CURRICULUM VITAE

JOHNNIE WARREN BAKER

EDUCATION SUMMARY

B.A. Mathematics, Hardin-Simmons University in Abilene Texas
M.A. Mathematics, University of Texas at Austin, 1965
Ph.D. Mathematics, University of Texas at Austin, 1968
Dissertation Title: *Some uncomplemented subspaces of C(X) of the type C(Y)*
Director: E. Ward Cheney

PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

2000- Professor of Computer Science, Kent State University
1995-99 Professor of Mathematics and Computer Science, Kent State University
1983-84 Visiting Associate Professor of Computer Science, University of Texas at Austin
1975-95 Associate Professor of Mathematical Sciences, Kent State University
1973-75 Assistant Professor of Mathematics, Kent State University
1973- Graduate faculty status, Kent State University
1968-73 Assistant Professor of Mathematics, Florida State University
1963-68 Teaching Assistant/Teaching Associate of Mathematics, University of Texas

ADMINISTRATIVE APPOINTMENTS (KENT STATE UNIVERSITY)

2001-04 Founding Chair, Department of Computer Science (Department created July 1, 2001)
1996-99 Member of the University Council on Technology Committee
1995-98 Departmental representative to the Ohio CS Chairs and Assistant Chairs meetings
1995- Departmental representative to the statewide committee consisting of all chairs and assistant chairs of Ph.D. programs in computer science at State supported institutions.
1991-01 Computer Science Coordinator (top computer science administrative position in Department of Mathematical Sciences)
1991-01 Chair of the Computer Science Advisory Committee
1990-91 Appointed by the Dean to coordinate creation of the Departmental Chair Review Committee
1990-91 Department Representative to the College Advisory Committee
1985-88 Computer Science Coordinator (top computer science administrative position in the Department of Mathematical Sciences).
1985-88 Chair of the Computer Science Advisory Committee
1981-82 Colloquium Committee chairman
1977-78 Departmental Library Representative
1974-75 Chair of the Computer Science Curriculum Development Committee, College of Arts and Sciences
1974-75 EPC Computer Science Department Proposal Review Committee member
1974-75 College of Arts and Sciences Dean Search Committee
1974-77 Departmental Undergraduate Coordinator

RESEARCH

CURRENT RESEARCH AREAS OF INTEREST

- Parallel architecture and software for the air traffic control problem
- Parallel models, data parallel and associative SIMD computing, parallel algorithms
- SIMD algorithms and software for sequence alignment in bioinformatics
- Molecular similarity analysis, drug design, molecular engineering

EARLIER RESEARCH AREAS OF INTEREST

- Mathematical algorithms
- Computer algebra
- Banach spaces and topology

REFEREED PRESENTATIONS AND PUBLICATIONS

Unofficial versions of most of my parallel papers are available at the web site http://www.cs.kent.edu/~parallel/papers/

In Preparation, Recent Submissions, and Acceptances:

1. Mike Yuan, Johnnie Baker, Frank Drews, Will Meilander, and Kevin Shaffer, "*System Design and Algorithms for an Air Traffic Control Prototype using an Associative Processor with Timings and Comparisons"*, IEEE Transactions of Parallel and Distributed Systems (TPDS), Currently revising to meet reviewers' requests.
2. Shannon Steinfadt and Johnnie W. Baker, "*SWAMP+: Extended Smith-Waterman Search for Parallel SIMD models*", Submitted to the IEEE International Workshop on High Performance Computational Biology
3. Weiguo Fan, Rohit Pasari, Paul J. Durand, Johnnie W. Baker, and Chun-che Tsai (Chemistry Dept), "*Molecular Similarity Analysis through Maximal Common Substructures and a Topological Approach for Structure-activity Relationship Analysis"*, In preparation for submission to the Journal of Chemical Information and Modeling before June, 2011, 43 page manuscript.
4. Wittaya Chantamas and Johnnie Baker, *"An Implementation of a Cycle Precision Simulator of a Multiple Associative Computer on CUDA-enable GPUs*", to be submitted to SuperComputing (SC2011).
5. Johnnie Baker & Others, "*NP-Hard Results for Non-Multiprocessor Parallel Models*". There are a large number of "NP-hard results for multiprocessors" that are generally considered to apply to all parallel systems. This paper will show this general belief is false and will identify assumptions used in some of these proofs that are invalid for certain non-multiprocessor parallel models.

Publications: (All conference papers were also presented)

1. Jerry Trahan, Mingxian Jin, Wittaya Chantamas, and Johnnie Baker, "*Relating the Power of the Multiple Associative Computing Model (MASC) to that of Reconfigurable Bus-Based Models*", Journal of Parallel & Distributed Computing 70(2010), pgs 458-466, Elsevier Publishers, Available online at ScienceDirect: www.sciencedirect.com, May, 2010.
2. Mike Yuan, Johnnie Baker, Frank Drews, Lev Neiman, and Will Meilander, "*An Efficient Associative Processor Solution to an Air Traffic Control Problem*", Large Scale Parallel Processing IEEE Workshop at the International Parallel and Distributed Computing Symposium (IPDPS2010), published on IPDPS-2010 CDROM and in the IEEE Digital Library with other IPDPS-2010 publications, 8 pages, April 2010.
3. Mike Yuan, Johnnie Baker, Frank Drews, and Will Meilander, "A*n Efficient Implementation of Air Traffic Control using the ClearSpeed CSX620 System"*, Parallel and Distributed Computing Systems (PDCS 2009), Cambridge, 353-360, November 2009

4. Shannon Steinfadt and Johnnie. W. Baker, *"SWAMP: Smith-Waterman using Associative Massive Parallelism*", IEEE Workshop on Parallel and Distributed Scientific and Engineering Computing, 2008 International Parallel and Distributed Processing Symposium (IPDPS) at Miami, 8 pages, published on CD, April 14-18, 2008.
5. Mingxian Jin and Johnnie W. Baker "*Two Graph Algorithms on an Associative Computing Model"*, 2007 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'07), Las Vegas, 7 pages, June 25-28, 2007.
6. Shannon Steinfadt, Michael Scherger, and Johnnie W. Baker, "*A Local Sequence Alignment Algorithm Using an Associative Model of Parallel Computation*", Proc. of IASTED Computational and Systems Biology (CASB 2006), Dallas, pp. 38-43, Nov. 13-14, 2006.
7. Weiguo Fan, Xin Lin, Yu-Wei Hsieh, Boren Lin, Paul Durand, Johnnie Baker and Chun-che Tsai, "*Chemical molecular similarity analysis and its applications in structure-activity visualization*", The Life Science Society (LSS) Computational Systems Bioinformatics Conference, Stanford University, California, 6 pages in proceeding CD, August 14-18, 2006.
8. Wittaya Chantamas, Johnnie Baker, and Michael Scherger, "*An Extension of the ASC Language Compiler to Support Multiple Instruction Streams in the MASC Model using the Manager-Worker Paradigm,*", Proc. of the 2006 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA 2006), 7 pages in proceedings CD, June 2006.
9. Wittaya Chantamas, Johnnie Baker, and Michael Scherger, "*Compiler Extension of the ASC Language to Support Multiple Instruction Streams in the MASC Model using the Manager-Worker Paradigm*", 2006 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'06), Las Vegas, 7 pages, June 26-29, 2006.
10. Stewart Reddaway, Will Meilander, Johnnie Baker, and Justin Kidman, "*Overview of Air Traffic Control Using an SIMD COTS System*", International Parallel and Distributed Processing Symposium, 9 pages, Published on CD, April 2005
11. Wittaya Chantamas and Johnnie Baker, "*A Multiple Associative Model to Support Branches in Data Parallel Applications using the Manager-Worker Paradigm*", Proc. of the 19th International Parallel and Distributed Processing Symposium (IEEE WMPP Workshop), 8 pages, April 2005.
12. Weiguo Fan, Xin Lin, Yu-Wei Hsieh, Boren Lin, Johnnie W. Baker and Chun-che Tsai, "*Chemical Structure-Activity Relationship Visualization Using Structure-Activity Maps*", 2005 IEEE Computational Systems Bioinformatics Conference, Stanford University, California, USA, 2 pages, August 8 - 11, 2005.
13. Darrell Ulm, Johnnie Baker, and Michael Scherger, "*Solving a 2D Knapsack Problem Using a Hybrid Data-Parallel/Control-Parallel Style of Computing*", Proc of the 18th International Parallel and Distributed Processing Symposium, (IEEE Workshop on Massively Parallel Processing), Santa Fe, NM,, May 2004.
14. Michael Scherger, Johnnie Baker, and Jerry Potter, "*Multiple Instruction Stream Control for an Associative Model of Parallel Computation", Proc. of the 17th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing),* abstract on page 266, full text on CDROM, presented at Nice, France, April 2003.
15. Michael Scherger, Johnnie Baker, and Jerry Potter, "*An Object Oriented Framework for and Associative Model of Parallel Computation*", Proc. of the 17th International Parallel and Distributed Processing Symposium (Workshop in Advances in Parallel and Distributed Computational Models), abstract on page 166 , full text on CDROM, presented at Nice, France, April 2003.
16. Will Meilander, Johnnie Baker, and Mingxian Jin, "*Importance of SIMD Computation Reconsidered*", Proc. of the 17th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 266, full text on CDROM , presented at Nice, France, April 2003.

