

CURRICULUM VITAE
AMY W. APON, PH.D.
AUGUST, 2006

BS ED, MATHEMATICS, UNIVERSITY OF MISSOURI-COLUMBIA, 1979 (MAGNA CUM LAUDE)
MA, MATHEMATICS, UNIVERSITY OF MISSOURI-COLUMBIA, 1981
MS, COMPUTER SCIENCE, UNIVERSITY OF MISSOURI-COLUMBIA, 1983
PHD, COMPUTER SCIENCE, VANDERBILT UNIVERSITY, 1994

I. PROFESSIONAL APPOINTMENTS

Associate Professor, Computer Science and Computer Engineering Department, University of Arkansas (2002-present) Note: Fall 2003 was 50% and Spring 2004 was 75% time for family leave.

Assistant Professor, Computer Science and Computer Engineering Department, University of Arkansas (1998-2002)

Assistant Professor, Computer Science Department, Vanderbilt University (1997-1998)

Instructor, Computer Science Department, Vanderbilt University (1996-1997)

Research Instructor, Biomedical Informatics Department, Vanderbilt University (1995-1996)

Assistant Professor, Mathematics and Computer Science, Fisk University (1994-1995)

Ph.D. student, Vanderbilt University, Four-Year Chancellor's Fellowship (1990-1994)

Assistant Professor, Computer Science, East Central University, Ada, OK (1986-December, 1989)

II. TEACHING AND ADVISING

A. Scheduled courses taught (by semester) during last five years

Number	Title	Enrollment	Term	Purdue 200 rating	GPA
CSCE 5313	Advanced Operating Systems	14	S'01	4.9	3.69
CSCE 4413	Operating Systems	27	F'01	4.8	2.74
CSCE590	Concurrent Computing	9	S'02	4.9, DT=98, UT=93	3.67
CSCE4253	Concurrent Computing	12	S'02	4.8, DT=94, UT=84	3.25
CSCE5313	Advanced Operating Systems	11	S'02	4.4, DT=79, DL=67	3.73
CSCE590	Parallel I/O Systems	16	S'02	4.8, DT=91, UT=87	3.68
CSCE590	Concurrent Computing	3	S'03	4.0, DT=60, DL=78	
CSCE4253	Concurrent Computing	20	S'03	4.0, DT=60, DL=78	
CSCE5313	Advanced Operating Systems	11	S'03	4.9, DT=99, DL=99	3.72
CSCE5313	Advanced Operating Systems	14	S'04	4.8, DL=99, UT=85	3.57
CSCE490	Cluster and Grid Computing	2	F'04	5.0, UT=99	3.0
CSCE590	Cluster and Grid Computing	7	F'04	4.7, DT=86, DL=90	3.29
CSCE4253	Concurrent Computing	13	S'05	4.7, DT=82, DL=85	2.15

CSCE590	Concurrent Computing	7	S'05	5.0, UT=99	3.29
CSCE1113	Programming Foundations I	106	F'05	4.0, CL=63, DL=65	2.54
CSCE1113	Programming Foundations I	33	S'06	4.4, UL=63, CL=73	2.53
CSCE4253	Concurrent Computing	13	S'06	4.0, CL=53, DL=78	2.83
CSCE590	Concurrent Computing	4	S'06	5.0, UT=99	4.0

The ratings above for the courses taught at the University of Arkansas come from the Purdue Research Foundation Instructor and Course Appraisal course evaluations. Ratings are available for all courses except the current semester. The value shown is Purdue Item 200, which states, "Overall, this instructor is among the best teachers I have known." The students respond to this with a value of '1' to '5', with '5' indicating "strongly agree". The Purdue 200 rating is shown along with the percentile ranking for the response. "D" indicates the percentile is based on departmental scores. "U" indicates the percentile is based on total University scores. "L" indicates the percentile is based on all courses taught at this level, and "T" indicates that the percentile is based on all applicable courses. For example, for the CSCE 4253 course taught during spring semester, 2002, the Purdue Item 200 score is 4.8, which was better than 94 percent of all other courses taught in the Computer Science department, and was better than 84 percent of all courses taught at the University during that semester.

All course materials are maintained on-line and are accessible via Dr. Apon's home web page at <http://csce.uark.edu/~aapon>

B. Honor's or Master's Thesis or Doctoral Dissertations Directed (serving as major or co-advisor)

Doctoral Degrees Completed

Degree	Year	Student and Title of Thesis or Dissertation
Ph.D.	May, 2005	Pawel Wolinski, "Using Distributed Shared Memory to Store Metadata in a Parallel File System," Ph.D. Thesis, Computer Science, University of Arkansas
Ph.D.	Dec., 2005	Yueyue Zhang, "Array Files for Out-of-Core Computation," Ph.D. Thesis, Computer Science, University of Arkansas.

Master's Degrees Completed

Degree	Year	Student and Title of Thesis or Dissertation
M.S.	Aug., 1998	Parvathi Rajagopal, "Study of Network Cache as a Platform for Parallel Computing," M.S. Thesis, Computer Science, Vanderbilt University
M.S.	Aug., 2000	Ann Chen, "On the Optimization of MPI," M.S. Thesis, Computer Science, University of Arkansas
M.S. CSE	May, 2001	Baochaun Lu, "The Design of a 3GPP Base Station'," M.S. Project, Computer Systems Engineering, University of Arkansas
M.S. CSCE	May, 2001	Chin (David) Chia, "A Smart Web Tool," M.S. Project, CSCE, University of Arkansas

