

David L Gibbs
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Education

PhD, Bioinformatics, Oregon Health and Science University, 2012
Dissertation Title: Integrated Signatures of Disease Using Network Methods
Advisor: Shannon K McWeeney

Postbac, Computer Science, Portland State University, 2005 - 2008

B.A., Chemistry, Reed College, 1999

Experience

Research Scientist: The Institute for Systems Biology, 2017-present
Employed with Shmulevich Lab at ISB working on TCGA PanCancer immune response project and the NCI cancer genomics cloud pilot.

Postdoctoral Fellow: The Institute for Systems Biology, 2015-2017
Employed with Shmulevich Lab at ISB working on a large multi-site collaboration with Inova and a project with the Cancer Genome Atlas group.

Postdoctoral Fellow: OHSU & The Institute for Systems Biology, 2012-2015
External collaborator with the Shmulevich Lab at ISB working on a large multi-site collaboration researching the genetic regulatory basis underlying preterm birth.

Graduate Research Assistant: OHSU, OCTRI 2011-2012
Bioinformatics programming and analysis on large multi-center proteomics collaboration.

Research Assistant: OHSU, OCTRI 2009
Performed copy number variant analysis of SNP array data in a Leukemia study for Beth Wilmot.

Teaching Assistant: OHSU, DMICE 2009
Met with students and graded homework in Introduction to Java for Michelle Hribar.

Research Assistant: OHSU, Center for Hematologic Malignancies, Summer 2009
Provided computational support in cancer research collaboration.

Grader: Portland State University, Computer Science Dept. 2005-2006
Graded Introduction to Computer Science I & II, and Data Structures for Karla Fant.

Publications

Gibbs DL, Shmulevich I. Solving the influence maximization problem reveals regulatory organization of the yeast cell cycle. *PLoS computational biology*. 2017; 13(6):e1005591.

Poole W, Gibbs DL, Shmulevich I, Bernard B, Knijnenburg TA. Combining dependent P-values with an empirical adaptation of Brown's method. *Bioinformatics* (Oxford, England). 2016; 32(17):i430-i436.

Gibbs DL*, Dhankani V*, Knijnenburg T, Kramer R, Vockley J, Niederhuber J, Shmulevich I, Bernard B. Using Incomplete Trios to Boost Confidence in Family Based Association Studies. *Frontiers in genetics*. 2016; 7:34. (*co-first-authors)

Gibbs DL, Gralinski L, Baric RS, McWeeney SK. Multi-omic network signatures of disease. *Frontiers in genetics*. 2014; 4:309.

Gibbs DL, Baratt A, Baric RS, Kawaoka Y, Smith RD, Orwoll ES, Katze MG, McWeeney SK. Protein co-expression network analysis (ProCoNA). *Journal of clinical bioinformatics*. 2013; 3(1):11.

Siegel DH, Shieh JT, Kwon EK, Baselga E, Blei F, Cordisco M, Dobyns WB, Duffy KJ, Garzon MC, Gibbs DL, Grimmer JF, Hayflick SJ, Krol AL, Kwok PY, Lorier R, Matter A, McWeeney S, Metry D, Mitchell S, Pope E, Santoro JL, Stevenson DA, Bayrak-Toydemir P, Wilmot B, Worthey EA, Frieden IJ, Drolet BA, Broeckel U. Copy number variation analysis in 98 individuals with PHACE syndrome. *The Journal of investigative dermatology*. 2013; 133(3):677-84.

Journal Reviews

Bioinformatics

Computers in Biology and Medicine

Podium Presentations

Gibbs, D. L., Shmulevich, I. (2016). Solving the maximum influence problem on biological networks. ISMB, Late Breaking Research, Orlando.

Gibbs, D. L., Shmulevich, I. (2014). Using information flow models and ant optimization to solve the influence maximization problem on biological networks as line digraphs. OHSU Research Week.

Gibbs, D. L., McWeeney, S. (2013). Mind the gap: strategies for integrating proteomic data. ISMB Berlin, Mass Spec Special Interest Group.

Gibbs, D. L., McWeeney, S. (2013). Multi-omic network signatures of disease. NLM Informatics Training Conference, Bethesda MD, Plenary session.

Gibbs, D. L., McWeeney, S. (2013). Multi-omic network signatures of disease. OHSU Research Week.

Gibbs, D. L., McWeeney, S., (2012). Peptides, Proteins and Networks: Removing obstacles and getting on the road to systems integration. OHSU Research Week.

Gibbs, D. L., Bankhead III, A. (2011). Reducing Variability in Co-Expression Network Construction. NLM Informatics Training Conference, Bethesda MD.

Poster Presentations

Gibbs, D. L., Shmulevich I. (2014) Solving the Influence Maximization Problem with network flows, ant optimization, and regulatory line graphs. ISB Retreat.

Lee, C. G., Baraff, A., Smith, R., Baker, E., Petyuk, V., Cawthon, P. M., Bauer, D. C., Gibbs, D. L., Baratt, A., McWeeney, S. K., Lapidus, J., Orwoll, E. S. (2013). Novel Markers of Obesity: a Population-Based Proteomic Approach. ENDO

Gibbs, D. L., McWeeney, S., (2012). Peptides, Proteins and Networks: Removing obstacles and getting on the road to systems integration. ISMB, Boston.

Vingara, L. K., Gibbs, D. L., Bankhead III, A., Boudreau, E. (2012). Robust Information Recovery for Statistical Spectroscopy. Experimental NMR Conference.

Baratt, A., Baraff, A., Petyuk, V., Gibbs, D. L., Woffedin, C., Sarver, S., Sandoval, J., Anderson, F., Smith, R., Lapidus, J., McWeeney, S. K., Orwoll, E. S. (2011). Statistical and Bioinformatics Considerations for Population Level Proteomic Biomarker Studies. RECOMB Satellite Conference on Computational Proteomics.

Gibbs, D. L., Bankhead III, A. (2011). Managing Variability in Co-Expression Network Construction. AMIA Summit on Translational Bioinformatics, San Francisco.

Siegel, D., Gibbs, D. L., Frieden, I., Drolet, B., Broeckel, U. (2011). Copy number variation analysis in PHACE syndrome. Society for Investigative Dermatology Annual Meeting, Pheonix AZ.

Wilmot, B., Gibbs, D. L., Hsieh, P. H., McWeeney, S. K. (2009). Considerations for Algorithm Selection and Experimental Design in Detection of Copy Number Variation in Cancer” ISMB.

Awards

NLM Postdoctoral Fellowship, 2012
ISCB Travel Fellowship, Long Beach Meeting 2012
NLM Predoctoral Fellowship (ARRA Grant) 2009-2011

Teaching

Bio-Algorithms, OHSU BMI 550, Mentored and gave two lectures.

Bioinformatics seminar, OHSU BMI 553, class co-lead, focus on Bayesian networks.

Professional Activities

ISB Postdoc Board Member 2015-2016

Member of the International Society for Computational Biology (ISCB) 2010-current

Member of student counsel ISCB 2013-2014