17. Will C. Meilander, Mingxian Jin, and Johnnie W. Baker, "*Tractable Real-Time Air Traffic Control Automation*", Proc. of the 14th IASTED International Conference on Parallel and Distributed Computing and Systems, pg 483-488, Cambridge, MA, November 2002.
18. Will Meilander, Johnnie Baker, and Mingxian Jin, "*Predictable Real-Time Scheduling for Air Traffic Control*", Proc. of the 15th International Conference of Systems Engineering, pages 533-539, presented at Las Vegas, NV, August 2002.
19. Michael Scherger, Jerry Potter, and Johnnie W. Baker, "*On Using the UML to Describe the BSP Model of Parallel Computation*", in Proc. of the 2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'2002), volume II, pages 578-583, presented Las Vegas, NV, June 2002.
20. Mingxian Jin, Johnnie W. Baker, and Will C. Meilander, "*The Power of SIMDs vs. MIMDs in Real-Time Scheduling*", , in Proc. of the 16th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 248, full text on CDROM, presented Ft. Lauderdale, FL, April 2002.
21. Maher M. Atwah and Johnnie W. Baker "*An Associative Static and Dynamic Convex Hull Algorithm*", Proc. of the 16th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 249, full text on CDROM, presented Ft. Lauderdale, FL, April 2002.
22. Mingxian Jin, Johnnie Baker, and Kenneth Batcher, "*Timings for Associative Operations on the MASC Model*", Proc. of the 15th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 193, full text on CDROM, presented San Francisco, CA, April 2001.
23. Will C. Meilander, Johnnie W. Baker, and Jerry Potter, "*Predictability for Real-Time Command and Control*", Proc. of the 15th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 194, full text on CDROM, presented San Francisco, CA, April 2001.
24. Maher M. Atwah and Johnnie W. Baker, "*An Associative Implementation of a Parallel Convex Hull Algorithm*", Proc. of the 15th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), full text on CDROM, presented San Francisco, CA, April 2001.
25. Michael Scherger, Jerry Potter, and Johnnie Baker, "*On Using UML to Describe the MASC Model of Parallel Computation*", Proc. of the 2000 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '2000), volume V, pages 2639-2645, presented Las Vegas, NV, June 2000.
26. Johnnie W. Baker and Mingxian Jin, "*Simulations of Enhanced Meshes with MASC, a MSIMD Model*", Proc. of the 11th IASTED International Conference on Parallel and Distributed Computing and Systems, pages 511-516, presented at Cambridge, MA, November, 1999.
27. Paul Durand, Rohit Pasari, Johnnie W. Baker, and Chun-che Tsai, "*An Efficient Algorithm for Similarity Analysis of Molecules*", Internet Journal of Chemistry (IJC), Vol. 2, Article 17, 16 pages,, Online by subscription at http://www.ijc.com/article/1999v2/17/. Unofficial copy at http://www.cs.kent.edu/~jbaker/paper, 1999.
28. Johnnie W. Baker and Mingxian Jin, "*Simulations Between Enhanced Meshes and the Multiple Associative Computing (MASC) Model*", Proc. of the 1999 Midwest Workshop on Parallel Processing (MWPP'99), presented at Kent, OH, August 1999.
29. Will C. Meilander, Jerry L. Potter, Kathy J. Liszka, and Johnnie W. Baker, "*Real-Time Scheduling in Command and Control*", in Proc. of the 1999 Midwest Workshop on Parallel Processing, (MWPP'99), presented at Kent, OH, August 1999.
30. Nael B. Abu-Ghazaleh, Philip A. Wilsey, Jerry Potter, Robert Walker, and Johnnie Baker, "*Flexible Parallel Processing in Memory: Architecture + Programming Model* ", Proc. of the

Third Petaflop Workshop, held in conjunction with Frontiers on Massively Parallel Computing, presented at Annapolis, MD, February 1999.

31. Maher M. Atwah and Johnnie W. Baker, "*An Associative Dynamic Convex Hull Algorithm*", Proc. of the Tenth IASTED International Conference on Parallel and Distributed Computing and Systems, pages 250-254, presented at Las Vegas, NV, October 1998.
32. Darrell Ulm and Johnnie Baker, "*Simulating PRAM with a MSIMD Model (ASC)*", Proc. of the International Conference on Parallel Processing, pages 3-10, presented at Minneapolis, MN, August, 1998.
33. Will C. Meilander and Johnnie W. Baker, "*ATC Architecture Computers –Yesterday, Today, Tomorrow*", 43rd Annual Air Traffic Control Association Fall Conference Proceedings, pages 91-95, 1998.
34. Yi Pan , Selim Akl, and Johnnie W. Baker, Co-editors, "*Computing on Bus-Based Architectures*", Parallel Processing Letters, Special issue, 8(2), 1998.
35. Mary Esenwein and Johnnie W. Baker, "*VLCD String Matching for Associative Computing and Multiple Broadcast Mesh*", Proc. of the IASTED International Conference on Parallel and Distributed Computing and Systems, pages 69-74, presented at George Washington University, October, 1997.
36. Jerry Potter, Johnnie Baker, Stephen Scott, Arvind Bansal, Chokchai Leangsuksun, and Chandra Asthagiri, "*ASC: An Associative Computing Paradigm, Associative Processing and Processors*", Associative Processing and Processors, *editors*: A. Krikelei and C.C.Weems, IEEE Computer Society Press, pages 188-194, 1997.
37. Maher M. Atwah, Johnnie W. Baker, and Selim Akl, "*An Associative Implementation of Classical Convex Hull Algorithm*", in Proc. of the Eighth IASTED International Conference on Parallel and Distributed Computing Systems, pages 435-438, presented George Washington University, October, 1996.
38. "Virtual Parallelism by Self Simulation of the Multiple Instruction Stream Associative Model", Darrell Ulm and Johnnie W. Baker, in *Proc. of the International Conference on Parallel and Distributed Processing Techniques and Applications*, pages 1421-1430, presented Sunnyvale, CA, August, 1996.
39. Darrell Ulm and Johnnie W. Baker, "*Solving a 2D Knapsack Problem on an Associative Computer Augmented with a Linear Network*", *Proc. of the International Conference on Parallel and Distributed Processing Techniques and Applications*, pages 29-32, presented Sunnyvale, CA, August, 1996.
40. Mark Merry and Johnnie W. Baker, "A Constant Time Algorithm for Computing the Hough Transform on a Reconfigurable Mesh", *Image and Vision Computing Journal*, vol. 14, 1996, pages 35-37, 1996.
41. Maher M. Atwah, Johnnie W. Baker, and Selim Akl, "*An Associative Implementation of Graham's Convex Hull Algorithm*", *Proc. of the Seventh IASTED International Conference on Parallel and Distributed Computing and Systems*, pages 273-276, presented at George Mason University, October 1995.
42. Mark S. Merry and Johnnie W. Baker, "*A Constant Time Sorting Algorithm for a Three-Dimensional Mesh and Reconfigurable Network*, Parallel Processing Letters, 5(3), pages 401-412, 1995.
43. Darrell Ulm and Johnnie Baker, "*Solving a Two-Dimensional Knapsack Problem on a Mesh with Multiple Buses*", Proc. of the International Conference on Parallel Processing, vol. 3, pages 168-171, paper presented in Wisconsin, August, 1995.
44. Mark S. Merry and Johnnie W. Baker "*A Constant Time Algorithm for the Channel Assignment Problem Using the Reconfigurable Mesh*", in Journal of Parallel Algorithms and Applications, Vol 6, pages 259-271, 1995.

45. Jerry Potter, Johnnie Baker, Stephen Scott, Arvind Bansal, Chokchai Leangsuksun, and Chandra Asthagiri, "*ASC: An Associative Computing Paradigm*", Special Issue on Associative Processing, *IEEE Computer*, 27(11), pages 19-25, November 1994.
46. Stephen Scott and Johnnie W. Baker , "*Embedding the Hypercube into the 3-Dimensional Mesh*" , Proceedings of the 4th Symposium on the Frontiers of Massively Parallel Computation, Edited by H. J. Siegel, pages 577-8, paper presented at Goddard Space Flight Center in McLean VA, October, 1992.
47. Johnnie W. Baker, Oberta A. Slotterbeck, and Richard Aron, "*Computing the Tsirelson's Space Norm*", Computer Aided Proofs in Analysis, Edited by Kenneth Meyer and Dieter Schmidt, The I.M.A. Volumes in Mathematics and Its Applications, Vol. 28, pages 12-21, 1991.
48. Johnnie W. Baker and Andrew Miller, "*A Parallel Production System Extending OPS5*", Proceedings of the 3rd Symposium on the Frontiers of Massively Parallel Computation, edited by Joseph JaJa, pages 110-118, paper presented at The University of Maryland at College Park, October, 1990.
49. Johnnie W. Baker, Oberta A. Slotterbeck, and Richard Aron, "*An Algorithm for Computing the Tsirelson's Space Norm*", , published as Appendix B in *Tsirelson's Space* by Peter Casazza and Thaddeus Shura, Lecture Notes in Mathematics, pages 159-203 (Appendix and all portions of the book, were refereed.) 1989.
50. Johnnie W. Baker and Oberta A. Slotterbeck, "*Providing a complex number environment for MACSYMA and VAXIMA*", Proceedings of the 1984 MACSYMA Conference at General Electric, Edited by V. Ellen Golden, pages 39-49, 1984.
51. John Warren Baker, C. Cleaver, and J. Diestel, Co-editors, "*Banach spaces of analytic functions*", Lecture Notes in Mathematics, Springer-Verlag, Vol. 604, 1977.
52. John Warren Baker and R. C. Lacher, "*Some mappings which do not admit an averaging operator*", Pacific Journal Mathematics, Vol. 62, pages 43-47, 1976.
53. John Warren Baker and John Wolfe, "*Averaging operators and C(X)-spaces with the separable projection property*", Canadian Journal Mathematics, 28(5), pages 897-904, 1975.
54. John Warren Baker, "*On the existence and uniqueness theorems of R. C. Pierce for extensions of zero-dimensional compact metric spaces*" , in Studies in Topology, edited by Starvakas and Allen, pages 29-42, Academic Press, 1975.
55. John Warren Baker, "*The separable projection property*", Proceedings of the Conference in Approximation Theory, Academic Press, pages 247-250, 1973.
56. John Warren Baker, "*Uncomplemented C(X)-subspaces of C(X)*", in Transactions American Mathematical Society, Vol. 186, pages 1-15, 1973.
57. John Warren Baker, "*Projection constants of C(X) spaces with the separable projection property*", Proceedings American Mathematical Society, Vol. 41, pages 201-204, 1973.
58. John Warren Baker, "*Dispersed images of topological spaces and uncomplemented sub-spaces of C(X)*", Proceedings American Mathematical Society, Vol. 41, pages 309-314, 1973.
59. John Warren Baker, "*Ordinal subspaces of topological spaces*", *General Topology and its Applications*, Vol. 3, pages 85-91, 1973.
60. John Warren Baker, "*Compact spaces homeomorphic to a ray of ordinals*", in Fundamenta Mathematicae, Vol. 76, pages 19-27, 1972.
    Note: The results in this paper are also presented in the book, *The Isometric Theory of Classical Banach Spaces*, by H. Elton Lacey, Springer-Verlag, pg 30-35, 1974.
61. John Warren Baker, "*Some uncomplemented subspaces of C(X) of the type C(Y)*", in *Studia* Mathematica, Vol. 36, pages 85-103. 1970.

Refereed Poster Presentations: (A few earlier posters missing)

1. Shannon Steinfadt and Johnnie Baker, "*SWAMP: Smith-Waterman on an Associative Multi-Processor*", Ohio Collaborative Conference on Bioinformatics (OCCBIO), Miami University, Oxford, OH, July 9-11, 2007.
2. Weiguo Fan, Xin Lin, Johnnie W. Baker and Chun-che Tsai, "*Chemical Molecular Similarity Analysis and its Applications*", Ohio Collaborative Conference on Bioinformatics Conference (OCCBIO'07), Poster and abstract in conference proceeding on p28, Oxford, Ohio, July 9 - 11, 2007;
3. Weiguo Fan, Xin Lin, Johnnie Baker, Chun-che Tsai, "*Structure-Activity Relationship Analysis of Chemical Compounds with Antioxidant Activity*", 2006 ISCB 4th Annual Rocky Mountain Bioinformatics Conference, Aspen/Snowmass, Colorado, (Poster and abstract), December 1-3, 2006.
4. Shannon Steinfadt and Johnnie Baker, "*Local sequence alignment for an associative model of parallel computation*", Ohio Collaborative Conference on Bioinformatics (OCCBIO 2006), June 28-30, 2006.
5. Weiguo Fan, Yu-Wei Hsieh, Xin Lin, Boren Lin, Johnnie W. Baker and Chun-che Tsai, "*Structure-Activity Relationship (SAR) Analysis using Structure-Activity Maps (SAMs)*", *OCCBIO'06* Ohio Collaborative Conference on Bioinformatics Conference, Athens, Ohio, USA, June 28-30, 2006.
6. Weiguo Fan, Xin Lin, Yu-Wei Hsieh, Boren Lin, Johnnie W. Baker and Chun-che Tsai, "*Chemical Structure-Activity Relationship Visualization Using Structure-Activity Maps*", 2005 IEEE Computational Systems Bioinformatics Conference, Stanford University, California, USA, August 8 - 11, 2005.

