

## **Biographical Sketch for Qing (Gary) Liu**

**Oak Ridge National Laboratory**  
**Oak Ridge, TN**  
**E-mail: [liuq@ornl.gov](mailto:liuq@ornl.gov)**

**Phone: (865)-576-9878**  
**Fax: (865) 241-4811**

### **Education**

Doctor of Philosophy, Computer Engineering, University of New Mexico, 2008  
Master, Computer Science, Nanjing University of Posts & Telecom, China, 2004

### **Selected Professional Experience**

2012 – present, Research Scientist, Oak Ridge National Laboratory, Oak Ridge, TN  
2014 – present, Adjunct Faculty, University of Central Florida, Orlando, FL  
2010 – 2012, Computational Scientist, National Institute for Computational Sciences, Oak Ridge, TN  
2009 – 2010, Postdoc Research Associate, Oak Ridge National Laboratory, Oak Ridge, TN

### **Recent Ten Publications**

1. Ye Jin, Xiaosong Ma, Qing Liu, Mingliang Liu, Jeremy Logan, Norbert Podhorszki, Jong Youl Choi, and Scott Klasky, “Combining Phase Identification and Statistical Modeling for Automated Parallel Benchmark Generation”, ACM SIGMETRICS, Jun 2015.
2. D. Boyuka, S. Lakshminarasimhan, X. Zou, Z. Gong, J. Jenkins, E. Schendel, N. Podhorszki, Q. Liu, S. Klasky, N. Samatova, “Toward Transparent In Situ Data Transformations in ADIOS”, CCGrid, 2014
3. Q. Liu, J. Logan, Y. Tian, H. Abbasi, N. Podhorszki, J-Y. Choi, S. Klasky, R. Tchoua, J. Lofstead, R. Oldfield, M. Parashar, N. Samatova, K. Schwan, A. Shoshani, M. Wolf, K. Wu, W. Yu, “Hello ADIOS: the challenges and lessons of developing leadership class I/frameworks”, Concurrency and Computation: Practice and Experience, 2013. doi: 10.1002/cpe.3125.
4. Q. Liu, N. Podhorszki, J. Logan, S. Klasky. “Runtime I/O Re-Routing + Throttling on HPC Storage,” In USENIX HotStorage, 2013
5. Zhenhuan Gong, David A. Boyuka II, Xiaocheng Zou, Qing Liu, Norbert Podhorszki, Scott Klasky, Nagiza F. Samatova, “PARLO: PARallel Run-time Layout Optimization for Scientific Data Explorations with Heterogeneous Access Patterns”, CCGrid, 2013.
6. E. Schendel, S. Pendse, J. Jenkins, D. Boyuka, Z. Gong, S. Lakshminarasimhan, Q. Liu S. Klasky, R. Ross, N. Samatova, “ISOBAR Hybrid Compression-I/O Interleaving for Large-scale Parallel I/O Optimizations, HPDC 2012.
7. J. Lofstead, M. Polte, G. Gibson, S. Klasky, K. Schwan, R. Oldfield, M. Wolf, Q. Liu, “Six Degrees of Scientific Data: Reading Patterns for extreme scale science IO”, HPDC 2011.
8. Jay Lofstead, Fang Zheng, Qing Liu, Scott Klasky, Ron Oldfield, Todd Kordenbrock, Karsten Schwan, Matthew Wolf. “Managing Variability in the IO Performance of Petascale Storage Systems”. In Proceedings of SC 10. New Orleans, LA. November 2010.
9. F. Zheng, H. Abbasi, C. Docan, J. Lofstead, Q. Liu, S. Klasky, M. Parashar, N. Podhorszki, K. Schwan, M. Wolf, “PreData - Preparatory Data Analytics on Peta-Scale Machines”, IPDPS 2010, IEEE Computer Society Press 2010.
10. M. Polte, J. Lofstead, J. Bent, G. Gibson, Scott A Klasky, Q. Liu, M. Parashar, K. Schwan, M. Wolf, , “...And eat it too: High read performance in write-optimized HPC I/O middleware

file formats”, 4th Petascale Data Storage Workshop (PDSW 09), SuperComputing, Portland, OR, November 16, 2009

### **Select Synergistic Activities**

**General:** Extensive experience in parallel I/O, scientific data management, high-speed networking and workflow systems. **OLCF:** My responsibility in the Oak Ridge Leadership Facility is to develop new data management capabilities that help applications utilize computing resources efficiently. **DOE ASCR SciDAC Scalable Data Analysis and Visualization:** My role is to develop next generation I/O frameworks for exascale systems. **DOE SciDAC Scientific Data Management Center:** Worked on data management solutions for DOE applications (e.g., fusion, combustion, etc). I was also involved in NSF RDAV center to provide scalable I/O support for remote visualization. Recently I have been invited to major conference program committees, such as HPDC’15, SC’15, 14, IEEE Cluster’15, 14, IPDPS’15, ISC’15.

### **Recent Collaborators & Co-editors (outside Oak Ridge National laboratory)**

S. Ahern (UTK), D. Boyuka (NCSU), H. Bui (Rutgers), S. Ethier (PPPL), X. He (VCU), Y. Jin (NCSU), T. Kurc (Stony Brook), J. Logan (UTK), X. Ma (NCSU), M. Parashar (Rutgers), R. Ross (ANL), N. Samatova (NCSU), K. Schwan (Georgia Tech), A. Shoshani (LBNL), M. Soe (RSU), N. Schunk (LLNL), J. Tong (Rutgers), J. Wang (UCF), M. Wolf (Georgia Tech), J. Wu (LBNL), Y. Zhang (Georgia Tech), F. Zhang (Rutgers), F. Zheng (IBM)

### **Graduate and Postdoctoral Advisors & Advisees**

Nasir Ghani (UNM, now at USF)  
Scott Klasky (ORNL)