

## Curriculum Vitae of

### Rui Hu

#### Current Position and Contact Information:

**Title:** Research Assistant Professor

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#### Education Background:

- Ph.D. in Mathematics, Department of Mathematics, University of Rochester, USA (09/2002 – 05/2007)
- M.S. in Applied Mathematics, Graduate School of Chinese Academy of Sciences, China (09/1999 – 06/2002)
- B.S. in Applied Mathematics, Department of Applied Mathematics, Sichuan University, China (09/1995 – 06/1999)

#### Research Experiences:

- **Research Assistant Professor** at Department of Biostatistics and Computational Biology, University of Rochester. (10/2009 – Present)
  - Developing statistical methods in genetic analysis.
  - Conducting high dimensional gene expression data analysis.
  - Developing stochastic process models in cell kinetics.
  - Developing statistical methods for medical imaging data such as DTI.
  - Implementing the related algorithms by R, S-Plus, SAS, Matlab, Python, C/C++ etc. under both Linux and Windows. Familiar with MPI parallel computing.
  - Serving as a biostatistician for Department of Surgery, University of Rochester.
  - Serving as a biostatistician for Department of Imaging Sciences, University of Rochester.
  - Serving in statistical consultation. Providing modeling and data analysis for different departments.
- **Postdoctoral** at Department of Biostatistics and Computational Biology, University of Rochester. (06/2007 – 09/2009)

#### Teaching Experiences:

- **Teaching Assistant** at Department of Mathematics, University of Rochester (09/2002 – 06/2007)

- Math courses teaching and related grading.

### **Honors:**

- Teaching Assistantship, Department of Mathematics, University of Rochester, 2002-2007.
- Outstanding graduate student scholarship, Graduate School of Chinese Academy of Sciences, 2000.
- Distinguished undergraduate student scholarship, Sichuan University, 1995-1999.
- The third prize in China Undergraduate Mathematical Contest in Modeling, Sichuan Area, 1997.
- The third prize in National High School Physics Olympic Competition, China, 1994.

### **Reviewer for Journals:**

- Bioinformatics
- Neurobiology of Aging
- Statistical Applications in Genetics and Molecular Biology
- Advances in Bioinformatics
- Virology Journal
- International Journal of Computers and Their Applications
- Electronic Journal of Statistics
- Plastic and Reconstructive Surgery

### **Research Grant Support:**

- Principal investigator, UR-CTSI Pilot, Clustering Differentially Associated Genes, 07/01/11 – 06/30/12.
- Biostatistician, Department of Health and Human Services (DHHS) BAA-BARDA-08-08, Eltrombopag as an Oral Agent for Hematopoietic Recovery after Acute Radiation Exposure, 09/16/08 – 02/29/12.
- Biostatistician, National Institutes of Health (NIH) 1 R56 AI083421-01A2, Mitochondrial Function and Antifungal Photodynamic Therapy, 09/02/11 – 08/31/12.
- Biostatistician, National Institutes of Health (NIH) 5 R21 HG004648-02, Novel Methods of Hypothesis Testing for Pathway Recognition in Genomic Data, 05/01/08 – 04/30/12.
- Investigator, National Institutes of Health (NIH) 1 R21 CA155832-01, Gene Expression Profiles in Tumors: Distinguishing Two Phenomena with One Array, 12/01/10 – 11/30/12.
- Investigator, Health Sciences Center for Computational Innovation (HSCCI) at the University of Rochester, Reliable and Efficient Diffusion Tensor Imaging (DTI) in a Longitudinal Study of Brain Injury, 02/01/10 – 01/30/11.
- Investigator, Harry W. Fischer Research Funds at the University of Rochester, Robust QA/QC for Clinical Diffusion Tensor Imaging (DTI) with Physical Phantom Calibration and Wild Bootstrap Analysis, 07/01/09 – 06/30/10.
- Biostatistician, National Institutes of Health (NIH) 5 R21 GM079259-02, Correlation Vectors in Gene Expression Profiling, 07/01/07 – 06/30/10.