Refereed or Invited Presentations made Baker:

2010 Mike Yuan, Johnnie Baker, Frank Drews, Lev Neiman, and Will Meilander, "*An Efficient Associative Processor Solution to an Air Traffic Control Problem*", Large Scale Parallel Processing IEEE Workshop at the International Parallel and Distributed Computing Symposium (IPDPS2010), published on IPDPS-2010 CDROM and in the IEEE Digital Library with other IPDPS-2010 publications, April 2010.

2004 Johnnie Baker, "*SIMDs Revisited*", Invited Colloquium, Computer Science Department, Old Dominion University, Norfolk, VA., Scheduled, March 3, 2004.

2003 Will Meilander, Johnnie Baker, and Mingxian Jin, "*Importance of SIMD Computation Reconsidered*", Proc. of the 17th International Parallel and Distributed Processing Symposium (IEEE Workshop on Massively Parallel Processing), abstract on page 266, full text on CDROM, presented at Nice, France, April 2003.

1999 Johnnie W. Baker and Mingxian Jin, "*Simulations of Enhanced Meshes with MASC, a MSIMD Model*", Proc. of the 11th IASTED International Conference on Parallel and Distributed Computing and Systems, pages 511-516, presented at Cambridge, MA, November, 1999.

1999 Johnnie W. Baker and Mingxian Jin, "*Simulations between Enhanced Meshes and the Multiple Associative Computing (MASC) Model*", Proc. of the 1999 Midwest Workshop on Parallel Processing (MWPP'99), presented at Kent, OH, August 1999.

1998 Darrell Ulm and Johnnie Baker, "*Simulating PRAM with a MSIMD Model (ASC)*", Proc. of the International Conference on Parallel Processing, pages 3-10, presented at Minneapolis, MN, August, 1998.

1996 Johnnie W. Baker, "*An Associative Model of Computation*", Invited Colloquium presented to the Department of Computing and Information Science at Queens University, Kingston, Ontario (Canada)

1996 Johnnie W. Baker, "*An Associative Model of Computation*", Invited Colloquium presented to the Department of Computer Science at Old Dominion University in Norfolk, VA.

1995 Johnnie W. Baker, "*An Associative Model for Parallel Computation*", presented at the special session titled "Foundations and Mathematical Aspects of Computer Science" Fall 1995 Regional Meeting of The American Mathematical Society at Kent State.

1992 Stephen Scott and Johnnie W. Baker , "*Embedding the Hypercube into the 3-Dimensional Mesh*" , Proceedings of the 4th Symposium on the Frontiers of Massively Parallel Computation, Edited by H. J. Siegel, pages 577-8, paper presented at Goddard Space Flight Center in McLean VA, October, 1992.

1990 Johnnie W. Baker and Andrew Miller, "*A Parallel Production System Extending OPS5*", Proceedings of the 3rd Symposium on the Frontiers of Massively Parallel Computation, edited by Joseph JaJa, pages 110-118, paper presented at The University of Maryland at College Park, October, 1990.

1985 John Warren Baker, Oberta Slotterbeck, and Richard Aron, "*An Algorithm for Tsirelson Space Norm*", International Conference on Banach Spaces and Classical Analysis, Special Session on Using Computers in Mathematical Research.

1985 John Warren Baker, Oberta Slotterbeck, and Richard Aron, "*A Computer Algorithm for Tsirelson Space Norm*", Invited address at the MAA Sectional Meeting at the University of Akron, Special Session on Scientific Computing.

1974 John Warren Baker, "*Projection Constants of C(X) Spaces with the Separable Projection Property*", Invited colloquium, Pennsylvania State University, Mathematics Department.

1974 John Warren Baker, "*Extensions of O-dimensional Metric Spaces*", Paper presentation, Annual General Topology Conference, University of North Carolina at Charlotte.

1974 John Warren Baker, "*Extensions of O-dimensional Metric Spaces*", Paper presentation, International Congress of Mathematicians, Vancouver, Canada.

1974 John Warren Baker, "*Extension of Homeomorphisms over Metric Spaces*", Invited speaker, Regional Functional Analysis Conference, Ohio State University.

1974 John Warren Baker, "*Ordinals as Topological Spaces*", Invited speaker, Regional Topology Conference, Carnegie- Mellon University.

1973 John Warren Baker, "*The Separable Projection Property*", Invited Speaker, Symposium on Approximation Theory, University of Texas at Austin.

1973 John Warren Baker, "*The Separable Projection Property*", Conference on Best Approximation and Functional Analysis, Kent State University.

Refereed or Invited Presentations (Presented by a colleague; No published paper):

2008 Shannon Steinfadt and Johnnie Baker, "*GPU Computing for the SWAMP Sequence Alignment*", Presentation at the Ohio Collaborative Conference on Bioinformatics Conference (OCCBIO'08). June, 2008, presentation by Shannon Steinfadt

1999 Will Meilander, Johnnie Baker, and Jerry Potter "*In Air Traffic Control - the Solution is the Problem*", The 1st International Workshop on Real-Time Mission Critical Systems, Theme: Grand Challenge Problems, Phoenix AZ, Copies of paper distributed at workshop, presentation by Will Meilander.

1997 Chun-che Tsai, K.J. McCabe, P. J. Durand, M.L. Lesniewski, and J. W. Baker, "*QSAR Studies of Nucleoside Analogs with Anti-HIVF Activity*", Tenth International Conference on Antiviral Research, Atlanta, GA, April 6-11, 1997, Presentation by Chun-che Tsai

1996 Chun-che Tsai, P.J. Durand, K.J. Taylor-McCabe, and J.W. Baker. "*Structure-Activities Relationship Studies of Nucleoside Analogs with Anti-HIV Activity*", Ninth International Conference on Anti-viral Research, held in Urabandai, Fukushima, Japan, May 19-24, 1996, Presentation was by Prof. Tsai.

1995 Chun-che Tsai, P. J. Durand, J. W. Baker "*A Topological Approach to Molecular Similarity Analysis and its Application to QSAR Study of Nucleoside Analogs with anti-HIV Activity*", Special Session on Mathematical and Computational Chemistry and Biology, Fall 1995 Regional Meeting of The American Mathematical Society at Kent State University. Presentation was by Prof. Tsai.

1995 Chun-che Tsai, P. J. Durand, K. J. McCabe, and J. W. Baker, "*QSAR Study IV of Nucleoside Analogs with Anti-HIV Activities Using Molecular Similarity Analysis and Structure-Activity Maps*". Presented at the 1995 U.S. Army Edgewood Research Development and Engineering Center Scientific Conference on Chemical and Biological Defense Research, held at the Aberdeen Proving Ground, MD, Nov. 14-17, 1995, Presentation was by Prof. Tsai.

1995 Chun-che Tsai, P. J. Durand, K. J. McCabe, and J.W. Baker, "*QSAR Study III of Nucleoside Analogs with Anti-HIV Activities Using Molecular Similarity Analysis and Structure-Activity Maps*". Presented at the 210th American Chemical Society National Meeting, held in Chicago, Illinois, August 20-24, 1995. Invited address, Presentation was by Prof. Tsai.

1995 Chun-che Tsai, P. J. Durand, K. J. McCabe, and J.W. Baker, "*QSAR Study II of Nucleoside Analogs with Anti-HIV Activities Using Molecular Similarity Analysis and Structure-Activity Maps*",. Presented at the Gordon Conference on Quantitative Structure-Activity Relationships, held in Tilton, NH, August 6-11, 1995, Presentation was by Prof. Tsai.

1995 Chun-che Tsai, P. J. Durand, K. J. McCabe, and J.W. Baker "*QSAR Study I of Nucleoside Analogs with Anti-HIV Activities Using Molecular Similarity Analysis and Structure-Activity Maps*". Presented at the Eighth International Conference on Antiviral Research, held at Santa Fe, New Mexico, April 23-28, 1995, Presentation was by Prof. Tsai.

1989 John Warren Baker, Oberta Slotterbeck, and Richard Aron, "*Computing the Tsirelson Space Norm*", Long presentation , Computer Aided Proofs in Analysis, University of Cincinnati. Presenter was R. Aron.

1985 Oberta Slotterbeck and Johnnie Baker, "*Providing a Complex Number Environment for MACSYMA and VAXIMA*", Invited MAA Sectional Meeting at The University of Akron, Special Session on Scientific Computing, Presenter was O. Slotterbeck.

1984 Oberta Slotterbeck and Johnnie Baker, "*Computer Algebra Systems: Multi-disciplinary Research Tools*", Invited Colloquium to College of Sciences at the University of Texas at Austin (sponsored by the Computer Science Department at U.T.). Presenter was O. Slotterbeck.

