David Bryan Carpenter

Northeast Parallel Architectures Center	Phone: 315 443 5068
Syracuse University	Fax: 315 443 1973
111 College Place	E-mail: dbc@npac.syr.edu
Syracuse, NY 13244-4100	URL: http://www.npac.syr.edu/users/dbc

Education

Ph D. in Physics, University of London (1979-1983).
B.S. in Physics, University of London (1976-1979).

Professional Experience

1996– Research Scientist, NPAC, Syracuse University **1994–1995** Programmer, High Performance Computing Centre, Southampton, UK. **1989–93** Research Fellow in Department of Electronics and Computer Science and Department of Physics, Southampton, UK. **1989** Employed at "Transputer Technology Solutions", Southampton, UK. **1985–1988** Research Fellow in Department of Physics, Southampton, UK. **1985** Royal Society Overseas Fellowship at DESY, Hamburg. **1983–1984** Research Fellow in Theoretical Physics Department, Edinburgh University.

Selected List of Publications:

[1] Bryan Carpenter, Geoffrey Fox, Donald Leskiw, Xinying Li, Yuhong Wen and Guansong Zhang "Language Bindings for a Data-parallel Runtime", To appear in proceedings Third International Workshop on High-Level Parallel Programming Models and Supportive Environments, 1998.

[2] Bryan Carpenter, Guansong Zhang, Geoffrey Fox, Xinying Li and Yuhong Wen "HPJava: Data Parallel Extensions to Java", 1998 ACM workshop on Java for High-performance Network Computing, To appear in Concurrency: Practice and Experience.

[3] Bryan Carpenter, Guansong Zhang and Yuhong Wen "NPAC PCRC Runtime Kernel Definition", Center for Research on Parallel Computation, CRPC-TR97726, 1997.

[4] Bryan Carpenter, Yuh-Jye Chang, Geoffrey Fox and Xiaoming Li, "Java as a Language for Scientific Parallel Programming" 10th Int'l Workshop

on Languages and Compilers for Parallel Computing (Aug, 1997). To appear in Lecture Notes in Computer Science.

[5] G. Zhang, B. Carpenter, G. Fox, X. Li, X. Li and Y. Wen "PCRC-based HPF Compilation" 10th Int'l Workshop on Languages and Compilers for Parallel Computing (Aug, 1997). To appear in Lecture Notes in Computer Science.

[6] B. Carpenter, Y.-J. Chang, G. Fox, D. Leskiw and X. Li, "Experiments with 'HP Java' ", Concurrency: Practice and Experience, Vol 9, num 9 (1997), p633.

[7] J. Merlin, B. Carpenter and Tony Hey, "shpf: a Subset High Performance Fortran compilation system," Fortran Journal, (1996), pp 2-6.

[8] D.B. Carpenter, "Adlib: A Distributed Array Library to Support HPF Translation" 5th Workshop on Compilers on Parallel Computer, Malaga (1995).

[9] D.B. Carpenter and H. Glaser, "Some Lattice-Based Scientific Problems, expressed in Haskell" University of Southampton, Department of Electronics and Computer Science, preprint CSTR 93-06 (1993). To appear, Journal of Functional Programming (1996).

[10] As. Abada, C.R. Allton, Ph. Boucard, D.B. Carpenter, M. Crisafulli, S. Güsken, P. Hernadez, V. Lubicz, G. Martinelli, O. Pène, C.T. Sachrajda, K. Schilling, G. Siegert and R. Sommer, "Semi-leptonic Decays of Heavy Flavours on a Fine-grained Lattice" Nucl.Phys. B416 (1994) p675.

Summary of Interests:

Carpenter has worked in parallel computing since 1985, when he was one of the first scientists to exploit the Inmos transputer for simulations of physical systems. Working at the University of Southampton, UK he became involved with design of libraries to support parallel computing. In a fruitful collaboration with John Merlin, then also at Southampton, he was codeveloper of the *shpf* system, an early implementation of subset HPF. This work produced the first implementation of the Adlib runtime library. After moving to Syracuse in 1996, Carpenter worked in the PCRC project. As part of this work the Adlib library was substantially redesigned to meet the requirements of a new HPF compiler, and reimplemented. Eventually it was delivered as the NPAC PCRC runtime kernel. Work on C++ interfaces to Adlib was a formative influence in the current work on HPJava and HPspmd.

Ph.D. Advisor

Elliot Leader