Mika Gustafsson, PhD

Position: Associate Professor and senior lecturer
Department: Department of Physics, Chemistry and Biology (IFM)

Affiliation: Linköping University, Sweden

Office: Fysikhuset, Rum 4G.411 Campus Valla
E-mail: mika.gustafsson@liu.se
Homepage: https://liu.se/en/research/translational-bioinformatics

Education

2002	MSC in Mathematics, Dept. of Mathematics, Stockholm Univeristy
2003	MSC in Theoretical Physics, Dept. of Physics and meas. Tech., LiU
2010	PhD in Theoretical and Applied Mathematical Physics, Dept. of Science and Tech., Norrköping, LiU

Professional Experience

2017	PhD decision board at PhD dissertation of Andre Larsson, Lund Univeristy
2015	Editorial board Frontiers in microbiology
2012	Opponent of Fil Lie Benjamin Ulfenborg, Örebro University

Publications

1. *Magnusson M, Mariotti G P, Köpsén M, Lövfors W, Gawel D R, Jörnsten R, Linde J, Nordling T, Nyman E, Schulze S, Nestor C E, Zhang H, Cedersund G, Benson M, Tjärnberg A **& Gustafsson M**. LASSIM –a network inference toolbox for genome-wide mechanistic modelling. PLoS Comp Biol, 2017 Jun, 13(6): IF 5

2. Vlaic S, Conrad T, Tokarski-Schnelle C, **Gustafsson M**, Dahmen U, Guthke R, & Schuster S. ModuleDiscoverer: Identification of regulatory modules in protein-protein interaction networks. Scientific Reports, 8 433, 2018, IF 4.

3. *Nestor C, Lentini A, **Gustafsson M**, Mattson L, Meehan R, Zhang H, Benson M. A multi-layered, time-series genomics approach reveals TET1-mediated DNA demethylation as a master regulator of human T-helper cell differentiation. Cell Reports , Vol. 16, Issue 2, p559–570, 2016, IF 8.

4. Hellberg S, Eklund D, Zhang H, Nestor C, Vrethem M, Jernmalm M, Benson M, **Gustafsson M[#+]**, and Ernerudh J[#], [#]**shared last and [+]lead corresponding author**. Gene Expression Profiling of Resting and Activated CD4+ T Cells in Patients with Multiple Sclerosis, Cell Reports, Vol. 16, Issue 11, p2928, 2016, IF 8.

5. Serra-Musach J , F Mateo , G Garibay , A Villanueva , E Capdevila , S Jaeger , Aloy , **M Gustafsson**, M Benson , H Heyn , M Vizoso , H Pérez , Á Cordero , E Gonzalez Suarez , M Esteller , X Yang , J Arribas , G Moreno-Beuno , C Lázaro , M Ferrer, M Pujana. Network activity predicts cancer therapeutic response and synergism. Genome Med, 8 (1), 88, 2016, IF 6.

6. *Magnusson R, **Gustafsson M**, Strålfors P, Cedersund G, Nyman E, Combined positive and negative crosstalk activates mTORC2 in insulin resistant adipocytes, Bioscience Reports, BSR20160514, 2016, IF 2.

7. Mattson L, Lentini A, Gawel D R,1 Badam T, Benson M, Ledin T, Nestor C E, **Gustafsson M**, Serra-Musach J, Björkander J, Xiang Z, & Zhang H, Potential Involvement of Type I Interferon Signaling in Immunotherapy in Seasonal Allergic Rhinitis, Journal of Immunology Research 2016, Article ID 5153184, IF 3.

8. *Schleicher J, Conrad T, **Gustafsson M**, Cerdesund G, Guthke R, Linde J. Facing the challenges of multiscale modelling of bacterial and fungal pathogen-host interactions. Briefings in Functional Genomics,2016. Feb 8, IF 4.