M.S. CSCE	Dec., 2001	Prathima Gorjala, "Evaluation of a Parallel File System for Clusters," M.S. Project, CSCE
M.S. CSCE	May, 2002	William Arensman, "A Study of Cluster and Cluster File Systems as Applied to Digital Map Data Delivery System," M.S. Project, CSCE
M.S. CSCE	May, 2002	Anila Pillai, "Cluster Computing with LINUX and comparison of NFS and PVFS on GeoStor Data," M.S. Project, CSCE
M.S. CSCE	Dec, 2002	Prashanth GopalaKrishna, "Parallel File I/O on Cluster for Geographic Information Systems", M.S. project, CSCE
M.S. CSCE	May, 2003	Mujahed Ibrahim, "Sorting Using MPI on Workstation clusters," M.S. project, CSCE
M.S. CSE	Aug, 2003	Gregory Amerson, "Design Analysis and Implementation of a Network Messaging Module using VIA," M.S. Thesis, Computer Systems Engineering
M.S. CSCE	May, 2004	Lance Johnson, "A Three-Node Ring Lock Manager," M.S. project, CSCE
M.S. CENG	May, 2005	Kurt Landrus, "Using Shibboleth to Control Access to Remote Cluster Resources," M.S. thesis, Computer Engineering
M.S. CSCE	Dec., 2005	Michael Tinker, "Performance Analysis of the Axiom Grid Architecture," M.S. project, CSCE
M.S. CENG	Dec., 2005	Bart Taylor, "Architectural Tradeoffs for Unifying Campus Grid Resources," M.S. Thesis, Computer Engineering
M.S. CENG	Aug, 2005	Linh Ngo, "Shibbolized Subversion," M.S. Thesis, Computer Engineering
M.S. CSCE	Aug, 2005	Matt Baker, "Methods for Maintaining Local Cluster Resources for Intercampus and Intracampus Grids," M.S. Thesis, CSCE

Undergraduate Honor Students completed

Degree	Year	Student and Title of Thesis
B.S.	Dec., 1998	Markus Landsberg, "Teaching English to Japanese: A Functional Webspace", Undergraduate Honor's Thesis, Fulbright College, University of Arkansas
B.S.	May, 2000	Julia Lincoln, "An Analysis of Wireless Networking on the University of Arkansas Campus", Undergraduate Honor's Thesis, Fulbright College, University of Arkansas
B.S.	May, 2000	Ben McKenzie, "The Design, Analysis, and Implementation of VIA for the PowerPC Architecture", Undergraduate Honor's Thesis, Fulbright College, University of Arkansas
B.S.	May, 2002	Brent Shores, "Evaluation of a Real-Time Cluster Architecture", Undergraduate Honor's Thesis, Fulbright College

- B.A. May, 2003 Genet Cramlet, "Women in Computing," Undergraduate Honor's Thesis, B.A. Computer Science, minor in Gender Studies, Fulbright College
- B.S. May, 2004 Taneem Ibrahim, "Evaluation of Distributed Software Design Architectures", Undergraduate Honor's Thesis, Fulbright College

Students in Progress

- Ph.D. CENG Baochuan Lu
 Ph.D. CENG Linh Ngo
 Ph.D. CSCE Matt Baker
 M.S. CENG Yuriko Yara
 M.S. CSCE Scott Fendley

C. Additional Information

Dr. Apon has consistently high teaching ratings, as shown above. All ratings are well above the departmental average course ratings. Some ratings are highly competitive at the University level. For example, the rating for Advanced Operating Systems, CSCE 5313, Spring 2001, is in the top ten percent of all University courses taught that semester.

Outstanding Undergraduate Research Mentor Award, University of Arkansas, for mentoring to Genet Cramlet and her publication on "Women in Computing" in the *Arkansas Journal of Undergraduate Research*, May, 2004, (\$1000 to mentor).

CSCE Teaching Award during 2001-2002, 2002-2003, and 2003-2004

Reid Hall Resident Assistant *Favorite Faculty Member* with recognition in a reception that was held on October 28, 1999.

Participation in the Supercomputing 2002 Education Program, November, 2002, Baltimore, MD. She led the team that was selected in a competitive process, and attended with D. Thompson and R. Deaton.

Outstanding Mentor Award from the University of Arkansas, 2001, 2002, 2003, 2004

Service on numerous masters and Ph.D thesis committees.

Direction of many Independent Studies and served as advisor for numerous Senior Design Projects.

Advising responsibility for approximately 25 undergraduate students for the past two years.

Mentor to SILO SURF Awardee Brent Shores, B.S. Magna Cum Laude, May 2002 – SILO SURF is a prestigious award for the student and the faculty member

Mentor to SILO SURF Awardee, Genet Cramlet, B.A., Summa Cum Laude, May 2003

Mentor to Sturgis Undergraduate Awardee, Taneem Ibrahim, Fall 2003 – a prestigious award for the student and the faculty member

Mentor to SILO SURF Awardee, Taneem Ibrahim, Magna Cum Laude, May 2004

Dr. Apon routinely escorts graduate students to national and international conferences.

Dr. Apon attended the Cohort of Associate Professor Project (CAPP) in Denver, Colorado, 2004.

The course on Grid Computing, Fall 2004, is one of a handful of courses of its type in the world, and is developed with collaborators at many institutions with the support of the National Science Foundation through CCLI A&I grant

Dr. Apon is collaborating with Barry Wilkinson, UNCC, and Jens Mache, Lewis & Clark College, to improve and develop course modules for grid computing.

Dr. Apon is collaborating with Thomas Sterling, LSU, to develop and teach course materials in high performance computing using Access Grid during Spring, 2007.

III. RESEARCH, PUBLICATION, AND OTHER CREATIVE ACTIVITY

A. Creative endeavors other than those involving publication, such as individual concerts, shows, and performances; group performances; and other kinds of professional activity.