### **Invited Presentations and Attended Conferences:**

### Presentations:

- “Correlation Between the True and False Discoveries in a Positively Dependent Multiple Comparison Problem”, University of Rochester, 2010.
- “A New Gene Selection Procedure Based on Intergene Correlation Changes”, the First International Conference on Bioinformatics and Computational Biology, New Orleans, USA, 2009.

### Attended:

- The Second International Conference on Bioinformatics and Computational Biology, Honolulu, Hawaii, USA, 2010.
- Bioconductor Conference Bioc2009, Seattle, USA, 2009.
- Conference of Statistical Modeling for Biological Systems, Rochester, NY, USA, 2009.
- AMS short course in the Radon transform and applications to inverse problem, Atlanta, USA, 2005.

### Publications:

#### Published on journals:

1. Mark Needham, **Rui Hu**, Sandhya Dwarkadas, Xing Qiu, Hierarchical Parallelization of Gene Differential Association Analysis, *BMC Bioinformatics*, 12:374. 2011.
2. Xiang Liu, Sven Ekholm, Balasubramanya S. Kolar, **Rui Hu** and Wei Tian, MR perfusion weighted imaging may help in differentiating between non-enhancing gliomas and non-neoplastic lesions in the cervicomedullary junction, *Journal of Magnetic Resonance Imaging*, 34(1):196-202, 2011.
3. Tong Zhu, **Rui Hu**, Xing Qiu, Michael Taylor, Yuen Tso, Constantin Yiannoutsos, Bradford Navia, Susumu Mori, Giovanni Schifitto and Jianhui Zhong, Quantification of Accuracy and Precision of Multi-Center DTI Measurements: A Diffusion Phantom and Human Brain Study, *NeuroImage*, 56(3):1398-411, 2011.
4. Xing Qiu and **Rui Hu**, Correlation Between the True and False Discoveries in a Positively Dependent Multiple Comparison Problem, accepted, *IMS Andrei Yakovlev Collection*, 2010.
5. Timothy M. Baran, Benjamin R. Giesselman, **Rui Hu**, Merrill A. Biel and Thomas H. Foster, Factors Influencing Tumor Response to Photodynamic Therapy Sensitized by Intratumor Administration of Methylene Blue, *Lasers in Surgery and Medicine*, 42: 728–735, 2010.
6. Boris Sepesi, Thomas J. Watson, David Zhou, Marek Polomsky, Virginia R. Little, Carolyn E. Jones, Daniel P. Raymond, **Rui Hu**, Xing Qiu and Jeffrey H. Peters, Are endoscopic therapies appropriate for superficial submucosal esophageal adenocarcinoma? An analysis of esophagectomy specimens. *Journal of the American College of Surgeons*, 210(4):418-27, 2010.
7. Thomas H. Foster, Benjamin R. Giesselman, **Rui Hu** and Soumya Mitra, Intratumor Administration of the Photosensitizer Pc 4 Affords Photodynamic Therapy Efficacy and Selectivity at Short Drug-Light Intervals, *Translational Oncology*, 3: 135-141, 2010.
8. Marek Polomsky, **Rui Hu**, Boris Sepesi, Matthew O'Connor, Xing Qiu, Daniel Raymond, Virginia Little, Carolyn Jones, Thomas Watson and Jeffrey Peters, A Population-based Analysis of Emergent vs. Elective Hospital Admissions for an Intrathoracic Stomach, *Surgical Endoscopy*, 24:1250–1255, 2010.
9. Marek Polomsky, Carolyn E. Jones, Boris Sepesi, Matthew O'Connor, Alexi Matousek, **Rui Hu**, Daniel P. Raymond, Virginia R. Little, Thomas J. Watson and Jeffrey H. Peters, Should Elective

Repair of Intrathoracic Stomach be Encouraged? *Journal of Gastrointestinal Surgery*, 14:203-210, 2010.