SUPERVISED PRESENTATIONS AND POSTERS BY MY STUDENTS (Refereed unless at Kent State)

Student Presentations:

1. Shannon Steinfadt, "*Harnessing Associative Computing for Sequence Alignment with Parallel Accelerators*" Doctoral Research Showcase at the International Conference for High Performance Computing, Networking, Storage and Analysis (SC '08), Austin, Texas, November 20, 2008, *~25% acceptance rate*
2. Shannon Steinfadt, Plenary Session: "*GPU Computing for the SWAMP Sequence Alignment*" at the Ohio Collaborative Conference on Bioinformatics, University of Toledo, Toledo, Ohio, June 3, 2008
3. Shannon Steinfadt, "*Massively Parallel Sequence Alignment in Bioinformatics: SWAMP: Smith-Waterman using Associative Massive Parallelism*" ACM Student Research Competition Semi-Finalist Talk, Grace Hopper Conference, Orlando, FL October 18, 2007
4. Shannon Steinfadt, "*SWAMP: Smith-Waterman on an Associative Multi-Processor*", Ph.D. Forum at Grace Hopper Conference October 19, 2007

Student Posters:

1. Each of Wittaya Chantamas Weiguo Fan, Rashid Muhammad, Shannon Steinfadt, and Mike Yuan prepared a poster for the Computer Science Poster Day Presentations 0n May 1, 2009
2. "*GATOR and SWAMP: GPU Computing for Sequence Alignment*" at the Grace Hopper Celebration of Women in Computing, Keystone, Colorado, October 1, 2008 and at the 3rd Biannual Ohio Celebration of Women in Computing (OCWIC), Perrysville, Ohio, March 27, 2009
3. Shannon Steinfadt, "*Massively Parallel Sequence Alignment for the Bioinformatics Domain*" at the 22nd International Parallel and Distributed Processing Symposium, (IPDPS TCPP Ph.D. Forum), Miami, Florida, April 17, 2008.
   Also, at the 3rd Annual Computer Science Poster Conference, Kent State University, Kent, Ohio, April 11, 2008 -----*First Place Winner*
4. Additionally, each of Wittaya Chantamas Weiguo Fan, Rashid Muhammad, and Mike Yuan prepared a poster for the Computer Science Poster Day Presentations on Apri1 11, 2008

5. Wittaya Chantamas, "*Design and Implementation of a Scalable Multiple Associative SIMD Model to Support the Concurrent Executions of Data Parallel Branches*", TCPP International Parallel and Distributed Processing Symposium (IPDPS) 2008 Ph.D. Forum, Miami, FL, 4/14-4/18, 2008.
6. Shannon Steinfadt, *Massively Parallel Sequence Alignment for the Bioinformatics Domain*. TCPP International Parallel and Distributed Processing Symposium (IPDPS) 2008 Ph.D. Forum, Miami, FL, 4/14-4/18, 2008.
7. Shannon Steinfadt, *Massively Parallel Sequence Alignment in Bioinformatics: SWAMP: Smith-Waterman using Associative Massive Parallelism.* Poster session and ACM Student Research Competition. Grace Hopper Conference, Orlando, FL October 17-20, 2007.
   ----- Selected as a semi-finalist in the ACM Student Research Competition.
8. Shannon Steinfadt, "*SWAMP: Smith-Waterman on an Associative Multi-Processor*" at the Ohio Collaborative Conference on Bioinformatics, Miami University, Oxford, Ohio, July 9-11, 2007 ----- *Best Overall Poster*
9. Shannon Steinfadt, *Massively Parallel Programming for Local Sequence Alignment in Bioinformatics*, Poster Conference and Awards Ceremony, Dept. of Computer Science, Kent State University, April 13, 2007. ----- *Second place winner*.
10. Rashid Muhammad, "*Execution Time Analysis of a Parallel Euclidean Steiner Tree Algorithm*", The Second Computer Science Poster Conference, April 13, 07, Kent State University, OH.
11. Additionally, both Wittaya Chantamas and Weiguo Fan prepared a poster for the Computer Science Department Poster Day Presentations on April 13. 2007.
12. Each of Wittaya Chantamas, Weiguo Fan, Rashid Muhammad, and Shannon Steinfadt prepared a poster for the Computer Science Poster Day Presentations on April 21, 2006.

RESEARCH AWARDS AND GRANT ACTIVITY

2011 — In Preparation: Johnnie Baker (Co-PI) at Kent State, Frank Drews (Co-PI) at Ohio University, Will Meilander (Consultant), Mike Yuan, *A Solution to ssome Air Traffic Control (ATC) Problems using Associative Computing and 4D Projection techniques*, Will be submitted to FAA. Related proposals may be submitted to other groups such as the Dept. of Defense.

2011 — Participating in the KSU Proposal to FAA for a Center on Aviation Safety. The title of my research in this project is under the title "NextGen 4-D Trajectory Management Projects.

2010 — CI-TEAM Implementation Project: Creating a Shared Multi-disciplinary Program in Bioinformatics". National Science Foundation. F. Drews (PI), Z-H. Dui, S.R. Gadagkar, S. Gordon, H. Piontkivska (co-PIs); J. Baker (colleague in companion discipline). Amount requested $1,000,000 (KSU share $ 171,493 to support 2 Senior Personnel & one BSCI GA for 3 years). Submitted April 27, 2010, Pending

2009 — CPATH Project: Computational Thinking in Bioinformatics. National Science Foundation. L. Welch (PI, OU), Z. Duan (Co-PI, UA), Steve Gordon (co-PI, OSC), H. Piontkivski (Co-PI, KSU); J. Baker (senior personnel). Amount requested $792,080 (KSU share $172,083). Submitted April 26, 2009, Not funded

2008 Johnnie Baker and Shannon Steinfadt, Received two NVIDIA Tesla C870 parallel accelerator boards valued at $3000 and two GeForce 8800 GT cards through NVIDIA's Professor Partnership program to support the research of my Ph.D. student, Shannon Steinfadt.

2007 Johnnie Baker, Received research support award from ClearSpeed Technology in December 2007 of a ClearSpeed Advance X620 parallel accelerator board valued at $6,500 and a $9,000 donation toward purchase of a software development toolkit ($10,000 cost) to support ongoing research with my students involving real-time computing (air traffic control) and genome sequence matching. Total value of gift was $15,500.

2007 Johnnie Baker, Received $4,627 from a departmental OBR Equipment grant to fund the purchase of a server to house three boards listed in the next two research awards and also to purchase a ClearSpeed software development kit at the reduced cost of $1,000.

2005 Johnnie Baker, Chun-che Tsai, Robert Walker, "*Using Parallel Computing Systems to Develop a Molecular Similarity Knowledgebase for Drug Design*" OBR Research Challenge, October 2005, $60,000 for Jan'06 –Jan'07, Not Funded

2004 Johnnie Baker, Chun-che Tsai, Robert Walker, "Accelerating Performance in Molecular Similarity Analysis for Drug Design Using Parallel Computing Systems", OBR Research Challenge, OBR Research Challenge, October 2004, $60,000 for FY 05/06, Not Funded

2004 Johnnie Baker (PI), Jerry Potter, Chun-che Tsai, Robert Walker, Michael Kleeman (President of Assabet Ventures, LLC), "*Commercialization of Applications Using SIMD Data-Parallel Computers*", , Ohio Third Frontier Action Fund, $1,910,021, funds requested for one year (2004), Joint request from Kent State University and Assabet Ventures LLC, Proposed project is a joint collaboration between Kent State University and Assabet Ventures aimed at commercializing the application of molecular data mining using SIMD data-parallel computers. Not funded.

2003-5 PI on OBR sponsored Ohio Line Item grant, "*Computer Science Graduate Enhancement*", joint with CS/CSE Departments at OSU, UC, and WSU for $625,800 for each institution for both AY 2003-4 and AY2004-5. (KSU PI on this grant.) Funded.

2003-4 Chun-che Tsai (Co-PI), Javed I. Khan (Co-PI), and Johnnie W. Baker (Co-PI), "*A Computer-Assisted Exploration and Visualization System for Molecular Design and Drug Discovery*", 2003 Research Challenge Proposal in category of Biotechnology/Bioinformatics/Biopreparedness, Requested $54,286. Not funded.

2003 Johnnie Baker (Co-PI), Chun-che Tsai (Co-PI), Robert Walker, Jerry Potter, "*Using Clusters of Workstations for Molecular Similarity Analysis with Applications in Drug Design*", 2003 Research Challenge Proposal, $59,865 requested for 1 year. Not funded.

2003 Ray Hoare (PI) at University of Pittsburgh. Co-PIs were Professors Walker and Potter at KSU, Professors Kourtev, and Curran of the University of Pittsburgh, Professors McHugh and Dietrich of the CERT Coordination Center at CMU, and Professor Kobourov of the University of Arizona "*Collaborative Research ITR: Efficient Searching of Terabit Data Sets using Hardware: Applications to Network Security, VSLI Design Automation, and Air Traffic Control*" submitted to NSF as a "Medium ITR proposal" for $85,051. Not funded.

2002 Johnnie Baker and Jerry Potter, "*Equipment for Associative Laboratory – Creating Cluster of 10 Zephyrs*", $10,000 proposal submitted to Department OBR Budget Committee for Competitive Equipment Grant, Approved December 20, 2002. Funded.

2002 Chun-che Tsai (PI), Johnnie Baker (Co-PI), Javed Khan (Co-PI), "Accelerating Drug Discovery using Cheminformatics", Ohio Board of Regents Research Challenge, $100,372 funds requested for 2 year period. Not funded.

2001-3 Johnnie Baker, Kent State PI, "*Computer Science Graduate Enhancement*", OBR sponsored Ohio Line Item grant, joint with CS/CSE Departments at OSU, UC, and WSU for $774,857 for each institution for both AY 2001-2 and AY 2002-3. Funded.

2001 Johnnie W. Baker (Co-PI), Javed Khan (Co-PI), and Chun-che Tsai (Co-PI), "*Accelerating Drug Discovery with Cheminformatics: Integrated Molecular Modeling, Virtual Molecule Design, Chemical Information/Knowledge Mining and Discovery*", $100,876 requested for 2002-2003. Not funded.

1999 Johnnie Baker, Robert Walker and Jerry Potter Co-PIs at Kent State University, with Professor Wilsey at University of Cincinnati and Professor Abu-Ghazaleh at SUNY Binghamton as subcontractors. "*Effective Control-Parallel, Data-Parallel Computing*", Joint proposal in December to the National Science Foundation. Requested $930,985 over 3 years starting in 7/1/00. Not funded.

1998 Professor Phillip Wilsey (PI) at the University of Cincinnati with Professors Baker, Potter, and Walker of KSU and Professor Abu-Ghazaleh at SUNY Binghamton as subcontractors. "*PPIM: A Flexible Parallel Processing in Memory System for Data Intensive Applications*", Joint proposal in December for three years for $1,935,360 to the Defense Advanced Research Projects Agency (DARPA). Evaluated as "selectable", but not funded due to "Insufficient funds".

1998 Robert Walker (PI), Johnnie Baker (Co-PI), and Jerry Potter (Co-PI) at Kent State University and with Professor Wilsey at University of Cincinnati and Professor Abu-Ghazaleh at SUNY Binghamton as subcontractors. "*Architectures for Effective Parallel Processing in Memory*", Joint proposal in November to the National Science Foundation. Not funded, but received reviews of Very Good, Good, Good-Fair, and Good-Fair.

1998 Profs. Jerry Potter and Robert Walker from Kent State University and Prof. Phillip Wilsey from University of Cincinnati, A joint proposal to the Ohio Board of Regents CS Enhancement Initiative, "*A Control Parallel, Data Parallel Computer*", Funded for $80,000 for a period of two years.

1997 Johnnie Baker, representative from Kent State University for a joint proposal for the enhancement of computer science Ph.D. programs within Ohio. Submitted to the Ohio Board of Regents (OBR). The joint proposal was to the OBR for $4,000,000 per year, with $1,000,000 annually for Kent State. The proposal was accepted by the OBR and submitted to the State Legislature as a line item on the biennial higher education budget. Funded at the 50% level.

1997 Chun-che Tsai and Johnnie Baker, Proposal to Pharmacia & Upjohn Inc. for $6000 to support my student, Paul Durand, for his continued work on the software for molecular modeling following the completion of his thesis work. Funded.

1997 Chun-che Tsai (Co-PI) and Johnnie Baker (Co-PI), "Algorithms, Techniques, and Software Development for Molecular Modeling", Joint proposal with Chun-che Tsai from Dept. of Chemistry, OBR Research Challenge Grant. Not funded.