Dr. Apon developed a series of PowerPoint tutorials on concurrent and cluster computing and presented these in a seminar series to employees of Axiom Corporation during the 1999-2000 academic year.

Dr. Apon led several training and information session meeting to users the Red Diamond supercomputer at the University of Arkansas during 2005-2006.

B. Books and Book Chapters

R. A. Miller, D. A. Giuse, N. B. Giuse, A. Geissbuhler, **A. Apon**, W. W. Stead. "Opportunities for Training in Biomedical Informatics at Vanderbilt University," *Yearbook of Medical Informatics*, 1996.

Contributing author to "The CRC Dictionary of Computer Science, Engineering and Technology", *Computer System Performance, Measurement, Modeling and Evaluation*, CRC Press LLC, May, 2000.

A. Apon and M. Baker. "Cluster Computing," in Volume 26 (Supplement 5) of the *Encyclopedia of Microcomputers*, October, 2000.

M. Baker, **A. Apon**, R. Buyya, H. Jin, "Cluster Computing and Applications," in the *Encyclopedia of Computer Science and Technology*, November, 2001.

D. R. Thompson and **A. Apon**, "Public Networks," in *The Internet Encyclopedia*. (H. Bidgoli, Ed.), vol 3. Hoboken, NJ: John Wiley & Sons, Dec. 2003.

A. Apon and J. Mache, editors, *Proceedings of the International Workshop on Grid Computing, Grid.Edu 2004*, Chicago, Illinois, April, 2004.

D. R. Thompson and **A. Apon**, "Public Network Technologies and Security," in *The Handbook of Information Security* (H. Bidgoli, Ed.). Hoboken, NJ: John Wiley & Sons, 2005.

O. Ardaiz-Villanueva, M. Bote-Lorenzo, **A. Apon** and B. Wilkinson, editors, *Proceedings of the Second International Workshop on Collaborative and Learning Applications of Grid Technology and Grid Computing*, CLAG+Grid.Edu 2005, Cardiff, UK, May, 2005.

C. Articles published in professional journals

R. S. Wall, **A. Apon**, J. Beal, M. T. Gately, and L. M. Oren. "An Evaluation of Commercial Expert System Building Tools," *Journal of Data and Knowledge Engineering*, vol. 1, 1985, p. 279-304.

A. Apon and L. W. Dowdy. "The Circulating Processor Model of Parallel Systems," *IEEE Transactions on Computers*, 46(5), May, 1997, p. 572-587.

A. Apon and M. Baker, "Network Technologies," in *A Whitepaper on Cluster Computing, The International Journal of High-Performance Computing Applications*, 15(2), Summer 2001, p. 102-114.

M. Baker and **A. Apon**, "Middleware," in *A Whitepaper on Cluster Computing, The International Journal of High-Performance Computing Applications*, 15(2), Summer 2001, p. 136-142.

A. Apon, J. Mache, R. Buyya, and H. Jin, "Cluster Computing in the Classroom and Integration with Computing Curricula 2001," *IEEE Transactions on Education*, May 2004.

M. Baker, **A. Apon**, C. Ferner, and J. Brown, "Emerging Grid Standards," *IEEE Computer*, 38(4), April 2005, p. 43-50.

A. Apon, G. Monaco, G. Springer, "The Great Plains Network (GPN) Middleware Test Bed," *Journal of Scalable Computing: Practice and Experience*, 19 pages, 2007, accepted and to appear.

J. Mache, and **A. Apon**, "Teaching Grid Computing: Topics, Exercises, and Experiences," *IEEE Transactions on Education*, 26 pages, 2007, accepted and to appear.

D. Articles Published in Highly Refereed Conference Proceedings

E. Rosti, E. Smirni, T. D. Wagner, **A. Apon**, and L. W. Dowdy. "The KSR1: Experimentation and Modeling of Poststore," ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems, 1993, pp. 74-85.

T. D. Wagner, E. Smirni, **A. Apon**, M Madhukar, and L. W. Dowdy. "Measuring the Effects of Thread Placement on the Kendall Square KSR1," Eighth International Parallel Processing Symposium, 1994.

C. Childers, **A. Apon**, W. H. Hooper, K. Gordon, and L. W. Dowdy. "The Multigraph Modeling Tool," Seventh International Conference on Parallel and Distributed Computing Systems, 1994.

A. Apon. "Challenges of Capacity Planning in a Distributed Environment," Computer Measurement Group Conference on the Performance of Enterprise Computer Systems, 1996.

A. Apon, T. D. Wagner, and L. W. Dowdy. "A Learning Approach to Processor Allocation in Parallel Systems," Eighth International Conference on Information and Knowledge Management CIKM99, November, 1999, p. 531--537.

A. Apon and L. W. Dowdy. "Load Dependent Single Chain Models of Multichain Closed Queueing Networks," Seventh International Conference on Telecommunication Systems, March, 1999.

P. Rajagopal and **A. Apon**. "Evaluation of RTFC as a Platform for Parallel Computing," Lecture Notes in Computer Science, Proceedings of the Fourteenth IPDPS 1999 Workshops on Parallel and Distributed Processing, 7th Workshop on Parallel and Distributed Real-Time Systems, Springer-Verlag, London, UK, April, 1999, p. 299-308. (Parvathi is my masters's student.)

A. Apon, H. A. Chen, C. F. Fischer, and L. Wilbur. "A Communication Staging Technique for Network Cache Architecture Clusters," in First IEEE International Workshop on Cluster Computing (IWCC'99), IEEE Computer Society (R. Buyya et al., eds.), 1999, p. 55-62.

