

Jiankui He

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Education

Stanford University, Stanford, CA, Jan. 2011-Dec.2011
Postdoctoral Research Fellow, Stephen Quake lab

Rice University, Houston, TX, Aug. 2007 – Dec.2010
Ph.D. in Physics, Dec. 2010
Advisor: Prof. Michael W. Deem, Bioengineering/Physics Department

University of Science & Technology of China, Hefei, China. Sep. 2002 – Jul.2006
B.S. in Physics, July 2006

Research Interest

- Profiling human immune T cell and B cell receptor repertoire by high throughput sequencing
- Family-based whole genome sequencing for genetic disease gene detection
- Bioinformatics on human genome, variants and diseases.
- Tumor immunology

Rewords and honors

Chinese Government Award for Outstanding Self-financed Students Abroad
China Scholar Council, April 2011

Outstanding Student Paper Presentation
American Association for the Advancement of Science (AAAS) SWARM 85th
Annual meeting, Houston, TX, April 2010

First Place of Poster Competition
Theoretical and Computational Biology Symposia, Houston, TX, Dec. 2009

Rice Graduate Fellowship
Rice University, Houston, TX, 2007-2011

National Scholarship of China for Undergraduates
Ministry of Education, China, 2002-2006

Professional society memberships

American Physical Society (APS)
American Institute of Chemical Engineers (AIChE)
American Association for the Advancement of Science (AAAS)
Biomedical Engineering Society (BMES)

Professional services

Associate Editor, *Adv. Mater. Phys. Chem.* 2011

Guest reviewer for journals: Physics A, Physics D, Communications in Theoretical Physics, Complexity, etc.

Program committee member, International Conference on Bioinformatics Models, Methods and Algorithms, Algarve, Portugal, 2012

President, Rice Chinese Student & Scholars Association, 2010-2011

Vice President, Association of Chinese Life-science Postdocs and Students at Stanford, 2011-2012

Contributed conference presentations

1. “Immune Repertoire Profiling by High-Throughput Sequencing” Bioengineering Department of Stanford University Retreat, Santa Cruz, October 2011.
2. “Immune Repertoire Profiling by High-Throughput Sequencing” IBC’s Next-Generation Sequencing & Genomic Medicine conference, San Francisco, CA, USA. August 2011
3. “Modularity: The design principle in complex systems.” Synthetic Biology SLAM, the Fifth International Meeting on Synthetic Biology. Stanford, CA, USA June 2011
4. “How bacteria acquire immunity” Physics of Evolution, University of California at San Diego, August 2010.
5. “Low-dimensional clustering detects incipient influenza cluster.” q-bio conference, Santa Fe, NM, USA August 2010.
6. “Evolution of modularity in biological networks.” American Association for the Advancement of Science SWARM 85th Annual meeting, Houston, TX, USA April 2010. **Best Student Presentation Reward.**
7. “Low-dimensional clustering reveals new influenza strains before they become dominant.” TX-UK: Controlling Emerging Infectious Diseases in the 21st Century. Galveston, TX, USA February 2010.
8. “Detecting new influenza strains before they become dominant.” American Physical Society Annual meeting, Portland, USA March 2010
9. “Low-dimensional clustering reveals new influenza strains before they become dominant.” International workshop on Evolution, Hong Kong, China December 2009
10. “Low-dimensional clustering reveals new influenza strains before they become dominant.” Theoretical and Computational Biology Symposia, Houston, TX, USA December 2009. **First Place Reward of Poster Competition.**
11. “Structure in the world trade network increases after global recessions.” RQI annual meeting, Rice University, December 2009.
12. “Prevalence of and Epidemic Spreading on Hierarchical Networks.” American Physical Society Annual meeting, Pittsburgh, USA March 2009
13. “Spontaneous emergence of modularity in a model of evolving individuals and in real networks.” American Physical Society Annual meeting, New Orleans, USA March 2008

14. “Spontaneous emergence of modularity in a model of evolving individuals and in real networks.” Theoretical and Computational Biology Symposia, Houston, USA December 2007

Invited seminar talks

1. “Profiling human immune repertoire by high throughput sequencing”, 5th Bay Area Population Genomics Conference, Stanford, CA, December 2011.
2. “Profiling human immune repertoire by high throughput sequencing”, Bio-Rad(Quantalife) Pleasanton, CA, December, 2011
3. “Profiling human immune repertoire by high throughput sequencing”, 5th qPCR symposium, Santa Clara, CA, November 2011
4. “Immunological sequences analysis,” MathGen seminar, Stanford University. July, 2011
5. “Globalized economy more sensitive to recessions,” Biophysics seminar, Rice University, November 2010
6. “How bacteria acquire immunity?” Stanford University, October 2010.
7. “Heterogeneous diversity of spacers within CRISPR,” Center for Biomolecular Structure and Function, UT M. D. Anderson Cancer Center, October 2010.
8. “Heterogeneous diversity of spacers within CRISPR,” Biophysics seminar, Rice University, September 2010
9. “Detecting new influenza strains before they become dominant,” Biophysics seminar, Rice University, July 2009

Publications in refereed journals

1. Ning Jiang, **Jiankui He** (co-first author), Joshua A. Weinstein, Lolita Penland, Sanae Sasaki, Xiao-Song He, Cornelia L. Dekker, Patrick C. Wilson, Harry B. Greenberg, Mark M. Davis, Daniel S. Fisher and Stephen R. Quake (2011), High Throughput Sequencing of the Human Immune Repertoire in Response to Influenza Vaccination. (in preparation).
2. **J. He** and M. Deem (2010), “Heterogeneous Diversity of Spacers within CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)” *Phys. Rev. Lett.* 105:128102
3. **J. He** and M. Deem (2010) “Structure and response in the world trade network.” *Phys. Rev. Lett.* 105:198701
4. **J. He** and M. Deem (2010) “Low-dimensional clustering detects incipient dominant influenza strain clusters.” *Protein Engineering Design and Selection* 23:935–946
5. **J. He** and M. Deem (2010) “Hierarchical evolution of animal body plans.” *Developmental Biology*, 337:157
6. **J. He**, J. Sun and M. Deem (2009) “Spontaneous emergence of modularity in a model of evolving individuals and in real networks.” *Phys. Rev. E.* 79: 031907. Also in Virtual Journal of Biological Physics Research
7. **J. He**, Q. Chen, L. Ding and S. Wan (2008) “Conclusive and perfect quantum state transfer with a single spin chain.” *Phys. Lett. A* 372:185-190

Book

1. Jiankui He (2011) “Modularity: The principle of evolution in complex systems”
Lambert Academic Publishing, Koln, Germany. 2011