1997 "Design of Parallel and Distributed Computational Tools for Physical/Life Sciences", joint proposal with Case Western Reserve, Cleveland State, and University of Akron. Not funded.

1997 "PADNet – Statewide Parallel and Distributed Network", $1,873,285 joint proposal with University of Cincinnati, Cleveland State University, Miami University, Ohio State University, Wright State University, to OBR Investment Fund Competition. Not funded.

1996 Jerry Potter (PI) and Johnnie Baker (Co-PI), "*Heterogeneous Distributed Associative Computer*", proposal submitted to NSF Petaflop Computing Design, New Technologies Program, Division of Advanced Scientific Computing, NSF 96-38. Not funded.

1992 Jerry Potter was PI and all CS faculty participated. I contributed featured research projects and helped develop proposal for "Problem-Solving Environment with Heterogeneous Computing". Proposal submitted to NSF CISE Small Scale Institutional Infrastructure Program for $1,822,467. Received site visit. My students and I contributed three posters on research to poster presentation. Received report in July 1992 stating we were in top five and would probably be funded. Not funded due to unexpected cutbacks in NSF funds.

1990 I wrote a proposal for purchasing a parallel SIMD Computer for use in both undergraduate education and research. This was funded with competitive funds the university set aside to purchase equipment that supported undergraduate education and was used to purchase a WaveTracer parallel SIMD computer, which provided many years of support for both undergraduate education and departmental research. Funded

1981-82 PIs: Richard S. Varga and Paul S. Wang wrote grant for summer support to support research on applications of numerical analysis and computer symbolic computation. I was funded to work on proposed research. Funding Information: DOE Grant DE-AS02-76ER02075.

1978 Summer Research Appointment, Kent State University

1976 Joe Diestel (PI), Johnnie Baker and Charles Cleaver Co-PIs, Grant to cover cost of conference cost including summer support for Diestel, Baker, and Cleaver as Co-Directors for the conference, *Banach Spaces of Analytic Functions*, Kent State University.

1974 Summer Research Appointment, Kent State University

1970 Summer Research Grant, Florida State University.

DOCTORAL STUDENTS SUPERVISED

Current PhD Students:

1. Mike Yuan: *Implementing a SIMD Air Traffic Control System Prototype on the ClearSpeed Accelerator.* Started work around Fall 2008, Defended Candidacy on Dec 16,2009
2. Weiguo Fan – (Dissertation co-advisor is Chun-che Tsai, Chemistry). Dissertation Title: *Using Molecular Similarity Analysis for Structure-Activity Relationship Studies*. Probably started during Fall 2000. Defended his candidacy on Sept. 6, 2002. Defended research in his dissertation on March 23, 2010, but must submit the research in his dissertation to appropriate scientific journals prior to graduation. He is making excellent progress and is expected to complete this work before May 2011.

Graduated PhD Students:

1. Shannon Steinfadt – Dissertation Title: *Smith-Waterman Sequence Alignment For Massively Parallel High-Performance Computing Architectures*. Started about Fall 2002. Defended her candidacy on December 15, 2004. Defended her dissertation on March 18, 2009.
2. Wittaya Chantamas – Dissertation Topic: *A Multiple Associative Model to Support Branches in Data Parallel Applications using the Manager-Worker Paradigm*, Expected to complete in Fall 2009.
3. Rashid Bin Muhammad: DissertationTitle: *Parallel and Network Algorithms and Applications for Steiner Trees and Voronoi Diagram*, Defended candidacy in Sept. 9, 2004 with me as a co-advisor. Switched topics and to me as an advisor around Fall 2006. Defended his dissertation on October 20, 2009
4. Michael Scherger – Dissertation: *An Object Model Framework, Runtime Environment Support, and Database System Software for a Multiple Instruction Stream Associative Model of Parallel Computation*, Co-advised with Jerry Potter, Successfully defended on October 24, 2005.
5. Mingxian Jin – Dissertation: *Exploring the Power of the MASC Model by Simulations and Real-time Applications"*, graduated December 2004
6. Maher Atwah – Dissertation: *Parallel Computation of the Static and Dynamic Convex Hull*, defended successfully April, 2001.
7. Darrell Ulm - Dissertation: *The Power of the ASC Associative Computing Model Through Simulations PRAM and Virtual Parallelism*, defended successfully December, 1995.
8. Mark Merry - Dissertation: *Parallel Computational Geometry on the Reconfigurable Mesh*, defended successfully June, 1993.

MASTER THESIS STUDENTS SUPERVISED

Current:

1. Sagar Panchariya - Thesis Topic: Algorithms and implementation for Collision Detection and Avoidance, Started around Summer 2009
2. Pallav Laskar Thesis Topic: Implementing of software for visualization of plane locations for controllers (and perhaps an additional task such as visualization for cockpit display). Started around Summer 2009

Completed: (Several jointly-sponsored theses not listed due to missing information)

1. Jeffrey Daniel Frey, *Finding Song Melody Similarities Using a DNA String Matching Algorithm*, 120 pages, Defended January 17, 2008, Graduated May 2008.
2. Xin Lin, *Investigating Chemical Structural-Activity Relationships using Molecular Similarity Analyses and Structure Activity Maps*, 165pp, Defended March 15, 2007, Graduated May 2007, (Co-sponsored with Dr. Chun-che Tsai in Chemistry Dept.).
3. Rashid Bin Muhammad, *The Parallel Voronoi Diagram on Hypercube Model of Computation,* Sept. 2003. (Co-sponsored with Feodor Dragan).
4. Yu-Wei Hsieh, *Chemical & Molecular Visualization Using Similarity Analysis and Structure Activity Maps*, April 1, 2003, Co-sponsored with Chun-che Tsai).
5. Rohit Pasari, *Visualization and Reduction Enhancement Algorithms for Topological Similarity Analysis of Molecules*, May, 1999. (Co-sponsored with Chun-che Tsai, Chemistry).
6. Amrish Lal, *A Database Query Engine for XML Documents Using XQL Query Language*, (Co-sponsored with Will Meilander), May 1999.
7. Kung-Ming Liu, *Composition of Kalman and Heuristic Tracking Algorithms for Air Traffic Control*, May, 1999. (Co-sponsored with Will Meilander).
8. Lu Qian, *Complexity Analysis of an Air Traffic Control System Using an Associative Processor*, (Co-sponsored with Will Meilander), December, 1997.
9. Paul Durand, *An Improved Program for Topological Similarity Analysis of Molecules*, January, 1996. (Co-sponsored with Chun-che Tsai, Chemistry).
10. Melissa Wagoner, *A Case-Based Reasoning Expert System Useful in Aiding Veterinary Diagnosis*, 1996.
11. Tom Head, *Implementation of a Parallel Production System*, 1996.
12. Mary Esenwein, *String Matching Algorithms for an Associative Computer*, 1995.
13. Maher Atwah, *Computing the Convex Hull on the Associative Model*, July, 1994.
14. Dale Haverstock, *An Assembler for the STARAN Parallel Computer*, August, 1994. (Co-sponsored with J. Potter; Directed while Potter was on extended leave for about 2 years.).
15. Stephen Scott, *Embedding the Hypercube and Shuffle-Exchange into the 3-Dimensional Mesh*, August 1992.
16. Jon Wiebrecht, *Parallel SIMD Algorithms and Implementations for the Traveling Salesperson Problem and Assignment Problem*, May, 1992.
17. Loren Pfeiffer, *A Default Theory Question Answerer Using Weak Model Elimination*, May, 1991.
18. Julia Liem Lee, *Developing Parallel SIMD Algorithms for the Traveling Salesman Problem*, November, 1989, (Co-sponsored with O. Slotterbeck).
19. Sirirat Viseshakul, *Developing and Testing a Software System to Track and Monitor Air Traffic*, October, 1989, (Co-sponsored with W. Meilander).
20. Kenneth Atchinson, *Development of a Portable Parallel Processor Using SIMD Architecture*, August, 1989.
21. Andrew Miller, *A Parallel Production System*, May, 1989.
22. John Michalakes, *STARAN-VAX Interface Under Berkeley Unix, 4.3 BSD*, November, 1988.
23. Steven Talus, *Parallel Approaches to the Zero-One Knapsack Problem*, July, 1988. (Co-sponsored with O. Slotterbeck).
24. Mohamed O. Rayes, *Developing a Complex Number Environment within MACSYMA*, May, 1988.

SERVICE

PROFESSIONAL MEMBERSHIPS

Association of Computing Machinery – 1981 to present
IEEE Computer Society – 1981 to present
Sigma Xi – elected to this scientific research honorary in 1968
CVACM (Cuyahoga Valley ACM) Chapter – 1975- 1996
SIGSAM (Special Interest Group in Symbolic and Algebraic Manipulation) 1980-84
American Mathematical Society 1967-1981
Mathematical Association of America 1967- 1981

SERVICE TO THE PROFESSION

Editorships, Refereeing, Reviews, and Evaluations:

- Member of the program committee of the workshop on the IEEE Parallel Computing and Optimization Workshop (PCO) that meets at International Parallel and Distributed Processing Symposium ((IPDPS). Its first meeting will be at IPDPS in May 2011 and I will review at least 3 papers for PCO-11.

- In January 2009, I served as an outside reviewer for Professor Frank Drews for his tenure review and application for promotion to associate professor in the EECS Department of Ohio University.

- On the International Program Committee member for IASTED International Conference on Parallel and Distributed Computing and Networks (PDCN) since 2004.

- On the International Program Committee for IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS) since 1998.

- Based on above and as documented in the next section, I have regularly been on the organizing or steering committee of a number of workshops or conferences. Among other duties, I have refereed a lot of papers on an annual basis for these workshops and conferences.

- Pre-revision survey for Addison Wesley for the graduate textbook, *Introduction to Parallel Computing* by Grama/Kumar/Gupta/Karypis in June 2007. This is probably the most widely adopted book currently for graduate courses for parallel computing.

- Annually referee several papers for various journals or conferences other than those listed above. These include the Journal of Parallel and Distributed Computing, International Journal of Computers and Application, Parallel and Distributed System, The International Conference on Parallel Processing (ICPP), Frontiers of Massively Parallel Computation, The International Conference on Parallel Processing, and CONPAR.

- In August 2007, Nance College of Business Administration at Cleveland State University requested that I make an in-depth review of the vita and papers of Dr. Victor Matos, with regard to his qualifications for promotion to full professor in their Department of Computer and Information Science.

- Editor for the journal, *Parallel Processing Letters*, published by World Scientific Publishers. 1991–2006. Handled a large number of papers annually

- In September 2005, served as an outside evaluator for the promotion of Dr. Julie Barnes to full professor in the Computer Science Department at Bowling Green University.

- Served as an outside reviewer for Professor Yi Pan in August 2004 for his promotion to full professor in the Computer Science Department at Georgia State University. Professor Yi Pan had over 100 refereed publications in professional journals and conferences.

- In February 2003, evaluated Stefan D. Bruda's application for a Canadian Academic Research grant. He is a professor at Bishop's University in Sherbrooke, Quebec.

