

Harvey J. Wasserman

Experience

1984 – present Scientific Computing Group, Los Alamos
Technical Staff Member

- Performance evaluation and modeling of advanced-architecture computing systems, including hands-on studies of nearly every important supercomputer since 1984.
- Extensive knowledge of high-performance computer architecture and performance, especially POWER-1, POWER-2, and competitor microprocessor CPU and memory structures, RS/6000-SP system, MPI communications, and shared-memory parallel programming.
- Extensive understanding of numerically intensive computer programs and scientific computing environments.
- Lead role defining and developing scientific computer programs to be used as performance metrics for LANL ASCI program.
- Detailed evaluation of supercomputing usage trends worldwide.
- Extensive experience using hardware counters and other tools to analyze application performance.
- Highly successful tutorial instructor on supercomputer performance.

Fall, 1991 Institute for Supercomputing Research (Tokyo)
Visiting Researcher

- Performance studies of Japanese supercomputers.

1982–1984 Los Alamos National Laboratory (Chemistry)
Postdoctoral Research Fellow

- X-ray and neutron crystallographic research.

Education

1978 - 1982 State University of New York at Buffalo

- Ph.D. Chemistry

1974 - 1978 State University of New York College at Geneseo

- B.S. Chemistry

RECENT PRESENTATIONS AND PUBLICATIONS OF HARVEY J. WASSERMAN

77. D.J. Kerbyson, H. J. Alme, A. Hoisie, F. Petrini, H. J. Wasserman, and M. Gittings, "Predictive Performance and Scalability of a Large-Scale Applications," Proceedings of SC2001, November, 2001.
76. A. Hoisie, O. Lubeck, and H. Wasserman, "Performance and Scalability Analysis of TeraFlop-Scale Parallel Architectures Using Multi-Dimensional Wavefront Algorithms," Intl J. Supercomputer Applications, to appear.
75. A. Hoisie, O. L. Lubeck, and H. J. Wasserman, "Performance and Scalability of Multi-Dimensional Wavefront Algorithms With Application to Particle Transport," Accepted for Publication, *Proceedings of Frontiers in Massively Parallel Computing*, IEEE Computer Society, February, 1999.
74. H. J. Wasserman, "ASCI Applications and Requirements," Invited Presentation, *IEEE 1998 International Workshop on Innovative Architecture*, October, 1998.
73. A. Hoisie and H. J. Wasserman, "Performance Analysis and Prediction of Large-Scale Scientific Applications," Contributed Tutorial, SC'98, IEEE Computer Society, November, 1998,1999, and 2000.
72. H. J. Wasserman, "Performance Analysis and Benchmarking," Invited Tutorial, *National Partnership for Advanced Computational Infrastructure, Parallel Computing Institute*, San Diego Supercomputer Center, August, 1998.
71. O. M. Lubeck, Y. Luo, H. J. Wasserman, and F. Bassetti, "Development and Validation of a Hierarchical Memory Model Incorporating CPU- and Memory-Operation Overlap," *Contributed presentation and Proc. of PDPTA*, July, 1998.
70. H. J. Wasserman, O. M. Lubeck, Y. Luo and F. Bassetti, "Performance Evaluation of the SGI Origin2000: A Memory-Centric Characterization of LANL ASCI Applications," *Contributed Presentation and Proc. of SC97*, IEEE Computer Society, 1997.
69. H. J. Wasserman, "Supercomputing in Japan: 1997 Update," *Los Alamos National Laboratory Unclassified Report NIS-8(U)-97-149*, 1997.
68. H. J. Wasserman, "Benchmark Tests on the New DEC ALPHA Microprocessor and a Comparison of Optimized Vector and Superscalar Processing," *Contributed Presentation and Proc. 1996 Intl. Conf. Supercomputing*, Assoc. Comp. Mach., pp 333-340.
67. H. J. Wasserman, "Benchmark Tests on the New IBM RISC System/6000 590 Workstation," *Scientific Programming*, Vol. 4, No. 1, pp23-34, Spring, 1995.
66. H. J. Wasserman, "Benchmark Tests on the Cray Research CRAY J90," *Los Alamos National Laboratory Unclassified Report LA-UR-95-4111*, 1995.
65. H. J. Wasserman, "Benchmark Tests on a Silicon Graphics R8000-Based Workstation," *Los Alamos National Laboratory Unclassified Report LA-UR-95-4348*, 1995.
64. H. J. Wasserman, M. L. Simmons, and A. H. Hayes, "Supercomputer Usage Worldwide," *Los Alamos National Laboratory Unclassified Report LA-UR-95-375*, 1995.
63. H. J. Wasserman, M. L. Simmons, I. Y. Bucher, and R. E. Hiromoto, "An Assessment of High-Performance Computer Technology in Japan and Europe," *Los Alamos National Laboratory Unclassified Report 93-3604*, October, 1993.
62. H. J. Wasserman, "GigaTera-FLOPS and Other Politically-Correct Performance Hype," Tutorial Notes for Summer 1993 and 1994 Computational Science Workshop, University of New Mexico.
61. O. M. Lubeck, J. W. Moore, M. L. Simmons, and H. J. Wasserman, "Benchmarking Massively Parallel Architectures," *Proc. Workshop on Benchmarking and Performance Evaluation of High Performance Computers*, Tokyo, July, 1993.
60. O. M. Lubeck, M. L. Simmons, and H. J. Wasserman, "The Performance Realities of Massively Parallel Processors: A Case Study," *Contributed Presentation and Proc. Supercomputing '92*, IEEE Computer Society, pp. 403-413.
59. M. L. Simmons and H. J. Wasserman, "A Preliminary Look at a New Cray Supercomputer: Performance Evaluation of the C90," *ISR Vector Register*, Vol 4, No 3, Fall 1991.