9. ***Gustafsson M**[#], Gawel D, Eklund D, Ernerudh J, Hellberg S, Konstantinell A, Lentini A, Liljenström R, Wang H, Serra-Musach J, Pujana M A, Zhang H, Nestor C E, Benson M[#]. [#]**corresponding authors**. A validated gene regulatory network and GWAS to identify early transcription factors in T-cell associated diseases, Science Translational Medicine 2015, 11 Nov 2015 : 313ra178, IF 16

10. Zhang H, **Gustafsson M**, Nestor C, Chung F, Benson M. Can targeted omics and systems medicine contribute to individualised medicine in respiratory diseases? Lancet Respir Med 2014 Oct, 2 (10):785-7. IF 10

11. **Gustafsson M**, Nestor CE, Zhang H, Barabási AL, Baranzini S, Brunak S, Chung KF, Federoff HJ, Gavin AC, Meehan RR, Picotti P, Pujana MA, Rajewsky N,. Smith KGC, Sterk PJ, Villoslada P, Benson M. Systems medicine: can it contribute to predictive, preventative, personalized and participatory health care? Genome Med 2014 Oct 17, 6 (10):82. IF 6

12. Bruhn S, Fang Y, Barrenäs F, **Gustafsson M**, Zhang H, Konstantinell A, Krönke A, Sönnichsen B, Bresnick A, Dulyaninova N, Wang H, Zhao Y, Klingelhöfer J, Ambartsumian N, MK Beck, Nestor CE, Bona E, Xiang Z, Benson M. A generally, applicable module-based translational strategy identifies a key diagnostic and therapeutic candidate gene in allergy. Science Translational Medicine 2014:8;6(218) IF 16

13. Nestor CE, Barrenäs F, Wang H, Zhang H, Bruhn S, Jörnsten R, Langston MA, Rogers G, **Gustafsson M**[#] , Benson M[#]. [#]**shared last author**. CD4+ T-cell methylation separates allergic patients from healthy controls. Plos Gen 2014;10(1):e1004059 IF 9.

14. **Gustafsson M**, Edström M, Gawel D, Nestor CE, Wang H, Zhang H, Barrenäs F, Tojo J, Kockum I, Olsson T, Serra-Musach J, Bonifaci N, Pujana MA, Ernerudh J, Benson M. Integrated genomic and prospective clinical studies show the importance of modular pleiotropy for disease susceptibility, diagnosis and treatment. Genome Med 2014;6(2):17. Highly assessed article. IF 5.

15. Gawel D, James A, Benson M, Zhang H, R Liljenström, A Muraro C E Nestor, H Zhang, **Gustafsson M**. Allergic airway database – a user friendly microarray repository. Allergy 2014 69 (8). IF 6.

16. Nestor C, Björkander J, Ernerudh J, **Gustafsson M**, Benson M, Zhang H. Sublingual immunotherapy alters expression of IL-4 and its soluble and membrane-bound receptors. Allergy 2014. IF 6.

17. Bruhn S., Katzenellenbogen M., **Gustafsson M.**, Krönke A., Sönnichsen B., Zhang H., and Benson M. Combining gene expression microarray- and cluster analysis with sequence-based predictions to identify regulators of IL-13 in allergy. Cytokine, 2012, 60(3), 736-740. IF 3.

18. Sjögren A-K, Barrenäs F., A Muraro, **Gustafsson M**, Saetrom P., Wang H. and Benson M. Monozygotic twins discordant for intermittent allergic rhinitis differ in mRNA and protein levels. Allergy, 2012, 67(6), 831-833. IF 6.

19. Zhao Y., Wang H., **Gustafsson M.,** Muraro A., Bruhn S. and Benson M., Combined Multivariate and Pathway Analyses Show That Allergen-Induced Gene Expression Changes in CD4(+) T Cells Are Reversed by Glucocorticoids. PLoS ONE, 2012, 7(6). IF 4.

20. **Gustafsson M.**, Lundberg T., Andren P. Prognostic models for the condition indices in the Swedish Transport Administration's Pavement Managment System – Macrotexture, MPD, 2012. VTI rapport 765.