H. A. Chen, Y. O. Carrasco, and **A. Apon**. "MPI Collective Operations over IP Multicast," Lecture Notes in Computer Science, Proceedings of the Fifteenth IPDPS 2000 Workshops on Parallel and Distributed Processing, Springer-Verlag, London, UK, May, 2000. pp. 51-60. (Ann is my master's student.)

D. Andrews, **A. Apon**, and L. Welch. "Message Passing Architectures for Stochastic and Dynamic Distributed Real Time Systems," 20th IEEE International Performance, Computing, and Communications Conference (IPCCC 2001), Phoenix, Arizona, April 4-6, 2001, p. 367-372.

A. Apon, R. Buyya, J. Mache, and H. Jin. "Cluster Computing in the Classroom: Topics, Guidelines, and Experiences," The First IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid 2001), Brisbane, Australia, May 16-18, 2001, p. 476-483.

A. Apon, P. Wolinski, and D. Reed. Massive Data Processing on the Axiom Cluster Testbed. Commercial Applications for High Performance Computing, held as a part of SPIE 2001, Denver, Colorado, August 19-23, 2001, p. 147-158.

A. Apon, P. Wolinski, G. Amerson, "Sensitivity of Cluster File System Access to I/O Server Selection," Proceedings of CCGrid 2002, May, 2002, pp. 183-192.

A. Apon, L. Wilbur, "AmpNet—A highly Available Cluster Interconnection Network", Proceedings of IPDPS 2003, Workshop on Communication Architectures for Clusters, Berlin, Germany, April, 2003, pp. 201-210.

M. Ibrahim, **A. Apon**, "Sorting using MPI on workstation clusters," Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, Nevada, June, 2003, pp. 151-156. (Mujahed is my M.S. student.)

Y. Zhang, **A. Apon**, P. Pulay, "File Arrays for Out-of-Core Computations" Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, Nevada, June, 2003, 7 pages. (Yueyue is my Ph.D. student.)

A. Apon, J. Mache, Y. Yara, and K. Landrus, "Classroom Exercises for Grid Services," Proceedings of the Linux Cluster Institute International Conference on High Performance Computing, Austin, Texas, May, 2004, 12 pages.

Johnson, L., and Apon, A. "A Three-Node Ring Lock Manager," International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, Nevada, June, 2004, 4 pages. (Lance is my master's student.)

Gregory Amerson, and **A. Apon**, "Implementation and Design Analysis of a Network Messaging Module Using Virtual Interface Architecture," International Conference on Cluster Computing (Cluster 2004), San Diego, September, 2004, 11 pages. (Greg is my master's student.)

A. Apon, Kurt Landrus, Jens Mache, and Kathryn Huxtable, "Using Shibboleth to Manage Access Control to Remote Cluster Computing Resources," Proceedings of SC2004 - 17th ACM/ IEEE High-Performance Computing, Networking and Storage Conference, November, 2004.

A. Apon, Kurt Landrus, "Introduction to Shibboleth," Proceedings of ALAR 2005 Conference on Applied Research in Information Technology, February 18, 2005.

J. Mache and **A. Apon**, "Grid Computing in the Undergraduate Classroom: Topics, Exercises and Experiences," Second International Workshop on Collaborative Learning Applications of Grid Technology and Grid Education, Proceedings of the International Conference on Cluster Computing and the Grid, Cardiff, UK, May, 2005.

B. Lu, M. Tinker, **A. Apon**, D. Hoffman, and L. Dowdy, "Adaptive Automatic Grid Reconfiguration Using Workload Phase Identification," Proceedings of EScience 2005, December, 2005, 9 pages. (Baochuan is my Ph.D. student and Michael is my master's student.)

F. Robinson, **A. Apon**, D. Brewer, L. Dowdy, D. Hoffman, B. Lu, "Initial Starting Point Analysis for K-Means Clustering: A Case Study," Proceedings of ALAR 2006 Conference on Applied Research in Information Technology, March, 2006.

B. Taylor and **A. Apon**, "Unifying Campus Grid Resources," PowerPoint presentation at ALAR 2006 Conference on Applied Research in Information Technology, March, 2006. (Bart is my master's student.)

B. Taylor and **A. Apon**, "Architectural Tradeoffs for Unifying Campus Grid Resources," Linux Cluster Institute 2006, May, 2006, 26 pages. (Bart is my master's student.)

Y. Zhang and **A. Apon**, "Implementation Tradeoffs of the Array Files Library for Out-of-Core Computations," International Conference on Cluster Computing (Cluster 2006), Barcelona, September, 2006, 8 pages. (Yueyue is my Ph.D. student.)

B. Lu, **A. Apon**, L. Dowdy, F. Robinson, D. Hoffman, and D. Brewer, "A Case Study on Grid Performance Modeling," 10 pages, submitted to International Conference on Parallel and Distributed Computing Systems. (Baochuan is my Ph.D. student.)

L. Ngo and **A. Apon**, "Shibbolized Subversion," 8 pages, to be submitted to International Conference on Information Technology: New Generations, 2007. (Linh is my master's student.)

E. Government Technical Reports

E. Rosti, E. Smirni, T. D. Wagner, **A. Apon**, and L. W. Dowdy. "The KSR1: Experimentation and Modeling of Poststore," ORNL/TM-12287, April 15, 1993, 37 pages.

T. D. Wagner, E. Smirni, **A. Apon**, M Madhukar, and L. W. Dowdy. "Measuring the Effects of Thread Placement on the Kendall Square KSR1," ORNL/TM-12462, September 7, 1993, 31 pages.

A. Apon, Final Report for NSF Grant 9617384, "Application and Evaluation of a Low-Cost Parallel Processing Platform", June 29, 1999.