- In 1995, I was one of two referees selected to evaluate and make recommendations concerning some problems at the Computer Science Department at Central Michigan University (CMU).
  - Requested by their Dean of Arts and Sciences due to some long-term and severe internal department problems
  - Our report provided our in-depth analysis of the departmental problems.
  - Additionally, the report contained specific and detailed recommendations for corrective actions for both the department and the college administration to follow in dealing with these department problems.
  - Further, we identified specific and severe penalties that we recommended be applied if the remedial policies adopted continued to be ignored by the majority of the faculty.
  - A year later, the chair of this department informed us that the department had made a major recovery, thanks to our extensive and very strict recommendations.

- Have served as a referee for a number of advanced textbooks including the following well-known texts*:*
  - *Parallel Computing: Theory and Practice* by Michael Quinn (McGraw Hill. 1994),
  - *Artificial Intelligence* by Patrick Winston (Addison Wesley, 1992),
  - *Artificial Intelligence: A Knowledge-Based Approach* by Morris Firebaugh (Boyd & Fraser, 1988),
  - *Distributed Algorithms* by Nancy Lynch (Morgan & Kaufmann, 1996).

- Was one of the two principal referees for the advanced textbook, *Parallel Computation: Models and Methods* by Selim Akl (Prentice Hall, published 1997).

- One of three editors for a 1998 special issue of the journal, *Parallel Processing Letters*, about computing on bus-based architectures.

Professional Conference and Workshop Organizing:

2010 Member of the Steering Committee for the Workshop on Large-Scale Parallel Processing, (LSPP) at the IEEE/ACM sponsored International Parallel and Distributed Processing Symposium (IPDPS), Atlanta, Georgia, April 23, 2009

2009 Member of the Steering Committee for the Workshop on Large-Scale Parallel Processing, (LSPP) at the IEEE/ACM sponsored International Parallel and Distributed Processing Symposium (IPDPS), Rome, Italy, May 29, 2009.

2008 Member of the Steering Committee for the Workshop on Large-Scale Parallel Processing, (OSPP) at the IEEE/ACM sponsored International Parallel and Distributed Processing Symposium (IPDPS), Miami FL, April 18, 2008.

2007 Member of the original 2007 Organizing Committee for the Large Scale Parallel Processing (LSPP) Workshop that meets annually at the IEEE/ACM sponsored International Parallel and

Distributed Symposium (IPDPS). This workshop was created to replace and broaden the scope of the earlier Workshop on Massively Parallel Processing.

2007 Co-chair of a special session on Massively Parallel Processing at the Workshop on Advances in Parallel and Distributed Computing Models, held at the IEEE International Parallel and Distributed Processing Symposium, Long Beach CA, March 26, 2007.

2005 Member of Organizing Committee and Steering Committee, Workshop on Massively Parallel Processing, held at the IEEE International Parallel and Distributed Processing Symposium, Denver Colorado, April 8, 2005.

2004 General Co-chair (with Robert Walker), IEEE Workshop on Massively Parallel Processing, held at the International Parallel and Distributed Processing Symposium, Santa Fe, NM, April 30, 2004

2003 General Co-chair (with Robert Walker), IEEE Workshop on Massively Parallel Processing, held at the International Parallel and Distributed Processing Symposium, Nice France, April 26, 2003.

2002 Founder and General Chair, IEEE Workshop on Massively Parallel Processing, held at the International Parallel and Distributed Processing Symposium, Ft. Lauderdale, FL.

1999 Vice-Chair of the 1999 Midwest Workshop on Parallel Processing (MWPP'99).

1997-9 Steering Committee Member for the IASTED International Conferences on Parallel and Distributed Computing and Systems (PDCS).

1995 The American Mathematical Society Regional Meeting, Kent State University, Co-organizer with Meera Sitharam of a special session titled "Foundations and Mathematical Aspects of Computer Science".

1985 International Conference on Banach Spaces and Classical Analysis at Kent State University. Organized a special session titled "Using Computers in Mathematical Research".

1979 International Conference in Banach Space Theory, Co-director of conference, Kent State University.

1977 Conference on Recent Advances in Theory of Banach Spaces, Co-director of conference, Kent State University.

1977 Regional Seminar in Functional Analysis, Co-director of seminar, Kent State University

1976 Conference on Banach Spaces of Analytic Functions, Co-director of conference, Kent State University.

1974-7 Organized and coordinated a regional topology conference that met 4-6 times each year, alternating meeting locations between Kent and Pittsburgh.

Cuyahoga Valley ACM Chapter (Local Chapter serving NE Ohio, unfortunately disbanded in 1996):

1984-96 Professional Development Seminar Organizing Committee
1978-96 Executive Committee Member

1980-81 President of Chapter
1979-80 Vice President of Chapter
1975-77 Chairman, Constitutional Committee
1975-96 Member
1975 Charter Member and Founding Committee

Science Fairs and Junior Academy of Science:
2003 Grand Award Judge, International Science & Engineering Fair, Cleveland, OH
1988-96 Judge, State of Ohio Science Fairs
1984 Judge, All Portage County Science Fair

SERVICE AT THE UNIVERSITY LEVEL

2010 Member of the Internal Review Committee for Department of Mathematical Sciences as part of their internal review process to prepare for an external review.

1997-99 Member of the committee that recommended the creation of a new joint graduate degree involving technology, computer science, and physics.

1997-99 Member of a committee to promote collaboration between the School of Fashion Design and the Computer Science program
- One result of this collaboration was the use of virtual moving models in their annual fashion design show in Spring 1998 to model actual garments designed by the School of Fashion Design.

1998 Member of a commission appointed by the Faculty Senate Executive Committee to investigate possible violations of faculty academic freedom due to the procedures used at KSU to implement the OBR (Ohio Board of Regents) mandated changes in graduate programs at KSU.

1998 Member of the Search Committee for the Director of Academic Computing and Technology.

1996-98 Served as a member of the University Council on Technology Committee, representing Dr. Jones, Dean of Research and Graduate Studies.

1995-99 Played a key role in obtaining Ohio Board of Regents (OBR) funding as the departmental representative to the meetings involving the four departments with Ph.D. producing computer science programs at Ohio public universities.
- Purpose: Respond to the OBR Directives for the Ph.D. programs in CS to work together to enhance the technological competitiveness of the entire State of Ohio.
- Met regularly with representatives from the computer science programs at The Ohio State University, University of Cincinnati, and Wright State University.
- The proposals from this group to the OBR and State resulted in special funding from the State of over $1 million yearly enhancement to each program.
- The initial proposal was for a $4 million yearly enhancement to be shared equally between the four departments. It was approved by the OBR and included in their proposal to the State. Eventually, this proposal was funded at the 50% level, and was divided equally between the four departments.

1991-94 Coordinated joint meetings between the information systems faculty in the Department of Administrative Sciences and the Computer Science faculty in the Department of

Mathematics and Computer Science.
- Purpose: Coordinate our computer-related courses and activities so as to enhance both programs and to possibly create a new joint computer science degree program.

1988-89 Evaluated for the Department and Graduate College a proposal by U. of Miami to establish a master's program in information science and operations research.

1984-85 Member of the Recommending Committee for a proposed graduate program in computing applications in Library Sciences.

1975-76 Coordinated the development of a proposal to the Educational Policies Committee (EPC) for a computer science program at Kent State University that would take advantage of any computer-related strengths in the Departments of Mathematics, Physics and Administrative Science. I scheduled regular meetings between representatives of these three departments. The main goals of these meetings were to
- Propose a computer science degree program with a minimal cost to the University by utilizing the mathematical and computation expertise in the Mathematics Department, the hardware expertise in the Physics Department, and the data processing and business computing expertise in the Administrative Science Department.
- Avoid any conflicts and duplications of effort between new proposed program and the existing Administrative Sciences program in data processing.
- Develop a proposal that would be supported by these three departments and would eliminate their current competition for different portions of this program.

Although a great deal of time was consumed, the end result was the creation of the two separate but complimentary programs in computer science and information systems that currently exist.

1975 Member Education Steering Committee.

1974-75 Member of EPC Computer Science Department Proposal Review Committee.
- Charge: Recommend the future structure of a computer science program at Kent State University.

SERVICE AT THE COLLEGE OF ARTS AND SCIENCES LEVEL

Committees:

2007-09 Member of the College Advisory Committee (CAC).
1990-91 Appointed by the Dean to coordinate creation of the Departmental Chair Review Committee.
1990-91 Member of the College Advisory Committee (CAC).
1989-90 Member of the Tenure and Promotion Committee in the Geography Department.
1975-76 Chairman, Computer Science Curriculum Development Committee, College of Arts& Sciences.
1974-77 Member of Computer Science Committee, College of Arts& Sciences.
1974-75 Member Search Committee for Dean, College of Arts & Sciences.

SERVICE AT THE DEPARTMENTAL LEVEL

COMMENT: The name of the department that I belonged to has changed three times since I arrived in 1973. The initial name was "**Department of Mathematics**". To show the increasing role of computer science in the department, this name was first changed to "**Mathematical Sciences**" and

later to "**Mathematics and Computer Science**". In July 2001, I chose to join the newly created "**Department of Computer Science**".

2011 Chair of the Colloquium Committee and member of the Industrial Affiliates Committee
2010 Member of the Colloquium Committee and Industrial Affiliates Committee
2009 As CAC Representative, presided over the organization of the Chairperson Review Committee and served as an elected member of the College Advisory Committee.
2008-9 Member of the OBR Budget Committee and the Colloquium Committee
2007-9 Department Representative to the College Advisory Committee (CAC) and continued to serve while on sabbatical in Spring 2008.
2001-9 Member of the Computer Science FAC
2007-8 Member of the OBR Budget Committee and the Handbook Revision Committee and continued to serve while on sabbatical in Spring 2008.
2006-7 Member of the OBR Budget Committee, the Colloquium Committee, and the Handbook Revision Committee
2005-6 Chair of the OBR Budget Committee and a member of the Colloqium Committee
2001-4 Founding Chair of the Department of Computer Science
1997-00 Chair of the committee to establish a non-traditional computer science LER (Liberal Education Requirement) course in the Science category at KSU.
1995 Preparation of the Self-Study Document of our computer science program that was required by the Ohio Board of Regents for their mandated review of Ph.D. programs in computer science.

- Played a major role in coordinating, preparing and revising report.
- Based on this Self-Study, our program was passed without any additional questions or conditions, something that was not true of the other CS Ph.D. programs in the State and most other disciplines at KSU.

1993-94 Member of the Undergraduate Studies Committee.
1991-93 Member of the Graduate Studies Committee.
1991 Served on the Departmental Chair Review Committee.
1991 Attended Annual Computer Science Conference as a representative of our Chairman.
1990-00 Member of the Computer Science Curriculum Committee.
1990-00 Computer Science Coordinator and Chair of the Computer Science Advisory Committee.

