

Derek Ruths

Assistant Professor, McGill University

Work: 514-398-7079

Email: derek.ruths@mcgill.ca

Website: <http://www.networkdynamics.org>

Education

Rice University, Houston, Texas - Computer Science Ph.D. Program, Spring 2009

Thesis: *Execution Strategies for Executable Biology*

Advisor: Luay Nakhleh

Rice University, Houston, Texas - M.S. in Computer Science, Spring 2006

Thesis: *Applications of Phylogenetic Incongruence for Detecting and Reconstructing Interspecific Recombination and Horizontal Gene Transfer.*

Advisor: Luay Nakhleh

Rice University, Houston, Texas - B.S. in Computer Science, Spring 2003

Peer-Reviewed Publications

1. F. A. Zamal and D. Ruths. The structural origins of robustness in transcriptional robustness. BMC Biology, Submitted.
2. W. Liu, F. A. Zamal, and D. Ruths. Using social media to infer gender composition of commuter populations. When the City meets the Citizen, International Conference on Social Media and Weblogs, 2012.
3. F. A. Zamal, W. Liu, and D. Ruths. Homophily and Latent Attribute Inference: Inferring Latent Attributes of Twitter Users from Neighbors. International Conference on Social Media and Weblogs 2012.
4. M. Perreault and D. Ruths. The effect of mobile platforms on Twitter content generation. International Conference on Social Media and Weblogs 2011.
5. D. Ruths and F. A. Zamal. "A method for the automated, reliable retrieval of publication-citation records." PLoS ONE 5(8):e12133, 2010.
6. D. Ruths and L. Nakhleh. "Deriving predictive models of signaling network dynamics from semi-quantitative proteomic data." In Proceedings of the Conference on Computational Systems Bioinformatics, Stanford, CA, 2010.
7. T. Ruths, D. Ruths, and L. Nakhleh. "GS²: An efficiently computable measure of GO-based similarity of gene sets." Bioinformatics, 25(9):1178-1184, 2009.
8. M Fete, H. van Bokloven, S. Clements, F. McKeon, D. R. Roop, M. I. Koster, C. Missero, L. D. Attardi, V. A. Lombillo, E. Ratoviski, M. Julapalli, D. Ruths, V. P. Sybert, E. C. Siegfried, A. F. Bree. "Conference Report: International Research Symposium on Ankyloblepharon-Ectodermal Defects-Clift Lip and/or Palate (AEC) Syndrome." American Journal of Medical Genetics. To appear, 2008.
9. C. Than, D. Ruths, L. Nakhleh. "PhyloNet: A Software Package for Analyzing and Reconstructing Reticulate Evolutionary Relationships." BMC Bioinformatics, 9:322, 2008.
10. D. Ruths and M. Maas. "Novel Graph-theoretic Analysis of Roads in Late Antiquity." Proceedings of the Conference on Highways and Byways, 2008.
11. D. Ruths, L. Nakhleh, P. T. Ram. "Rapidly exploring structural and dynamic properties of signaling networks using PathwayOracle." BMC Systems Biology, 2:76, 2008.

12. D. Ruths, M. Muller, J. T. Tseng, L. Nakhleh, and P. T. Ram. "The Signaling Petri Net-Based Simulator: A Non-Parametric Strategy for Characterizing the Dynamics of Cell-Specific Signaling Networks." *PLoS Computational Biology*, 4(2):e1000005, 2008.
13. C. Than, D. Ruths, H. Innan, L. Nakhleh. "Confounding Factors in HGT Detection: Statistical Error, Coalescent Effects, and Multiple Solutions." *Journal of Computational Biology*, 14(4):517-535, 2007.
14. D. Ruths, J. T. Tseng, L. Nakhleh, P. T. Ram. "De novo Signaling Pathway Predictions based on Protein-Protein Interaction, Targeted Therapy and Protein Microarray Analysis." *Proceedings of the RECOMB Satellite Workshop on Systems Biology and Proteomics. Lecture Notes in Bioinformatics (LNBI #4463)*, 61-72, 2007.
15. C. Than, D. Ruths, H. Innan, and L. Nakhleh. "Identifiability Issues in Phylogeny-based Detection of Horizontal Gene Transfer." *Proceedings of the 4th RECOMB Comparative Genomics Satellite Workshop, (LNBI 4205):215-229*, 2006.
16. D. Ruths, L. Nakhleh, M. S. Iyengar, S. A. G. Reddy, and P. T. Ram. "Graph-theoretic Hypothesis Generation in Biological Signaling Networks." *Journal of Computational Biology*. 13(9):1546-1557, 2006.
17. D. Ruths and L. Nakhleh. "Techniques for Assessing Phylogenetic Branch Support: A Performance Study." *Proceedings of the 4th Asia Pacific Bioinformatics Conference (APBC2006)*, 187-196, 2006.
18. D. Ruths and L. Nakhleh. "RECOMP: A Parsimony-based Method for Detecting Recombination." *Proceedings of the 4th Asia-Pacific Bioinformatics Conference, (APBC2006)*, 59-68, 2006.
19. L. Nakhleh, D. Ruths, and L.S. Wang. "RIATA-HGT: A Fast and Accurate Heuristic for Reconstructing Horizontal Gene Transfer." *Proceedings of the 11th International Computing and Combinatorics Conference (LNCS 3595)*, 84-93, 2005.
20. D. Ruths and L. Nakhleh. "Recombination and Phylogeny: Effects and Detection." *International Journal on Bioinformatics Research and Applications*, 1(2):202-212, 2005.
21. J. M. Tour, W. L. Van Zandt, C. P. Husband, S. M. Husband, E. C. Libby, D. Ruths, K. K. Young, L. S. Wilson, P. D. Franzon, and D. P. Nackashi. "Nanocell Logic Gates for Molecular Computing." *IEEE Transactions on Nanotechnology*. 1(2):100-109, 2002.
22. D. Ruths, E. Chen, and L. Ellis. "Arbor3D: An Interactive Environment for Examining Phylogenetic and Taxonomic Trees in Multiple Dimensions." *Bioinformatics*. 16(11): 1003-1009. 2000.
23. D. Ruths, E. Chen, and L. Ellis. "A Virtual Genome Environment for the Visualization and Navigation of Genomic Data." *Proceedings of the 4th International Immersive Projection Technology Workshop*. Iowa State University. Ames, Iowa. 2000.