A. Apon, Final Report for NSF Grant 9996143, “A Parallel Message Passing Platform for Atomic Structures Calculations”, October 30, 2001.

A. Apon, Status report to NSF for Accurate Calculation of Electron Correlation Energies in Large Molecules using Low-cost Parallel Hardware (co-PI), January, 2004.

A. Apon, G. Monaco, G. Springer, K. Huxtable. “Building the Great Plains Network Middleware Testbed,” Case Study and Final Report to Educause/NSF, January, 2006.

A. Apon, Status report for NSF Grant 0410966, “Collaborative Project: Adaptation of Globus Toolkit 3 Tutorials for Undergraduate Computer Science Students,” (PI), July, 2006.

A. Apon, Status report to NSF Grant 0421099, “MRI: Acquisition of a Computing Cluster for High-End Applications in Science and Engineering (CHASE),” (PI), August, 2006.

F. Other Formal Reports and Publications

A. Apon., “The Axiom Cluster Testbed,” Final Report to the Arkansas Science and Technology Authority, August, 2002.

Advisor to B. Shores, “Analysis of a Real-Time Software Architecture for Low-Cost Linux Clusters,” Final Report to SURF/SILO, May, 2002.

A. Apon, “Phase I Software Development of the Virtual Satellite,” Project Status Report to the Virtual Satellite Corporation, December 20, 2002.

Advisor to P. Gopalakrishna, Master’s Thesis on Parallel File I/O on Cluster for Geographic Information Systems, submitted as a project report to PCI Geomatica, December, 2002.

G. Amerson, J. Maxwell, D. Reed, and **A. Apon**, “Evaluation of the InfinSwitch InfiniBand Cluster Interconnect,” Project Report to InfinSwitch Corporation, December 18, 2002.

Thompson, D., Apon, A., Yara, Y, Mache, J., and Deaton, R., “Training a Grid Workforce”, poster presented at The Oklahoma Supercomputing Symposium, September, 2003.

Michael Tinker, Linh Ngo, **A. Apon**, Bill Johnston, and Snow Winters, “Exploiting the Grid: Distributed Rendering,” poster presented at The Oklahoma Supercomputing Symposium, October, 2004.

A. Apon, “The Adaptive Axiom Grid,” Presentation and report to Axiom Corporation, August, 2004.

A. Apon, “Requirements and Development of an Axiom Modeling Environment Based on Single and Multi-Class Queuing Network Models,” (PI), Final Report to Axiom Corporation, June 30, 2006.

G. Invited Presentations

A. Apon, “Applications of Generalized Stochastic Petri Nets to the Performance Evaluation of Multiprocessor Systems,” Formal Modeling of Complex Systems Seminar, Vanderbilt University, February 24, 1995.

A. Apon, "The Circulating Processor Model of Parallel Systems," Real-Time and Distributed Systems Group Seminar, Carleton University, May 23, 1995.

A. Apon, "Cluster Computing Research at Vanderbilt," University of Tennessee Space Institute, September 11, 1997.

A. Apon, "Cluster Computing Research at the University of Arkansas", Acxiom technical symposium, Spring, 2000.

A. Apon, "Introduction to Shibboleth," Oklahoma Supercomputing Symposium, Norman, Oklahoma, October 6, 2004.

A. Apon, "Supercomputing at the University of Arkansas," Oklahoma Supercomputing Symposium, Norman, Oklahoma, October, 2005.

A. Apon, "High Performance and Grid Computing at the University of Arkansas," CCT Talk Series, Louisiana State University, August 11, 2006.

H. Other Articles

Advisor to Allen MacKenzie, "A Comparison of Network Measurement Tools," Technical Report, Vanderbilt University, 1997.

K. Gordon, **A. Apon**, B. Hooper, and L. Dowdy, "An Introduction and Analysis of RTFC Rostering," Technical Report, Vanderbilt University, June, 1998.

Advisor to Julia Lincoln, "An Analysis of Wireless Networking on the University of Arkansas Campus," The University of Arkansas Journal of Undergraduate Research, Summer, 2000.

Advisor to Ben McKenzie, "The Design, Analysis, and Implementation of VIA for the PowerPC Architecture," The University of Arkansas Journal of Undergraduate Research, Summer, 2000.

Advisor to Genet Cramlet, "Women in Computing: An Exploration of Current Status and Future Trends," The University of Arkansas Journal of Undergraduate Research, Summer, 2004.

Advisor to Taneem Ibrahim, "A Comparative Evaluation of Java RMI and .NET," The University of Arkansas Journal of Undergraduate Research, Summer, 2004.

IV. SUPPORT FOR RESEARCH AND SPONSORED PROGRAMS

A. External Research Grants Funded

Title: Graduate Student Travel Award to attend Performance '93
Sponsor: National Science Foundation
Investigator: Amy Apon
Start date: October, 1993
End date: October, 1993
Amount: \$800

Title: Performance Measurement and Modeling of Parallel Computer Systems
Sponsor: National Science Foundation

Investigator: Amy Apon
Start date: October, 1994
End date: September, 1996
Amount: \$17,364

Title: Alternative Operating Systems Support Techniques for Parallel Processing Systems.

Sponsor: Ballistic Missile Defense Organization

Investigator: Amy Apon
Start Date: September, 1995
End Date: October, 1998
Amount: \$223,994

Title: CISE Research Instrumentation: Application and Evaluation of a Low Cost Parallel Processing Platform.

Sponsor: National Science Foundation

Investigators: Amy Apon (PI), Douglas Fisher (co-PI), David R. Pickens (co-PI)
Start Date: January, 1997
End Date: March, 1999
Amount: \$45,119

Title: CISE Research Instrumentation: Application and Evaluation of a Low Cost Parallel Processing Platform.