21. **Gustafsson M**, Hornquist M. Gene expression prediction by soft integration and the elastic net *best* performance of the DREAM3 gene expression challenge. PLoS One 2010 Feb 16;5(2):e9134. IF 4.

22. **Gustafsson M**, Hörnquist M, Björkegren J, Tegnér J. Genome-Wide System Analysis Reveals Stable yet Flexible Network Dynamics in Yeast. IET Systems Biology 2009;3(4):219-228. IF 2.

23. **Gustafsson M**, Hornquist M, Lundstrom J, Bjorkegren J, Tegner J. Reverse engineering of gene

networks with LASSO and nonlinear basis functions. <u>Ann N Y Acad Sci</u> 2009 Mar;1158:265-275. IF 4.

24. **Gustafsson M**, Hörnquist M, Lombardi A. Comparison and validation of community structures in complex networks. <u>Physica A</u>: Statistical Mechanics and its Applications 2006 7/15;367:559-576. IF 2.

25. **Gustafsson M**, Hornquist M, Lombardi A. Constructing and analyzing a large-scale gene-to-gene regulatory network--lasso-constrained inference and biological validation. <u>IEEE/ACM Trans Comput Biol Bioinform</u> 2005 Jul-Sep;2(3):254-261. IF 2.

26. *FANTOM Consortium, including **Gustafsson M** as one co-author- The transcriptional network that controls growth arrest and differentiation in a human myeloid leukemia cell line. <u>Nat Genet</u> 2009 May;41(5):553-562.   IF 35.

27. **Gustafsson M**, Hornquist M.   Stability and Flexibility from a System Analysis of Gene Regulatory Networks Based on Ordinary Differential Equations. <u>The Open Bioinformatics Journal</u>, 2011, 5, 26-33.

28. Bruhn S., Katzenellenbogen M., **Gustafsson M.**, Krönke A., Sönnichsen B.,   Zhang H., and Benson M.   Combining gene expression microarray- and cluster analysis with sequence-based predictions to identify regulators of IL-13 in allergy. <u>Cytokine</u>, 2012, 60(3), 736-740. IF 3.

29. Sjögren A-K, Barrenäs F., A Muraro, **Gustafsson M**, Saetrom P., Wang H. and Benson M. Monozygotic twins discordant for intermittent allergic rhinitis differ in mRNA and protein levels. <u>Allergy</u>, 2012, 67(6), 831-833. IF 6.

30. Zhao Y., Wang H., **Gustafsson M.,** Muraro A., Bruhn S. and Benson M., Combined Multivariate and Pathway Analyses Show That Allergen-Induced Gene Expression Changes in CD4(+) T Cells Are Reversed by Glucocorticoids.   <u>PLoS ONE</u>, 2012, 7(6). IF 4.

31. **Gustafsson M.**, Lundberg T., Andren P. Prognostic models for the condition indices in the Swedish Transport Administration's Pavement Managment System – Macrotexture, MPD, 2012. <u>VTI rapport</u> 765.

32. Nestor C, Björkander J, Ernerudh J, **Gustafsson M**, Benson M, Zhang H. Sublingual immunotherapy alters expression of IL-4 and its soluble and membrane-bound receptors. <u>Allergy</u> 2014. IF 6.

33. Ihs, A., **Gustafsson, M.**, Eriksson, O., Wiklund, M., Sjögren, L., 2011. Road user effect models – the influence of rut depth on traffic safety, <u>VTI rapport</u> 731A.

34. A Niska, L Sjögren, **M Gustafsson,**   Measuring the surface evenness of cycle paths. Development and test of a method to assess the riding quality perceived by cyclists based on the longitudinal profile of a cycle path, 2011, <u>VTI Rapport</u> 699

35. T Lundberg, L Sjögren, **M Gustafsson**, A Ihs Road surface texture and its variation – Road surface monitoring, <u>VTI notat</u> 5-2011