- This position corresponded to an "Assistant Chair for Computer Science" at most universities and was essential since our department housed mathematics, applied mathematics, statistics, and computer science.
- Position involved overseeing and coordinating most aspects of the computer science program, except for financial affairs, and chairing the regular meetings of the computer science faculty.
- To a large extent, the computer science faculty functioned as a "committee of the whole" for most affairs related to computer science.
- Until Fall, 1997, I also handled many of the non-financial duties of the current computer science graduate coordinator position.

1999-00 Member of the Faculty Search Committee.
1990-00 Member of the Faculty Advisory Committee
1990-91 Coordinated the faculty review of our Chairman and the creation of the Departmental Chair Review Committee.
1989-90 Member of the Computer Science Faculty Search Committee.
1989 Attended Annual Computer Science Conference at Snowbird as a representative of our Chairman.
1986-88 Member of Faculty Advisory Committee (FAC).
1986-88 Member of Undergraduate Studies Committee.
1986-87 Helped prepare and make the presentation for a Ph.D. program in Computer Science at College of Arts& Sciences and the Graduate College.

1984-88 Chairman of Departmental Computer Science Advisory Committee.
1985-86 As chairman of the Computer Science Advisory Committee, directed the curriculum development for a Ph.D. program in Computer Science.
1984-87 Library representative for Computer Science. Directed a successful effort to establish a minimally respectable list of journal subscriptions in computer science.
1984-85 Member, CSAC Curriculum Subcommittee.
1982 Member of Algebra Textbook Selection Committee.
1981-83 Member Undergraduate Studies Committee.
1981-82 Chairman, Colloquium Committee.
1981 Member of Search Committee for the 1982 Distinguished Guest Lecturer.
1980-83 Advisor and coach (with Michael Rothstein) of the KSU ACM Programming Team.
1980-83 Member of Graduate Studies Committee.
1980 Member of the textbook Selection Committee for Introduction to Computing and Intermediate Programming Courses.
1979-96 Advisor to Kent State Student ACM Chapter. I received some help in this duty from Dan Bennett on our systems staff during the last three years I assumed this duty.
1979 Member of Calculus Textbook Selection Committee.
1977-00 Member of Departmental Computer Science Advisory Committee (CSAC).
1977-82 Regular coordination with Prof. Paul S. Wang and others on implementation of the additions to the computer science program.
1977-78 Member of Committee on Use of CAI, Calculators, and Computers in Curriculum.
1977-78 Departmental Library Representative.
1978-80 Advisor and coach (with Ms. Grace Bush) of the KSU ACM Programming Team.
1978 Jointly hosted (with Profs. Paul S. Wang, Olaf P. Stackelberg, and Ms. Grace Bush) the 1978-Regional ACM Programming Contest at Kent State University.
1975-77 Mathematical Sciences Tenure and Promotion Committee.
1975-76 Search Committee for Assistant Professor Candidates.
1975 Education Steering Committee.
1974-77 Numerous recruitment lectures for our graduate program to colleges in the area and recruitment lectures for our undergraduate program to high schools in the area.
1974-77 Undergraduate Coordinator.

- Directed an extensive revision of a Department of Mathematical Science undergraduate program establishing both a Computer Science Program and an Applied Mathematics Degree.

1974-77 Member of Departmental Executive Committee.
1974-76 Chairman Search Committee.
1974-75 Member of EPC Computer Science Department Proposal Review Committee.

- Its charge was to recommend the future structure for a computer science program at Kent State University.

1974 Prepared first graduate studies brochure.
1973-74 Member of Graduate Studies Committee.
1974 Member of committee which designed the Master's Program for Teachers.
1974 Banquet Lecturer – Pi Mu Epsilon.

SERVICE ON DISSERTATION & THESIS COMMITTEES (Department, College, and University Levels)

NOTE: The dissertation and thesis committees for my own students are not included here, since they were listed earlier.

Member of a Dissertation committee (Does not include my own students; A few are missing):

1. Dan Bennett, *Tools and Techniques for Locating and Steering Parallel Simulations through Bifurcation Points*, Dept of Computer Science, Advisor: Paul Farrell and Arden Ruttan, October 25, 2010.
2. Sherenez Al-Haj Baddar, *Finding Better Sorting Networks*, Dept of Computer Science, Advisor: Kenneth Batcher, April 2, 2009.
3. Francisco Javier Garcia, *Three NonLinearProblems on Normed Spaces*, Dept. of Math., Advisor: Richard Aron, Jan. 29, 2007.
4. Hong Wang, *Design and Implementation of an FPGA-Based Pipelined Associative SIMD Processor Array with Specialized Variations for Sequence Comparison and MSIMD Operation*, Advisor, Robert Walker, Nov 2006.
5. Boren Lin, *A Novel Resveratrol Analog: it's Cell Cycle Inhibitory, Pro-Apoptotic and Anti-Inflammatory Articles on Human Tumor Cells*, Dept of Chemistry, Advisor was Chun-che Tsai, March 22, 2006.
6. Juan Seoane, *Chaos and Lineability of Pathological Phenomena in Analysis*, Dept. of Mathematics, Advisor: Richard Aron, March 6, 2006.
7. Gerd Zeibig, *Categorical Methods in Functional Analysis*, Dept. of Mathematics, Advisor: Andrew Tonge, June 4, 2004.
8. Berhane Tebuabo Ghaim, *On the Geometry of Banach Space Operators*, Department of Mathematics, Advisor: Joseph Diestel in Mathematics, August 2003 (Moderator).
9. Mathew Lesniewski, *Polyphenol Inhibition of Herpes Simplex Virus Replication*, School of Biomedical Sciences and Department of Chemistry, Advisor: Dr. Chun-che Tsai, March 20, 2003.
10. Abdallah Muhammed Shuibi, *Numerical Methods for Large-Scale Ill-Posed Problems*, Advisor: Lothar Reichel, Dept. of Mathematics,
11. James Chalmers: *A Geometric Approach to Bolzman's Law*, Advisor: Joseph Diestel, Dept of Mathematics, 2002, (Moderator).
12. Heather Snell, *A New Matrix Method for the Alexander Invariant and the Hosokawa Polynomial*, Advisor: Victor Nicholson, Dept of Mathematics, October 16, 2001, (Moderator).
13. Bao-Qi Feng, *Matrix Inequalities*, Advisor: Andrew Tonge, Dept of Mathematics, July 3, 2001, (Moderator).
14. Bryan Lewis: *Krylov Subspace Methods for Signals, Systems and Control*, Dept. of Mathematics, Co-Advisors: Lothar Reichel and Danielle Calvetti, Nov. 2, 2000, (Moderator).
15. Ravi Parakulam; Title: *Quantitative Structure Activity Relationship Studies of Antiviral Agents*, Advisor was Chun-Che Tsai in Chemistry, 1999.
16. Lianghu Tian, *Classification and Feature Extraction of High Spatial Resolution Remote Sensing Images by Neural Networks and Image Processing*, Advisor was Jay Lee of Geography, 1998.
17. Cecilia De Souza, Graduate Faculty Representative on the dissertation committee. Advisor: Richard Aron, Dept. of Mathematics, 1998, (Moderator).
18. Pierre David, Advisor: Randall Brown, Dept of Administrative Sciences, 1998, (Moderator).
19. Stephen L. Scott, *A Distributed Heterogeneous Computing Environment*, Advisor Jerry Potter, 1996.
20. Koung Goo Lee, *Routing Algorithms on Shuffle Exchange Networks*, Advisor: Kenneth Batcher, 1995.
21. Jae-Dong Lee, *Minimizing Communication in the Bitonic Sort*, Advisor: Kenneth Batcher, 1994.

22. Sue Lee, Administrative Science Department, 1991, (Moderator).
23. Chandra Balachandran, *The Design of an Expert System Which Could be Used in the Field to Provide Agricultural Advice on the Problem of Desertification of Land in India*, Dept. of Geography, Advisor: Surinder Bhardwaj. (Served as artificial intelligence technical expert as well as dissertation committee member, 1989-93).
24. Chandra Asthagiri., *An Associative Parallel Compiler for an Associative Computing Language*, Advisor: Jerry Potter, 1991.
25. Barbara Faires, *Grothendieck Spaces and Vector Measures,* Mathematics Department dissertation in area of Banach Spaces, Advisor was Joe Diestel, 1973-80.
26. Terry Morrison, *Denjoy Integration in Frechet Spaces*, Mathematics Department dissertation in area of Banach Spaces, Advisor: Joe Diestel, 1973-80.
27. Charles Seifert, *Averaging in Banach Spaces,* Mathematics Department dissertation in area of Banach Spaces, Advisor: Joe Diestel, 1973-80.
28. Erwin Bobo, unknown title, Probability and Statistics Department at Florida State University, 1970-73.
29. James Lynch, unknown title, Probability and Statistics Department at Florida State University, 1970-73.

Member of a Thesis Committee (list incomplete; does not include my own students):

1. Aruna Vanukuru, *Survey of Intrusion Detection Systems*, Advisor: Michael Rothstein, June 18, 2010
2. Binamra Dutta, *Enterprise Software Metrics: How to Add Business Value*, Advisor: Austin Melton, April 3, 2009
3. N V Praveen Babu Gedela, *Measurement and its Historic Content*, Dept of Computer Science, Advisor: Austin Melton, October 17, 2008.
4. Amruta Hingane, *A POT of Software Metrics: A Physiological Overturn of Software Metrics*, Dept of Computer Science, Advisor: Austin Melton, August 19, 2008.
   .
5. Vamsi Narra, *Bayesian Networks and Partial Evaluation*, Dept. of Computer Science, Advisor: Austin Melton, March 31, 2008.
6. Swetha Vasudevan, *Immune Based Event-Incident Model for Intrusion Detection Systems*, Dept. of Computer Science, Advisor: Michael Rothstein, May 22, 2007.
7. Amitabh Pankaj, *Survey on Compact Routing on Power Law Graphs,* Advisor: Feodor Dragan, April 19, 2007.
8. Sudipta Bhaduri, *Finding a Maximum Clique of a Choral Graph by Removing Minimal Degree Vertices*, Advisor: Feodor Dragan, Computer Science Dept., March 2008.
9. Swetha Vasudevan, *Immune Based Event-Model for Intrusion Detection System: A Nature Inspired Approach to Secure Computing*, Advisor: Michael Rothstein, Dept. of Computer Science, May 2007.
10. Srikanth Saladi, *Modeling Nondeterminism in Program Semantics using Lifted Binary Multirelations*, Advisor: Austin Melton, Dept. of Computer Science, March 2007.
11. Rajesh Jadhav, *Geometric Routing without Geometry*, Advisor: Feodor Dragan, Computer Science Dept., March 2007.
12. Jidesh Soudamini, *Galois Connection and Lifted Binary Multirelations for Program Semantics*, Dept. of Computer Science, Advisor: Austin Melton, Sept. 2006.
13. Ping Xu, *Implementing Three VLDC String Matching Algorithms on an FPGA-Based Associative SIMD Processor,* Computer Science Dept, Advisor was Robert Walker, May 2006.