58. Harvey J. Wasserman, "Application Code Performance of the Stardent VISTRA-800 and CDC 4680 Scientific Workstations, Including an Evaluation of Fortran Performance of the i860 Chip," *Los Alamos National Laboratory Unclassified Report* 91-2824, August, 1991.
57. Margaret L. Simmons, Harvey J. Wasserman, Olaf M. Lubeck, Christopher Eoyang , Raul Mendez, Hiroo Harada and Misako Ishiguro, "Performance Comparison of Three Supercomputers: NEC SX-3, Fujitsu VP2600, and CRAY Y-MP," *Communications of the ACM*, Vol 35, No 8, August, 1992, pp116-124.
56. M. L. Simmons and H. J. Wasserman, "Performance Evaluation of the IBM RISC System/6000: Comparison of an Optimized Scalar Processor with a Vector Processor Having the Same CPU Clock Cycle", in *Proc. Supercomputing '90*, IEEE Computer Society, pp. 213-223.
55. M. L. Simmons and H. J. Wasserman, "Los Alamos Experiences with the IBM RISC System/6000 Workstations," *Los Alamos National Laboratory report LA-11831-MS* (March, 1990).
54. R. J. Koskela, M. L. Simmons, and H. J. Wasserman, "Performance Characterization of the Convex C-240 Computer System," *Los Alamos National Laboratory report LA-11769-MS* (February, 1990).
53. P. T. Burns, M. Christon, R. Schweitzer, O. M. Lubeck, H. J. Wasserman, M. L. Simmons, and D. V. Prior, "Vectorization of Monte Carlo Particle Transport: An Architectural Study Using the LANL Benchmark 'GAMTEB'," in *Proc. Supercomputing '89*, IEEE Computer Society, 1989, pp. 10-20.
52. H. J. Wasserman and R. G. Brickner, "Monte Carlo Photon Transport with the 'GAMTEB' Benchmark on the Thinking Machines Corp. CM-2," poster presentation at *Supercomputing '89*, IEEE Computer Society , 1989.
51. R. J. Koskela, M. L. Simmons, and H. J. Wasserman, "Measurement of Inter-CPU Memory Contention Effects on the CRAY X-MP/416 and CRAY Y-MP/832," poster presentation at *Supercomputing '88*, IEEE Computer Society , 1988.
50. J. H. Griffin, H. J. Wasserman, and L. P. McGavran, " A Debugger for Parallel Processes, " *Software - Practice and Experience* **18**(12), 1179-1190 (1988).
49. H. J. Wasserman, M. L. Simmons, and O. M. Lubeck, " The Performance of Minisupercomputers: Alliant FX/8, Convex C-1, and SCS-40," *Parallel Computing* **8**, 285-294 (1988).
48. H. J. Wasserman, "Los Alamos National Laboratory Computer Benchmarking 1988," *Los Alamos National Laboratory Report LA-11465-MS* (December 1988).
47. M. L. Simmons and H. J. Wasserman, "Los Alamos National Laboratory Computer Benchmarking 1986," *Los Alamos National Laboratory Report LA-10898-MS*, December, 1987.
46. H. J. Wasserman, A. J. Zozulin, D. C. Moody, R. R. Ryan, and K. V. Salazar, "Crystal and Molecular Structure of Triscyclopentadienyltetrahydrofuranuranium(III), (h⁵-C₅H₅)₃U•OC₄H₈," *J. Organomet. Chem.*, **254**, 305(1984).
45. H. J. Wasserman, G. J. Kubas, and R. R. Ryan, "Molecular Hydrogen Complexes of the Transition Metals. 3. Preparation, Structure, and Reactivity of W(CO)₃(PCy₃)₂ and W(CO)₃(P-iPr₃)₂, H₂ Complex Precursors Exhibiting M...H-C Interactions," *J. Am.Chem.Soc.*, **108**, 2294 (1986).