Marlon E. Pierce, Ph. D.
2435 5th Street, WPAFB, OH 45433-7802
Phone: (937) 904-5140; FAX: (937) 255-4585
Email: pierceme@asc.hpc.mil

Education

- Ph.D. in Physics, December 1998, Florida State University, under the direction of Professor E. Manousakis. Thesis titled "Path Integral Monte Carlo Simulation of Helium Adsorbed on Graphite."
- B.S. in Physics, Suma cum laude, May 1990, Louisiana Tech University.

Positions Held

Assistant in Research, School of Computational Science and Information Technology, Florida State University, June 2000-Present; Research Scientist, Northeast Parallel Architectures Center, Syracuse University, June 1999-June 2000

- Information and Communication On-Site Lead at the Aeronautical Systems Center Major Shared Resource Center (ASC MSRC) for Syracuse and Florida State Universities.
- Served as program manager for the Gateway project:
  - Gateway provides secure, browser-based distributed access to high performance computing resources.
  - See www.gatewayportal.org for additional information.
- Responsibilities:
  - Designing, development, and testing Gateway software;
  - Integrating Kerberos security software into Gateway infrastructure;
  - Ensuring compliance with local security policies;
  - Integrating Gateway into the ASC MSRC working environment.
- Additional core support activities at ASC MSRC include technical support for software developed at Syracuse and Florida State Universities, tracking of internet and metacomputing technologies, and providing advice and technical assistance for other computational science areas seeking to exploit internet technologies.

Postdoctoral Researcher, Florida State University, December 1998-June 1999

- Developed workstation cluster of PCs running Linux and DEC Alpha workstations running OSF/1. Using Parallel Virtual Machine (PVM) software, developed parallel implementations of serial Monte Carlo code.

Research Assistant, Florida State University, May 1992-December 1998

- Dissertation research involved the development and application of a sophisticated quantum Monte Carlo code for simulating superfluid helium systems adsorbed on a graphite substrate. Excellent agreement with experiment was obtained for a wide variety of phenomena. Additional program development included codes for finding numerical solutions to partial and ordinary differential equations, and for performing data and error analysis using both linear and nonlinear regression

methods.
- Acted as system manager for the group's computer cluster of two DEC Alpha workstations using OSF/1, three PC's running Linux, and one PC running Microsoft Windows. Responsibilities included purchasing PC's, installing Linux and Windows operating system and software, maintaining system security, and general troubleshooting.

Teaching Assistant, Florida State University, August 1991-May 1992.

- Duties included supervising undergraduates in introductory calculus-based physics labs and grading lab reports.

Areas of Expertise

- Object oriented software design and development.
- Secure distributed computing architecture design and development.
- Languages and technologies employed: Java, JavaServer Pages, Java Servlets, CORBA, XML, HTML.
- Additional languages: JavaScript, Fortran, C/C++.
- Additional areas of experience: developing parallel scientific code on heterogeneous workstation clusters.

Honors and Awards

- Florida State University Graduate Fellow, 1991-1994.
- National Merit Scholar.

Research Interests

- Using commodity technologies (Java, CORBA, XML) to develop software tools for computational scientists.

Publications

- ‘‘Phase Diagram of Second 4He Layer Adsorbed on Graphite," M. Pierce and E. Manousakis, *Phys. Rev. Lett.* **81**, 156 (1998).
- ‘‘Path Integral Monte Carlo Simulation of the Second Layer of 4He Adsorbed on Graphite," M. Pierce and E. Manousakis, *Phys. Rev. B* **59**, 3802 (1999).
- "Monolayer Solid Helium-4 Clusters on Graphite," M. Pierce and E. Manousakis. *Phys. Rev. Lett.* **83**, 5314 (1999).
- "Role of Substrate Corrugations in Helium Monolayer Solidification," M. Pierce and E. Manousakis. *Phys. Rev. B* **62**, 5228 (2000).
- ‘‘Quantum Films Adsorbed on Graphite: Third and Fourth Helium Layers," M. Pierce and E. Manousakis. *Phys. Rev. B* **63**, 144524 (2001).

Conference Proceedings

- "Gateway: Building Secure Web Portals for Scientific Computing," Marlon Pierce, Distributed Object Computing Security Workshop, April 1999, Boston, MA.

- "Solid Structures in Monolayer 4He on Graphite," Marlon Pierce and Efstratios Manousakis, National Meeting of the American Physical Society, March 1999, Atlanta, GA.
- "Monte Carlo Simulation of Multiple Layers of Helium on Graphite," Marlon Pierce and Efstratios Manousakis, National Meeting of the American Physical Society, March 1999, Atlanta, GA.
- "Path Integral Monte Carlo Simulation of Helium Layers on Graphite," Marlon Pierce and Efstratios Manousakis, National Meeting of the American Physical Society, March 1998, Los Angeles, CA.
- "Path Integral Monte Carlo Studies of Helium Films on Solid Surfaces," Marlon Pierce and Efstratios Manousakis, National Meeting of the American Physical Society, March 1996, St. Louis, MO.
- "Application of the Path Integral Monte Carlo Method to Helium Adsorbed on Graphite," Marlon Pierce and Efstratios Manousakis, National Meeting of the American Physical Society, March 1995, San Jose, CA.

Professional Association Memberships

- American Physical Society, March 1995-Present.
- Institute of Electrical and Electronics Engineers Computer Society, June 2000-Present.

References

Available on request.