10. **Rui Hu**, Xing Qiu and Galina Glazko, A New Gene Selection Procedure Based on the Covariance Distance, *Bioinformatics*, 26(3):348-354, 2010.
11. Boris Sepesi, Daniel P. Raymond, Marek Polomsky, Thomas J. Watson, Virginia R. Little, Carolyn E. Jones, **Rui Hu**, Xing Qiu and Jeffrey H. Peters, Does the Value of PET-CT Extend Beyond Pretreatment Staging? An Analysis of Survival in Surgical Patients with Esophageal Cancer, *Journal of Gastrointestinal Surgery*, 13:2121–2127, 2009.
12. **Rui Hu**, Xing Qiu, Galina Glazko, Lev Klebanov and Andrei Yakovlev, Detecting Intergene Correlation Changes in Microarray Analysis: A New Approach to Gene Selection, *BMC Bioinformatics*, (1)10:20, 2009.
13. **Rui Hu**,  $L^p$  Norm Estimates of Eigenfunctions Restricted to Submanifold, *Forum Mathematicum*, 21:6, 1021-1052, 2009.
14. **Rui Hu** and Beiye Feng. The Criterion for Determining the Stability of a Homoclinic Cycle for the Second Critical Case and Its Application, *Acta Mathematicae Applicatae Sinica*, Vol. 28, No.1: 28-43, 2005.
15. Beiye Feng and **Rui Hu**. A Survey on Homoclinic and Heteroclinic Orbits. *Applied Mathematics E-Notes*. 3: 16-37, 2003.
16. Beiye Feng and **Rui Hu**. The Quadric Systems Possessing the Critical Heteroclinic Cycle with Two Saddle Points, *Acta Mathematicae Applicatae Sinica*, Vol.24, No.4: 481-486, 2001.
17. **Rui Hu** and Beiye Feng. The Criterion for Determining the Semi-Stability of a Multiple Limit Cycle and the Stability of a Homoclinic Cycle for the Second Critical Case , *Chinese Science Abstracts*, Vol.7, No.9: 1143-1144, 2001.

#### **Published on conference proceedings:**

18. Y. Chen, Y. Tsai, **Rui Hu**, J. Pietrusz, O. Hyrien, K. L. Dawson, C. L. Erickson-Miller, J. Liesveld, C. Jordan, H. Sun, Eltrombopag effect on the engraftment efficiency of human hematopoietic stem cells in a NOD/SCID xenotransplant model, *Journal of Clinical Oncology*, 2010 ASCO Annual Meeting Proceedings, 28(15), 2010: 6603.
19. S Puri, **Rui Hu**, S L Voci, R Block, P Veazie, R R Quazi, Is there an association between Physicians' awareness of radiation induced cancer risk from commonly performed CT scans and their ordering behavior?, accepted, RSNA 2011 Meeting.
20. S Puri, **Rui Hu**, S L Voci, R Block, P Veazie, R R Quazi, Why ED providers elect to use CT and not V/Q scan in low clinical probability of pulmonary embolism (PE), accepted, *Journal of Nuclear Medicine meeting abstracts*, 52: 1405, 2011.

#### **Submitted and Under Review:**

21. Savita Puri, Robin R. Quazi, Meena Moorthy, Susan Voci, **Rui Hu**, Robert Block and Peter Veazie, Physician Awareness of Lifetime Radiation Attributable Cancer Risk, *Academic Radiology*, submitted.

22. **Rui Hu** and Xing Qiu, The costs and benefits of post-summarizing normalization procedures in microarray analysis: A comparative study, *Statistical Applications in Genetics and Molecular Biology*, submitted.
23. Xiang Liu, Wei Tian, Balasubramanya Kolar, Gabrielle A. Yeane, **Rui Hu**, Mahlon D. Johnson and Sven Ekholm, Grading non-enhancing cerebral gliomas and neuronal- glial tumors by diffusion parameters derived from diffusion tensor imaging, *American Journal of Neuroradiology*, submitted.