

Curriculum Vitae

The Johns Hopkins University School of Medicine

Jiang Qian, Ph.D

08/19/2010

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointment

Associate Professor
Wilmer Eye Institute
The Johns Hopkins University, School of Medicine

Business address

3017 Smith Building
The Wilmer Eye Institute
Johns Hopkins University, School of Medicine
400 N. Broadway Street
Baltimore, MD 21287
Tel: 443-287-3882
Email: jiang.qian@jhmi.edu

EDUCATION AND TRAINING

B.S. 1991, Applied physics, Shanghai Jiaotong University, Shanghai
M.S. 1994, Computational biology, Shanghai Biochemistry Institute, Shanghai
Ph.D. 1999, Physical chemistry, Max Planck Institute for Polymer Research, Mainz

PROFESSIONAL EXPERIENCE

2000-2001 Postdoc, Department of Molecular Biophysics and Biochemistry, Yale University
2002 Research Associate, Department of Molecular Biophysics and Biochemistry, Yale University
2002-2003 Research Associate, Wilmer Eye Institute, Johns Hopkins University
2003-2010 Assistant Professor, Wilmer Eye Institute, Johns Hopkins University
2008-2010 Assistant Professor, Oncology Center, Johns Hopkins University
2010-present Associate Professor, Wilmer Eye Institute, Johns Hopkins University
2010-present Associate Professor, Oncology Center, Johns Hopkins University

RESEARCH ACTIVITIES

Publications (*corresponding author)

1. **Qian, J.**, and Ding, D. "Standard state accessibility for the natural amino acids." *Acta Biophysica Sinica* 1993, **9**, 314-317.
2. Ding, D., **Qian, J.**, and Feng, Z. "A differential geometric treatment of protein structure comparison." *Bulletin of Mathematical Biology* 1994, **56**, 923-943.
3. **Qian, J.**, Hentschke, R., and Knoll, W. "Superstructures of cyclodextrine derivatives on Au(111): A combined random planting - molecular dynamics Approach." *Langmuir* 1997, **13**, 7092-7098.
4. **Qian, J.**, Stoeckelmann, E., and Hentschke, R. "Polarization effects in water clusters: A genetic algorithm approach." *J. Mol. Model.* 1999, **5**, 281-286.
5. **Qian, J.**, Hentschke, R., and Heuer, A. "Dynamic heterogeneities of translational and rotational motion of a molecular glass former from computer simulations." *J. Chem. Phys.* 1999, **110**, 4514-4522.
6. **Qian, J.**, Hentschke, R., and Heuer, A. "On the origin of dynamic heterogeneities in glass-forming liquids." *J. Chem. Phys.* 1999, **111**, 10177-10182.
7. Eckstein, E., **Qian, J.**, Hentschke, R., Thurn-Albrecht, T., Steffen, W., Fischer, E. W. "X-ray scattering study and molecular simulation of glass forming liquids: Propylene carbonate and Salol." *J. Chem. Phys.* 2000, **113**, 4751-4762.
8. **Qian, J.**, and Heuer, A. "Exchange rates of dynamic heterogeneities in a glass-forming liquid." *Euro. Phys. J. B.*, 2000, **18**, 501-505.
9. **Qian, J.**, Stenger, B., Wilson, C.A., Lin, J., Jansen, R., Teichmann, S.A., Park, J., Krebs, W., Alexandrov, V., Echols, N., and Gerstein, M. "PartsList: A web-based system for dynamically ranking protein folds based on disparate attributes, including whole genome expression and interaction information." *Nucleic Acids Research*, 2001, **29**, 1750-1764.
10. **Qian, J.**, Luscombe, N.M., Gerstein, M. "Protein fold and family occurrence in genomes: Power-law behaviour and evolutionary model", *J. Mol. Biol.* 2001, **313**, 673-681.
11. **Qian, J.**, Dolled-Filhart, M., Lin, J., Gerstein, M. "Beyond synexpression relationships: Local clustering of time-shifted and inverted gene expression profiles identifies new, biologically relevant interactions", *J. Mol. Biol.* 2001, **314**, 1053-1066.
12. Luscombe, N.M, **Qian, J.**, Zhang, Z., Johnson, T., Gerstein, M., "The dominance of the population by a selected few: power-law behaviour applies to a wide variety of genomic properties", *Genome Biology* 2002, **3**, research0040.1-0040.7
13. Horak, C.E., Luscombe, N.M, **Qian, J.**, Piccirillo, S., Gerstein, M., Snyder, M., "Complex transcriptional circuitry at the G1/S transition in *Saccharomyces cerevisiae*", *Genes & Development*, 2002, **16**, 3017-3033.
14. Lin, J., **Qian, J.**, Greebaum, D., Bertone, P., Das, R., Echols, N., Senes, A., Stenger, B., Gerstein, M., "GeneCensus: Global Genome Comparisons in terms of Metabolic Pathway Activity and Protein Family Sharing", *Nucleic Acids Research*, 2002, **30**, 4574-4582.

