam, F., Alexandersson, M. (2002). Picking Alignments from (Steiner) Trees. *RECOMB 2001: Proceedings of the Sixth International Conference on Computational Molecular Biology*.
16. Pachter, L., Alexandersson, M., Cawley, S. (2001). Applications of Generalized Pair Hidden Markov Models to Alignment and Gene Finding Problems. *RECOMB 2001: Proceedings of the Fifth International Conference on Computational Molecular Biology*.

Patents

17. Alexandersson, M., Cawley, S., Pachter, L. (2004). Patent pending on the SLAM algorithm.

Ph.D. Thesis

18. Alexandersson, M. (1998). *Branching Processes and Cell Populations.*, Ph.D. thesis, Dept. Mathematics, Gothenburg University.

Software

19. Alexandersson, M., Cawley, S., Pachter, L. *SLAM*: A cross-species gene finding and alignment tool based on generalized pair hidden Markov models. `http://bio.math.berkeley.edu/slam/`
20. Alexandersson, M., Lang, T., Hansson, G.C., Samuelsson, T. *MPRED*: A mucin domain prediction software.

COMISSION OF TRUST

Thesis committees:

- Niklas Eriksen, Dept of Mathematics, KTH 2004
- Sven Nelander, Institute of Medical Biochemistry, Sahlgrenska 2005
- Marcus Krantz, Dept of Cell and Molecular Biology, Gothenburg Uni. 2005
- Markus Wistrand, CGB, Karolinska Institute 2006
- Kasper Munch, Bioinformatics Centre, Univ of Copenahgen 2006
- Ahmad Hamta, Dept of Pathology, Gothenburg Uni. 2006

Organizing and program committees:

- Workshop in Population Dynamics, Gothenburg, Sweden 1998
- Mathematics of Cell Physiology and Proliferation, Italy 1999
- IEEE Computer Society Bioinformatics Conference, Palo Alto, CA 2002

Peer review/referee:

- Journal of Theoretical Biology. 1999
- Recomb2001. 2001

Other:

- Board member, Swedish Statistical Society 2002 - 2004
- Member of the SNIC network 2005 – present

INVITED SPEAKER

2005:

- The IBS Nordic regional Conference, Oslo.

2004:

- UNICC lectures series in Scientific Computating at Chalmers, Gothenburg.

2003:

- Department of Medical Biochemistry, Gothenburg University.
- Chalmers Bioscience Seminar, Chalmers, Gothenburg.
- Department of Clinical Neuroscience, Mölndals sjukhus.
- Department of Medical Epidemiology and Biostatistics, Karolinska Institute, Stockholm.
- MY – Workshop, Matematik i yrkeslivet, Chalmers, Gothenburg.
- The 6th Annual functional genomics symposium, Gothenburg.
- The 54th ISI Session, Berlin.
- The 2nd Nordic Summer School for Female PhD Students in Mathematics, Chalmers, Gothenburg.
- The IBS Nordic regional Conference, Uppsala.
- Department of Mathematics, Stockholm University.

2002:

- The 5th Conference on Mathematical Modelling and Computing in Biology and Medicine, Milano.
- The 19th Nordic Conference on Mathematical Statistics, Stockholm.
- The Genome Sequencing and Biology Workshop, Cold Spring Harbor, New York.

2001:

- The 2nd Annual National Workshop for PhD students and PostDocs in Bioinformatics, Gothenburg.

2000:

- The Walter and Eliza Hall Institute of Medical Research, Melbourne, 2000.
- Department of Statistics, Stanford University, Palo Alto, 2000.
- The Branching Process symposium, Gothenburg, 1998.
- The Workshop in Population Dynamics, Gothenburg, 1998.