

## Michael E. Papka

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## Professional Appointments

### Argonne National Laboratory

- **Director**, Argonne Leadership Computing Facility, 2010–Present
- **Deputy Associate Laboratory Director**, Computing, Environment and Life Sciences Directorate, 2006–Present
- **Senior Fellow**, University of Chicago/Argonne National Laboratory Computation Institute, 1999–Present
- **Senior Research Scientist**, 1992–Present

### Northern Illinois University

- **Professor**, Department of Computer Science, 2012–Present

## Education

- **Ph.D. in Computer Science** (2009)  
The University of Chicago, Chicago, IL
- **M.S. in Computer Science** (2002)  
The University of Chicago, Chicago, IL
- **M.S. in Electrical Engineering and Computer Science** (1994)  
University of Illinois at Chicago, Chicago, IL
- **B.S. in Physics** (1990)  
Northern Illinois University, DeKalb, IL

## **Awards and Honors (selected)**

- James M. Lufkin Best Paper Award - *Improving models of document cycling: Accounting for the less visible writing activities of an annual reporting process at a supercomputing facility* at the 2016 IEEE International Professional Communication Conference (IPCC)
- Honorable Mention - *Parallel Distributed, GPU-Accelerated, Advanced Lighting Calculations for Large-Scale Volume Visualization* at the 6th IEEE Symposium on Large-Scale Data Analysis and Visualization (LDAV 2016)
- Excellence in Teaching Award - NIU Department of Computer Science (2015–2016)
- Best Poster Award - *Streaming Ultra High Resolution Images to Large Tiled Display at Nearly Interactive Frame Rates with v13* at the 5th IEEE Symposium on Large-Scale Data Analysis and Visualization (LDAV '15)
- Best Paper Award - *Exploring Void Search for Fault Detection on Extreme Scale Systems* at IEEE Cluster 2014

## Recent Publications (selected from more than 150 peer-reviewed publications)

1. Kostuk, M. et al. *Automatic between-pulse analysis of DIII-D experimental data performed remotely on a supercomputer at Argonne Leadership Computing Facility*, **Fusion Science and Technology** (2017).
2. Wallace, S. et al, *Application power profiling on IBM Blue Gene/Q*, **Parallel Computing** 57, pp. 73-86 (2016).
3. Childers, J. T. et al. *An Edge Service for Managing HPC Workflows*, **Proceedings of the Fourth International Workshop on HPC User Support Tools (HUST'17)**, Article No. 1, Denver, CO (2017).
4. Fujiwara, T. et al. *A Visual Analytics System for Optimizing Communications in Massively Parallel Applications*, **2017 IEEE Conference on Visual Analytics Science and Technology (VAST)**, Phoenix, AZ (2017)
5. Y. Fan, et al. *Trade-Off Between Prediction Accuracy and Underestimation Rate in Job Runtime Estimates*, **2017 IEEE International Conference on Cluster Computing (CLUSTER)**, pp. 530-540, Honolulu, HI (2017).
6. Read, S. and Papka, M. E. *Operational metrics reporting processes at scientific user facilities: Comparing a high-energy x-ray synchrotron facility to a supercomputing facility*, **2017 IEEE International Professional Communication Conference (ProComm)**, pp. 1-6, Madison, WI (2017).
7. Marrinan, T. et al. *Automated Dynamic Data Redistribution*, **2017 IEEE Parallel and Distributed Processing Symposium Workshops (IPDPSW)**, pp. 1208-1215, May 29, 2017.
8. Childers, J. T. et al. *Adapting the serial Alpgen parton-interaction generator to simulate LHC collisions on millions of parallel threads*, **Computer Physics Communications** 210, pp. 54-59 (2016).
9. Reda, K. et al. *Modeling and Evaluating User Behavior in Exploratory Visual Analysis*, **Information Visualization** 15(4), pp. 325-339 (2016).
10. Usher, W. et al. *In Situ Exploration of Particle Simulations with CPU Ray Tracing*, **Supercomputing Frontiers and Innovations** 3(4), pp. 4-18 (2016).
11. Perdikaris, P. et al. *Visualizing Multiphysics, Fluid-Structure Interaction Phenomena in Intracranial Aneurysms*, **Parallel Computing** 55, pp. 9-16 (2016).
12. Gyulassy, A. et al. *Interstitial and Interlayer Ion Diffusion Geometry Extraction in Graphitic Nanosphere Battery Materials*, **IEEE Transactions on Visualization and Computer Graphics**, 22(1):916-925, January 2016.
13. Bui, H. et al. *Improving Sparse Data Movement Performance using Multiple Paths on the Blue Gene/Q Supercomputer*, **Parallel Computing** 51, pp. 3-16 (2016).
14. Malakar, P. et al. *Optimal Execution of Co-analysis for Large-scale Molecular Dynamics Simulations*, **Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis**, Article No. 60, Salt Lake City, UT (2016).

## Synergistic Activities - Last 5 Years (selected)

**Senior Member:** ACM, **IEEE Member:** AAAS **Reviewer:** International Symposium on Visual Computing, IEEE Visualization Conference, IEEE Information Visualization Conference, IEEE Visualization and Analysis Conference, NSF Major Research Instrumentation and Strategic Technologies for Cyberinfrastructure Programs **Steering Committee:** Large Data Analysis and Visualization Symposium **General Chair:** IEEE Visualization 2015 **Advisory Board Member:** Harvard University Computational Science and Engineering Advisory Board (2012–Present), Loyola University Chicago Computer Science Advisory Committee (2015–Present), Advisory Board for the NSF Funded Precipitating Change: Integrating Meteorology, Mathematics, and Computational Thinking (2016–Present), Steering Committee for the Chicago Quantum Exchange (2017–Present) **Editorial Board Member:** IEEE Computing in Science and Engineering (CiSE) (Department Editor for Leadership Computing) (2015–Present)