Matthew D. Jones

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A. Professional Preparation

Cornell University	Physics and Mathematics	A.B.	1991
University of Illinois at Urbana-Champaign	Physics	M.S.	1992
University of Illinois at Urbana-Champaign	Physics	Ph.D.	1996
Los Alamos National Laboratory	Theoretical Division	PRA	1996-1999

B. Appointments

2009-present Associate Director, Lead Computational Scientist, Center for Computational Research, State University of New York at Buffalo.

2000-present Research Assistant Professor, Department of Physics, State University of New York at Buffalo.

1999-present Computational Scientist, Center for Computational Research, State University of New York at Buffalo.

1996-1999 Postdoctoral Research Associate, Theoretical Division, Los Alamos National Laboratory.

C. Publications

(i) Five Most Closely Related Publications

1. M. Bursik, M. Jones, S. Carn, K. Dean, A. Patra, M. Pavolonis, E. Pitman, T. Singh, P. Singla, P. Webley, et al., *Estimation and propagation of volcanic source parameter uncertainty in an ash transport and dispersal model: application to the eyjafjallajokull plume of 14–16 april 2010*, Bulletin of Volcanology, 74 (2012), pp. 2321–2338.
2. T. Furlani, M. Jones, S. Gallo, A. Bruno, C. Lu, A. Ghadersohi, R. Gentner, A. Patra, R. DeLeon, G. Laszewski, et al., *Performance metrics and auditing framework using application kernels for high-performance computer systems*, Concurrency and Computation: Practice and Experience, (2012).
3. E. Stefanescu, M. Bursik, G. Cordoba, K. Dalbey, M. Jones, A. Patra, D. Pieri, E. Pitman, M. Sheridan, E. Stefanescu, et al., *Digital elevation model uncertainty and hazard analysis using a geophysical flow model*, Proceedings of the Royal Society A: Mathematical, Physical and Engineering Science, 468 (2012), pp. 1543–1563.
4. M. Jones and R. Albers, *Spin-orbit coupling in an f-electron tight-binding model: Electronic properties of Th, U, and Pu*, Physical Review B, 79 (2009), p. 045107.
5. D. Nazareth, S. Brunner, M. Jones, H. Malhotra, and M. Bakhtiari, *Optimization of beam angles for intensity modulated radiation therapy treatment planning using genetic algorithm on a distributed computing platform*, Journal of Medical Physics, 34 (2009), p. 129.

(ii) Five Other Significant Publications

1. J. Delmerico, N. Byrnes, A. Bruno, M. Jones, S. Gallo, and V. Chaudhary, *Comparing the performance of clusters, Hadoop, and Active Disks on microarray correlation computations*, in High Performance Computing (HiPC), 2009 International Conference on, IEEE, 2009, pp. 378–387.

2. A. Chantis, R. Albers, M. Jones, M. Van Schilfgaarde, and T. Kotani, *Many-body electronic structure of metallic α-uranium*, Physical Review B, 78 (2008), p. 081101.
3. J. Zhu, A. McMahan, M. Jones, T. Durakiewicz, J. Joyce, J. Wills, and R. Albers, *Spectral properties of δ-plutonium: Sensitivity to 5f occupancy*, Physical Review B, 76 (2007), p. 245118.
4. M. Jones, R. Yao, and C. Bhole, *Hybrid MPI-OpenMP programming for parallel OSEM PET reconstruction*, IEEE Transactions on Nuclear Science, 53 (2006), pp. 2752–2758.
5. D. Trinkle, M. Jones, R. Hennig, S. Rudin, R. Albers, and J. Wilkins, *Empirical tight-binding model for titanium phase transformations*, Physical Review B, 73 (2006), p. 094123.

D. Synergistic Activities

1. *Teaching.* Instructor for graduate and undergraduate Physics courses, including a dedicated course in High Performance Computing (cross-listed in Physics, Mathematics, Mechanical and Aerospace Engineering, Chemical and Biological Engineering, and Computer Science departments), State University of New York at Buffalo.

2. *Outreach.* Frequently host tours of the Center for Computational Research (local HPC facility) for visiting students (pre-college as well as undergraduate and graduate), faculty, and scholars. Frequently aid researchers in porting applications to better utilize HPC resources.

3. *Training.* Preparation and administration of high-performance computing training materials (parallel, scientic, and numerical programming), Center for Computational Research, State University of New York at Buffalo.

E. Collaborators & Other Affiliations

(i) Collaborators: *(past four years)* R. C. Albers (Los Alamos National Laboratory), A. E. Bruno (State University of New York at Buffalo), M. Bursik (State University of New York at Buffalo), V. Chaudhary (State University of New York at Buffalo), K. Dean (University of Alaska, Fairbanks), R. L. DeLeon (State University of New York at Buffalo), J. A. Delmerico (State University of New York at Buffalo), S. M. Gallo (State University of New York at Buffalo), R. J. Gentner (State University of New York at Buffalo), A. Ghadersohi (State University of New York at Buffalo), R. G. Hennig (Cornell University), C.-D. Lu (State University of New York at Buffalo), A. K. Patra (State University of New York at Buffalo), M. Pavolonis (University of Wisconsin, Madison), E. B. Pitman (State University of New York at Buffalo), M. F. Sheridan (State University of New York at Buffalo), T. Singh (State University of New York at Buffalo), P. Singla (State University of New York at Buffalo), E. R. Stefanescu (State University of New York at Buffalo), G. von Laszewski (Indiana University), F. Wang (Indiana University), L. Wang (Indiana University), P. Webley (University of Alaska, Fairbanks), J. X. Zhu (Los Alamos National Laboratory), A. Zimmerman (University of Michigan, Ann Arbor).

(ii) Graduate and Postdoctoral Advisors : David M. Ceperley (graduate advisor, University of Illinois at Urbana-Champaign), Robert C. Albers (postdoctoral advisor, Los Alamos National Laboratory).

(iii) Thesis Advisor and Postgraduate-Scholar Sponsorship: Graduate students advised: 0; postgraduate-scholar sponsorships: 0.