15. Jansen, R., Lan, N., **Qian, J.**, Gerstein, M., "Integration of genomic datasets to predict protein complexes in yeast", *Journal of Structural and Functional Genomics*, 2002, **2**, 71-81.
16. **Qian, J.**, Kluger, Y., Yu, H., Gerstein, M., "Identification and correction of spurious spatial correlation in microarray data", *Biotechniques*, 2003, **35**, 42-46.
17. Yu, H., Luscombe, N.M., **Qian, J.**, Gerstein, M., "Genomic analysis of gene expression relationships in transcriptional regulatory networks", *Trends in Genetics*, 2003, **19**, 422-427.
18. **Qian, J.**, Lin, J., Luscombe, N.M., Yu, H., Gerstein, M. "Predictions of regulatory networks: genome wide identification of transcription factor targets from gene expression data", *Bioinformatics*, 2003, **19**, 1917-1926.
19. Kluger, Y., Yu, H., **Qian, J.**, Gerstein, M., "Relationship between gene co-expression and probe localization on microarray slides", *BMC Genomics*, 2003, **4**, 49.
20. Chowers, I., Gunatilaka, T.L., Farkas, R.H., **Qian, J.**, Hackam, A.S., Duh, E., Kageyama, M., Wang, C., Vora, A., Campochiaro, P.A., Zack, D., "Identification of novel genes preferentially expressed in the retina using a custom human retina cDNA microarray", *Investigative Ophthalmology & Vision Science*, 2003, **44**, 3732-3741.
21. Farkas, R., **Qian, J.**, Goldberg, J., Quigley, H., Zack, D. "Gene Expression Profiling of Purified Rat Retinal Ganglion Cells" *Investigative Ophthalmology & Vision Science*, 2004, **45**, 2503-2513
22. Hackam A.S., **Qian J.**, Liu D., Gunatilaka T., Farkas R.H., Chowers I., Kageyama M., Parmigiani G., Zack D.J. "Comparative gene expression analysis of murine retina and brain", *Mol. Vis.*, 2004, **10**, 637-649.
23. Hackam, A.S., Strom, R., Liu, D., **Qian, J.**, Gunatilaka, T., Farkas, R., Chowers, I., Kageyama, M., Leveillard, T., Sahel, J., Campochiaro, P., Parmigiani, P., Zack, D., "Identification of Gene Expression Changes Associated with the Progression of Retina Degeneration in the rd1 Mouse" *Investigative Ophthalmology & Vision Science*, 2004, **45**, 2929-2942.
24. **Qian, J.*** Esumi, N., Chen, Y., Wang, Q., Chowers, I., Zack, D., "Identification of regulatory targets of tissue-specific transcription factors: application to retina-specific gene regulation", *Nucleic Acids Research*, 2005, **33**, 3479-3491.
25. Xia, S., Yang, J., Su, Y., **Qian, J.**, Ma, E., Haddad, G.G. "Identification of new targets of Drosophila pre-mRNA adenosine deaminase." *Physiol. Genomics*. 2005, **20**, 195-202.
26. Yu, X., Lin, J., Zack, D. and **Qian, J.*** "Computational analysis of tissue-specific combinatorial gene regulation: predicting interaction between transcription factors in human tissues", *Nucleic Acids Research*, 2006, **34**, 4925-4936.
27. **Qian, J.***, Lin, J. and Zack, D., "Characterization of binding sites of eukaryotic transcription factors", *Genomics, Proteomics & Bioinformatics* 2006, **4**, 67-79.
28. Yu, X., Lin, J., Masuda, T., Esumi, N., Zack, D.J., and **Qian, J.***, "Genome-wide prediction and characterization of interactions between transcription factors in *S. cerevisiae*", *Nucleic Acids Research*, 2006, **34**, 917-927.
29. Meir, T., Dror, R., Yu, X., **Qian, J.**, Simon, I., Pe'er, J. and Chowers, I., "Molecular Characteristics of Liver Metastases from Uveal Melanoma", *Investigative Ophthalmology & Vision Science*, 2007, **48**, 4890-4896.