Sponsor: Vanderbilt University Department of Radiology

Investigators: Amy Apon (PI), Douglas Fisher (co-PI), David R. Pickens (co-PI)
Start Date: January, 1997
End Date: March, 1999
Amount: \$7,500

Title: CISE Research Instrumentation: Application and Evaluation of a Low Cost Parallel Processing Platform.

Sponsor: Vanderbilt University Department of Computer Science

Investigators: Amy Apon (PI), Douglas Fisher (co-PI), David R. Pickens (co-PI)
Start Date: January, 1997
End Date: March, 1999
Amount: \$7,500

Title: Research Experiences for Undergraduates supplement to CISE Research Instrumentation: Application and Evaluation of a Low Cost Parallel Processing Platform.

Sponsor: National Science Foundation

Investigators: Amy Apon (PI)
Start Date: January, 1997
End Date: March, 1999
Amount: \$10,000

Title: A Parallel Message-Passing Platform for Atomic Structure Calculations
Sponsor: National Science Foundation Grant ESS#9996143
Investigators: Amy Apon (PI), C. Fischer (co-PI), L. Dowdy (co-PI)
Start Date: September, 1999
End Date: August, 2001
Amount: \$75,000

Title: Graduate student supplement to A Parallel Message-Passing Platform for Atomic Structure Calculations
Sponsor: National Science Foundation Grant ESS#9996143
Investigators: Amy Apon (PI)
Start Date: September, 1999
End Date: August, 2001
Amount: \$14,485

Title: Research Experiences for Undergraduates supplement to A Parallel Message-Passing Platform for Atomic Structure Calculations
Sponsor: National Science Foundation Grant ESS#9996143
Investigators: Amy Apon (PI)
Start Date: September, 1999
End Date: August, 2001
Amount: \$10,000

Title: Graduate student supplement to A Parallel Message-Passing Platform for Atomic Structure Calculations
Sponsor: National Science Foundation Grant ESS#9996143
Investigators: Amy Apon (PI)
Start Date: September, 1999
End Date: August, 2001
Amount: \$14,485

Title: Design, Implementation, and Evaluation of MPI and MPI Supporting Functions for NetCache™
Sponsor: Belobox Networks
Investigator: Amy Apon (PI)
Start Date: July, 1999
End Date: August, 2000
Amount: \$22,802

Title: Design and Implementation of the Eastel 3GPP Base Station
Sponsor: ITI Communications, Inc.
Investigator: Amy Apon (PI)
Start Date: January, 2001
End Date: July, 2001
Amount: \$49,513

Title: The Acxiom Cluster Testbed
Sponsor: Acxiom Corporation
Investigator: Amy Apon (PI)
Start Date: January, 2001
End Date: December, 2001
Amount: \$48,300

Title: The Acxiom Cluster Testbed
Sponsor: Arkansas Science and Technology Authority
Investigator: Amy Apon (PI)
Start Date: January, 2001
End Date: December, 2001
Amount: \$45,000

Title: Analysis of a Real-Time Software Architecture for Low-Cost Linux Clusters
Sponsor: SILO/SURF
Investigators: Amy Apon
Start date: January 1, 2002
End date: May 30, 2002
Amount: \$3,800

Title: Women in Computing
Sponsor: SILO/SURF
Investigators: Amy Apon
Start date: December, 2002
End date: October, 2003
Amount: \$3800

Title: A Comparison of Java and .NET
Sponsor: SILO/SURF
Investigators: Amy Apon
Start date: December, 2003
End date: October, 2004
Amount: \$2400

Title: Accurate Calculation of Electron Correlation Energies in Large Molecules using Low-cost Parallel Hardware
Sponsor: ITR Solicitation, National Science Foundation
Investigators: Peter Pulay (PI) (50%) Amy Apon (co-PI) (50%)
Start date: September, 2002
End date: August, 2005
Amount: \$488,000

Title: Acxiom Problems 1&2
Sponsor: Acxiom Corporation

Investigators: Dale Thompson (PI)
Craig Thompson (co-PI)
Amy Apon (co-PI)
Start date: May 16, 2004
End date: May 15, 2005
Amount: \$193,000 (estimated)

Title: Acxiom Problem 5
Sponsor: Acxiom Corporation
Investigators: Amy Apon (PI)
Start date: May 16, 2004
End date: May 15, 2005
Amount: \$50,000

Title: Collaborative Proposal: CCLI A&I: Adaptation of Globus Toolkit 3
Materials for Undergraduate Computer Science Students
Sponsor: NSF
Investigators: Amy Apon (PI, 50%)
Jens Mache (co-PI 50%), Lewis & Clark College
Start date: July 1, 2004
End date: June 30, 2006
Amount: \$99,000 (Arkansas share approximately \$58,000)

Title: Supplement to Collaborative Proposal: CCLI A&I: Adaptation of Globus
Toolkit 3 Materials for Undergraduate Computer Science Students
Sponsor: NSF
Investigators: Amy Apon
Start date: July 1, 2004
End date: June 30, 2006
Amount: \$13,600

Title: Extending the Reach: Building the Middleware Infrastructure Across the
Great Plains
Sponsor: Educause/Internet2/NSF
Investigators: Amy Apon (PI)
David Merrifield (co-PI), and eight others from the Great Plains Network
(GPN) Consortium
Start date: June 1, 2004
End date: May 31, 2005 (Phase I), May 31, 2006 (Phase II)
Amount: \$75,000 from Educause
\$35,000 committed from MidNet
\$7,000 cost sharing from the University of Arkansas
Cost sharing of over \$100,000 (estimated) from numerous resources in the
GPN Consortium