30. Yu, H., Nguyen, K., Royce, T., **Qian, J.**, Nelson, K., Snyder, M., and Gerstein, M., "Positional artifacts in microarrays: experimental verification and construction of COP, an automated detection tool.", *Nucleic Acids Research*, 2007, **35**, e8.
31. Yang, Z., Quigley, H.A., Pease, M.E., Yang, Y., **Qian, J.**, Valenta, D., and Zack, D.J., "Changes in Gene Expression in Experimental Glaucoma and Optic Nerve Transection: The Equilibrium between Protective and Detrimental Mechanisms", *Investigative Ophthalmology & Vision Science*, 2007, **48**,5539-5548.
32. Yu, X., Lin, J., Zack, D.J., and **Qian, J.***, "Identification of tissue-specific cis-regulatory modules based on interactions between transcription factors" *BMC Bioinformatics*, 2007, **8**: 437.
33. Lu, J., Lin, Y., **Qian, J.**, Tao, S., Zhu, J., Pickart, C., and Zhu, H., "Functional dissection of a HECT domain ubiquitin E3 ligase" *Mol. Cell Proteomics*, 2008, **7**, 35-45.
34. Liu, X., Yu, X., Zack, D.J., Zhu, H., and **Qian, J.***, "TiGER: a database for tissue-specific gene expression and regulation", *BMC Bioinformatics*, 2008, **9**, 271.
35. Tao, S., Li, Y., Zhou, J., **Qian, J.**, Schnaar, R.L., Zhang, Y., Goldstein, I.J., Zhu, H., and Schneck, J.P., "Lectin microarrays identify cell-specific and functionally significant cell surface glycan markers", *Glycobiology*, 2008, **18**, 761-769.
36. Yu, X., Lin, J., Zack, D.J., Mendell, J.T., and **Qian, J.***, "Analysis of regulatory network topology reveals functionally distinct classes of microRNAs", *Nucleic Acids Research*, 2008, **36**, 6494-6503.
37. Lin, Y., Lu, J., Zhang, J., Walter, W., Dang, W., Wan, J., Tao, S., **Qian, J.**, Zhao, Y., Boeke, J.D., Berger, S. L., and Zhu, H., "Protein Acetylation Microarray Reveals NuA4 Controls Key Chronologic Aging Target Regulating Gluconeogenesis"., *Cell*, 2009, **136**, 1073-1084.
38. Wan, J., Lin, J., Zack, D.J., and **Qian, J.***, "Relating periodicity of nucleosome organization and gene regulation", *Bioinformatics*, 2009, **25**, 1782-1788.
39. Kung, L., Tao, S-C., **Qian, J.**, Smith, M., Snyder, M., Zhu, H., "Global analysis of the glycoproteome in *S. cerevisiae* reveals new roles for protein glycosylation", *Mol. Syst. Biol*, 2009, **5**:308.
40. Hu, S.[#], Xie, Z.[#], Onishi, A., Yu, X., Jiang, L., Lin, J., Rho, H., Woodard, C., Wang, H., Jeong, J., Long, S., He, X., Wade, H., Blackshaw, S.*, **Qian, J.*** Zhu, H.,* "Profiling the Human Protein-DNA Interactome Reveals ERK2 as a Transcriptional Repressor of Interferon Signalling", *Cell*, 2009, **139**, 610-622. ([#] co-first authors, * co-corresponding authors)
41. Xie, Z., Hu, S., Blackshaw, S., Zhu, H., **Qian, J.***, "hPDI: a database of experimental human protein-DNA interactions", *Bioinformatics*, 2010, **26**, 287-289.
42. Hackler, L.[#], Wan, J.[#], Swaroop, A., **Qian, J.***, Zack, D.J.*, "MicroRNA profile of the developing mouse retina", *IOVS*, 2010, **51**, 1823-1831. ([#]co-first authors, * co-corresponding authors).
43. Xie, Z., Kulasiri, D., Samarasinghe, S. **Qian, J.** "An Unbiased Sensitivity Analysis Reveals Important Parameters Controlling Periodicity of Circadian Clock". *Biotechnology and bioengineering*, 2010, **105**, 250-259.
44. Shimogori, T., Lee, D.A., Miranda-Angulo, A., Yang, Y., Yoshida, A.C., Kataoka, A., Mashiko, H., Jiang, L., Avetisyan, M., Qi, L., **Qian, J.**, and Blackshaw, S., "A

genomic atlas of mouse hypothalamic development”. *Nature Neuroscience*, 2010, **13**, 767-775.

45. Hu, J., Wan, J., Hackler, L., Zack, D.J., **Qian, J.***, “Computational analysis of tissue-specific gene networks: application to murine retinal functional studies”, *Bioinformatics*, 2010, (accepted).