Title: Supplement to Extending the Reach: Building the Middleware Infrastructure Across the Great Plains
Sponsor: Educause/Internet2/NSF
Investigators: Amy Apon (PI)
David Merrifield (co-PI), and eight others from the Great Plains Network (GPN) Consortium
Start date: June 1, 2004
End date: September 30, 2005 (Phase I)
Amount: \$8,000 from Educause

Title: MRI: Cluster for High-End Applications in Science and Engineering
Sponsor: NSF
Investigators: Amy Apon (PI)
Peter Pulay (co-PI)
Laurent Bellaiche (co-PI)
Russell Deaton (co-PI)
Huaxiang Fu (co-PI)
Paneer Selvam (co-PI)
Start date: August 1, 2004
End date: July 31, 2007
Amount: \$213,334
\$213,334 cost sharing and additional funds from the University of Arkansas

Title: Requirements and Development of an Acxiom Modeling Environment Based on Single and Multi-class Queuing Network Models
Sponsor: Acxiom Corporation
Investigators: Amy Apon (PI), and Larry Dowdy
Start date: May 16, 2005
End date: September 30, 2006
Amount: \$118,740

Title: Hierarchical Modeling of the Acxiom Grid
Sponsor: Acxiom Corporation
Investigators: Amy Apon (PI), and Larry Dowdy
Start date: May 16, 2006
End date: May 15, 2007
Amount: \$130,008

B. Research Equipment and Software

Description: Grant of 8-way symmetric multiprocessor and a 4-way symmetric multiprocessor computers
Sponsor: Acxiom Corporation
Investigator: Amy Apon (PI)
Date Received: November, 1999
Value: Estimated at \$500,000 in 1992

Description: Consignment of Real-Time Fiber Communications (RTFC) hardware and supporting AmpDC middleware.
Sponsor: Belobox Networks
Investigator: Amy Apon (PI)
Start Date: July, 1997
End Date: June, 2000
Value: \$100,000

Description: Parallel I/O on Cluster for Geographic Information Systems
Sponsor: PCI Geomatica
Investigators: Amy Apon
Start date: February, 2002
End date: December, 2002
Amount: Software licensing, approximately \$6,000

Description: Evaluation of InfiniSwitch InfiniBand Cluster Interconnect
Sponsor: InfiniSwitch
Investigators: Amy Apon
Start date: August, 2002
End date: Continuing
Amount: InfiniSwitch hardware, approximately \$15,000

Description: Evaluation of Apple G5 computer
Sponsor: Apple Computer
Investigators: Amy Apon
Start date: December, 2003
End date: Continuing
Amount: Apple G5 Computer, approximately \$4,000

Description: Metadata Design and Array File Implementation over the AmpNet Cluster Interconnect
Sponsor: Belobox Networks, Irvine, California
Investigators: Amy Apon
Start date: August, 2003
End date: Continuing
Amount: AmpNet hardware and supporting software, approximately \$25,000

Title: Cluster for High-End Applications in Science and Engineering
Sponsor: Dell Computer Corporation
Investigators: Amy Apon (PI)
Start date: December, 2004
Amount: \$505,000

Description: Building a Grid Computing Infrastructure in the Great Plains Region
Sponsor: Sun Microsystems

Investigators: Greg Monaco, Gordon Springer, David Swanson, Amy Apon
Start Date: January, 2006
End Date: Continuing
Amount: Sun cluster hardware, approximately \$65,000

C. Research support and grants from the University

Title: New faculty startup funds
Sponsor: Graduate School, University of Arkansas
Date: August, 1998
Value: \$48,000

Title: Graduate student supplement to A Parallel Message-Passing Platform for Atomic Structure Calculations
Sponsor: Graduate School, University of Arkansas
Investigators: Amy Apon (PI)
Start Date: September, 1999
End Date: August, 2001
Amount: \$12,273

Title: Design, Implementation, and Evaluation of MPI and MPI Supporting Functions for NetCache™
Sponsor: Fulbright College
Investigator: Amy Apon (PI)
Start Date: July, 1999
End Date: August, 2000
Amount: \$24,305 (matching salary amount in kind)

Title: Cluster Computing in the Classroom, Topics, Guidelines, and Experiences
Sponsor: CSCE Department
Investigators: Amy Apon (PI)
Start Date: May, 2001
End Date: May, 2001
Amount: \$1500, for airfare to present the paper at the Cluster.Edu conference

Title: Oklahoma Supercomputing Symposium
Sponsor: CSCE Department
Investigator: Amy Apon (PI)
Amount: \$200 (estimated) to attend workshop, present poster, and escort 8 graduate students

Title: Supercomputing, 2003
Sponsor: CSCE Department
Investigator: Amy Apon (PI)
Amount: \$800 to attend Supercomputing for collaboration talks

Title: International Workshop on Grid Education
Sponsor: CSCE Department
Investigator: Amy Apon (PI)
Amount: \$1500 (estimated) to attend and Co-Chair Grid.Edu workshop

Title: Administrative Support for High Performance Computing
Sponsor: Graduate School
Investigator: Amy Apon (PI)
Dates: November, 2005-June 30, 2007
Amount: \$60,000 (estimated) for salaries, stipend, tuition, for HPC administration

Title: Administrative Support for High Performance Computing
Sponsor: Computing Services
Investigator: Amy Apon (PI)
Dates: May, 2005-June 30, 2007
Amount: \$45,000 (estimated) for salaries and stipend for graduate assistant

Title: Director of High Performance Computing
Sponsor: Graduate School
Investigator: Amy Apon (PI)
Dates: July 1, 2006-June 30, 2007
Amount: \$20,000 salary in support of HPC Director

Title: Director of High Performance Computing
Sponsor: Computing Services
Investigator: Amy Apon (PI)
Dates: July 1, 2006-June 30, 2007
Amount: \$10,000 (estimated) salary in support of HPC Director

Title: Platform LSF Scheduling Software
Sponsor: Computing Services/AREON
Investigator: Amy Apon (PI)
Dates: May, 2006
Amount: \$46,000 (estimated) to purchase LSF scheduler for Red Diamond

D. Additional information

Dr. Apon received the 2001 Department of Computer Science and Computer Engineering Outstanding Researcher Award and Outstanding Teaching Awards in 2002, 2003, and 2004.

Two of the Senior Honor's Thesis students appeared in the University of Arkansas Journal of Undergraduate Research. This is a competitive, refereed publication with a 50% acceptance rate.

Dr. Apon has served as a reviewer for the National Science Foundation on multiple occasions. The most recent service is on the panel for reviewing MRI solicitations, March 4, 2005.

Dr. Apon's expertise is being recognized internationally. She has been asked to serve in several capacities in the international research community, including serving on program committees and as a reviewer for international conferences and journals.

Dr. Apon's expertise is also being recognized within the state of Arkansas. She has been asked to speak on several occasions to employees and technical events with Acxiom Corporation.

V. SERVICE

A. Service performed at the university, college, or departmental levels.

At East Central University (1986-1990)

- Department equipment committee
- Campus equipment committee
- Faculty search committee

At Fisk University (1994-1995)

- Developed, installed, and maintained the Fisk home pages (among the first web pages ever published), December, 1994.
- Faculty mentor for the Student Chapter of the ACM

At Vanderbilt University (1996-1998)

- CSAB/ABET accreditation committee

At the University of Arkansas (1998-present)

- Undergraduate Curriculum Committee (chair 1998-2002, member 2003-present)
- Comprehensive Examiner (1998-2001)
- Ph.D. Qualifying Examiner, each semester
- Head Search Committee (on two separate committees)
- Faculty Search Committee (on multiple years)
- Tech Fee University-level committee (2002-2007)
- Scholarship Committee, Engineering College-level committee (2004-2005)
- De facto Director of High Performance Computing, 2004-present. This position has been very partially compensated by the University and represents a commitment of 10-20 hours each week managing a full-time system administrator, a part-time graduate assistant, responding to user requests, setting policy for HPC usage, designing hardware and software architectural solutions, representing the University externally to the national HPC community, and other Director tasks.

B. Provide information concerning service in professional organizations.

Membership in Professional Organizations:

- IEEE, 1996-present
- IEEE Computer Society, 1996-present
- Association for Computing Machinery, 1990-present
- SIGMETRICS, 1991-present
- SIGOPS, 1991-present
- SIGARCH, 1998-present

Participant in the AAAS seminar to advise the National Science Foundation, NSF review panelist for ITR.

Publicity Chair for the Eighth International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 2000).

Session Chair for the Seventh International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 1999).

Session Chair for the Eighth International Conference on Information and Knowledge Management (CIKM 1999)

Review Panelist for the ITR Solicitation for the National Science Foundation, March, 2000.

Session Chair for the Eighth International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 2000).

Program Committee Member for HPCN2000, The University of Amsterdam, The Netherlands, May, 2000

Program Committee Member for WCNC2000, Chicago, Illinois, September, 2000.

Program Committee Member for CMG2000 Research Track, The Computer Measurement Group, Inc. 26th Annual Conference Orlando, FL, December 10-15, 2000.

Executive Committee member (Publicity Chair) for IEEE Task Force on Cluster Computing

Publicity Chair for the Eighth International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 2000).

Program Committee Member for EuroPar2001.

Program Committee Member for Cluster 2001.

Publicity Chair for the Ninth International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 2001).

Session Chair for the Conference on Commercial Applications for High-Performance Computing

Publicity Chair for the Tenth International Workshop on Parallel and Distributed Real-Time Systems (WPDRTS 2002).

Program committee, Cluster 2002, responsible for reviewing several papers.

Reviewer for IEEE Transactions on Computers, reviewed DPR, LPR: Proactive Resource Allocation Algorithms for Asynchronous Real-Time Systems”

Reviewer for Special Issue of the Wiley Journal Computation and Concurrency

Reviewer for IPDPS 2003

Reviewer for International Journal of Computer Applications

Reviewer for the Special Issue of Supercomputing Journal on Infrastructures and Applications for Cluster and Grid Computing Environments

Reviewer for International Workshop on Communication Architectures for Clusters, 2003

Reviewer for IEEE Transactions on Education

Reviewer for the Handbook of Information Security

Co-Chair and primary organization of First International Workshop on Grid Education, Grid.edu 2004

Program Committee member and reviewer for Cluster 2004

Program Committee member and Reviewer for Grid 2004

Session Chair for Cluster 2004

Program Committee member for ISPA 2004

Co-Chair for Second International Workshop on Collaborative and Learning Applications of Grid Technology and Grid Education, CLAG + Grid.edu 2005

Program Committee member for Cluster 2005

NSF MRI Panel member, 2005

NSF CRI Reviewer, 2005

Program Committee member for ISPA 2005

Reviewer, International Journal of Computer Applications, 2006

Program Committee member for ICAS 2006

Program Committee member for ICNS 2006

Program Committee member for Cluster 2006

Program Committee member for SC Posters, 2006

NSF MRI Panel member, 2005

C. Other kinds of professional service

Expert Witness for Block Financial Corporation vs. Yodlee on patent issues in middleware issues, 2003.

D. Professional Consulting

Acxiom Corporation

Virtual Satellite Corporation

ITI Communications, Inc.