14. Sabegh Singh Virdi, *Solving the Longest Common Subsequence (LCS) Problem using the Associative ASC Processor with Reconfigurable 2D Mesh*, Computer Science Dept., Advisor: Robert Walker, March 2006.
15. George Powell, *Improvement Algorithms for an Industrial Routing Problem*, Computer Science Dept., Advisor: Feodor Dragan, Dec. 2005
16. Amit Borwankar, *Nearest Neighbor Embracing Graph (NNEG) as a New Topology for Wireless Ad-hoc Networks,* Computer Science Dept., Advisor: Feodor Dragan, Oct. 2005.
17. Shashikant Shinde, *A Lattice on the Set of Program Specifications,* Computer Science Dept., Advisor: Austin Melton, Aug. 2005.
18. Manyu Tang, *qMESH, A High Level Tool for Mesh Decimation,* Dept. of Computer Science, Advisor: Arden Ruttan, June 2005.
19. Jalpesh Chitalia, *Efficient Representation of Data Structures on Associative Processors,* Computer Science Dept., Advisor: Robert Walker, Sept. 2004.
20. Kevin Schaffer, *Developing a Practical Instruction Set for a RISC-based Associative Processor*, Advisor: Robert Walker, April 2003.
21. Lei Xie, *Implementing a Scalable PE Interconnection Network for an FPGA-based Associative Processor,* Advisor: Robert Walker, Dept. of Computer Science, March 30, 2004.
22. Boren Lin, *Anti-Cancer Activity of Resveratrol Analogs,* Advisor: Chun-che Tsai, Dept of Chemistry, 2003.
23. Wen Zhu, *Neural Net Classification Efficiency and Accuracy on Image with Different Color Models*, Advisor: Jerry Potter, Dept. of Computer Science, March 21, 2002.
24. Meiduo Wu, *Implementing the Associative Array for an Associative Processor on FPGA's,* Advisor: Robert Walker, April 25, 2002.
25. Yanping Wang, *Inplementing the Single Instruction Stream Associative Computing Model on FPGAs: the Architecture, Back, and Compiler,* Advisor: Robert Walker, 2001.
26. Chengwei Liu, *Performance Modeling and Analysis of Asynchronous Transfer Mode Switches with Gated Shared Buffer,* Advisor: Hassan Peyravi, 2001.
27. Valerian Anderson, *Distributed Computational Tools for Comparing Genomes,* Computer Science Dept., Advisor: Arvind Bansal, 1999
28. Abel Salem, *Semantic Operating Systems,* Advisor: Jerry Potter, 1998.
29. Gongxiao Hu, *Performance of ATM Network in Satellite Communications*, Advisor: Hassan Peyravi, 1997.
30. Robert Smith, Jr., *A Methodology and Visual Basic Shell for Process Problem Advising Expert Systems*, Advisor: Jerry Potter, 1997.
31. Dan Stuckey, Advisor: Jerry Potter. 1997.
32. Yujing Bai, *Main Memory Database and Transaction Scheduling*, Advisor: Will Meilander, 1997.
33. Nickolas Kotran, *Printer Driver for a Dye Sublimation Printer*, Advisor: Jerry Potter, 1996.
34. Jeffrey Childs, *Homonymic Interpretation in the Adaptive Acquisition of Spoken Language*, Advisor: Jerry Potter, 1996.
35. Kathy Taylor, Thesis involved applications of molecular modeling software implemented by my thesis student, Paul Durand, Dept of Chemistry, Advisor was Chun-che Tsai, 1996.
36. Sonia Karkare, *Secure E-Mail Architecture using PGP ("Pretty Good Privacy") for the Timkin Company*, Advisor was Jerry Potter, 1996.
37. Padmanabhan Krishnan, *Main Memory DBMS in SIMD Parallel Machines with RAID based I/O,* Advisor: Will Meilander, 1996.
38. Andre Scharkowski, *A Design and Implementation of a Program Environment for X Window System of UNIX*, Advisor Jerry Potter, 1995.
39. Susan Bradley, *Text Recognition on Engineering Drawings,* Advisor: Jerry Potter, 1994.

TEACHING

Teaching Awards:

1996 Nominated and selected to be included in the fourth edition of Who's Who Among America's Teachers. National merit scholars are allowed to nominate one high school or college teacher that has made the most significant contribution to their educational training.

Courses Taught in Computer Science: 1975- present

Parallel Real Times Systems
Theory of Computation
Advanced Algorithms
Design and Analysis of Algorithms
Computational Geometry
Parallel and Distributed Algorithms
Combinatorial Algorithms
Advanced Artificial Intelligence
Parallel Computing
Parallel Algorithms
Computational Models
Artificial Intelligence
Automated Reasoning
Numerical Analysis I and II
Expert Systems
Structure of Compilers
Structure of Programming Languages
Operating Systems
Data Structures
Assembly Language Programming
LISP Programming
Intermediate Programming
Introduction to Computing
Discrete Structures for Computer Science
At University of Texas (Austin) in 1983-4:
Computer Science Concepts (CS-2)
Analysis and Correctness of Programs

Seminars Directed in Computer Science:

2007-9 SIMD Real-Time Air Traffic Control Projects Seminar
1998 Distributive Algorithms Seminar (with Robert Walker)
1997 Approximation and Learning Algorithms Seminar (with Meera Sitharam)
1995- Computational Chemistry Seminar (with Chun-che Tsai) - multiple offerings
1993- Parallel Computing Seminar (with, at various times, Jerry Potter, Kenneth Batcher, and Robert Walker) – multiple offerings
1993 Parallel Computational Geometry Seminar
1992 Artificial Intelligence Seminar

Individual or Special Courses, Honors Theses, and Projects Sponsored in Computer Science:

2009 Created a joint, online course with Professor Frank Drews at the EECS Department at Ohio University in Spring 2009 titled "Parallel Real-Time Systems". This course was taught by each of us in a room with a polycom system, allowing students and faculty at both universities to interact.

2007-2009 Research Seminar in SIMD Real-Time Air Traffic Control with thesis & dissertation students.

2007-2008 Research advisor for Tristan Cuevas, an undergraduate honors student, in the STARS undergraduate research program.

1994-1996 Served as Honor's thesis advisor for Colleen McCarthy. Her thesis was on the topic of neural nets and extended work that she had done at a summer institute for outstanding undergraduates. Honors thesis was completed and defended in Spring 1996.

Fall-93	A Second Semester of Discrete Mathematics with Emphasis on Computing Concepts (H. Hoover)
Fall-93	Sponsored a three hour research course for Lihong Yu to meet the project requirement for the MA degree in CS. She obtained timings for some basic algorithms and operations for an associative SIMD Computer, using our WaveTracer SIMD Computer.
Sum-93	Reading Course in Parallel Processing to allow Paul Durand to complete this course early so that he could start working on his thesis in Fall 1993.
Spr&Sum-93	Writing utility in C to support an expert system written in PROLOG at KSU to help in scheduling of classes, rooms, and instructors (Arne Saupe).
Spr-1990	Reading Course in Parallel Algorithms to allow the student to go beyond topics covered in my course (Jon Wiebrecht).
Spr-1990	A reading course in Automatic Reasoning (or Logic Based Expert Systems) with Programming Assignments (Sarah Rambacher).
Fall-1989	A reading course in "The Artificial Intelligence Approach to Seismic Signal Interpretation" which required a term paper (Manavalan Kesavan).
Spr-1989	A project course to investigate and develop software concerning "Parallel Algorithms for Exact Solutions for a System of Linear Equations Using Modular Arithmetic" (Carl Williams).
1988	Sponsored a student at Western Reserve Academy who studied the language PROLOG during the Summer and Fall (Calvin Hunt).
Sum-1988	A reading course in parallel programming requiring programming and tests (Kenneth Atchinson).
1987-88	A parallel programming project (Thomas Leech).
Sum-1987	A reading course in parallel programming (John Michalakes).
Sum-1987	Building a large PROLOG expert system, (Brent Neal Reeves).
1986-87	Digital Analysis of Analog Signals with Respect to Musical Pitches, (Thomas Leech).
1986-87	Honors College Project: Learn LISP and write a game playing program using the alpha-beta proving algorithm. (Christopher Parker).
1985-86	Special compiler project (John Mascio).
1985-86	Honors College Project: OPS5 Expert System on Vitamins (Carl Williams).
1980-84	Record of courses & projects sponsored was not kept.

Courses Taught in Mathematics:

Mathematical Modeling
Functional Analysis Sequence
Graduate Topology Sequence
Functions of a Real Variable Sequence
Measure Theory Sequence
Introduction to Analysis Sequence
Advanced Calculus Sequence
Number Theory
Introduction to Modern Algebra
Discrete Mathematics
Linear Algebra
Set Theory and Logic
Basic Probability and Statistics
Analytic Geometry and Calculus Sequence
College Algebra and Precalculus
Finite Mathematics

<u>Math Courses Taught only at Florida State</u>
Axiomatic Development of the Real Numbers
Complex Variables
Projective Geometry
Fourier Series

Seminars in Mathematics:

Spr-80	Applied Functional Analysis Seminar
1977-78	Bases in Banach Spaces
1976-77	The L-Spaces (Seminar, joint with R. H. Lohman)
1974-75	Banach Spaces of Continuous Functions II seminar

1973-74 Banach Spaces of Continuous Functions I seminar

Individual Reading Courses in Mathematics:

Spr-80 Functional Analysis and Modern Analysis (T. Shura)
Fal-79 Special Topics in Topology (T. Shura)
Spr-78 Finite Dimensional Vector Spaces (R. Ulrich)

MISCELLANEOUS

Professional Meetings Attended:

2010 SC'10 (SuperComputing) in New Orleans, Nov 13-19, 2010.
2010 IPDPS in Atlanta, GA April 19-23
2010 SIGCSE 2010 Milwaukee March 10-13.
2008 SIGCSE 2009, Chattanooga, TN, March 4-7
2008 SC'08 (SuperComputing) in Austin, TX, Nov. 15-20, 2008
2008 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 9-10.
2008 IPDPS 2008, Miami, FL, April 13-18.
2008 SIGCSE 2008, Portland, OR. March.
2007 SC'07 (SuperComputing) in Reno, NV, Nov. 11-15, 2007
2007 SIGCSE 2007 Organizations: IEEE and ACM Attendee, Northern Kentucky-Cincinnati area, OH,
2007 IPDPS 2007, Long Beach, CA, March 26-30, 2007.
2006 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 12-13.
2006 SIGCSE 2006, Houston, TX, March 3-5, 2006.
2006 World Congress in Computer Science, Computer Engineering, and Applied Computation (WORLDCOMP'06). The International Conference on Parallel and Distributed Processing Techniques and Applications (PTPTA) is part of WORLDCOMP. Las Vegas, NV, June 26-29.
2005 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 6-7.
2005 IPDPS 2005, Denver Colorado, April 4-8, 2005.
2004 CRA Chairs Conference at Snowbird 2004**,** July, Utah
2004 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 7-8.
2004 International Parallel and Distributed Processing Symposium (IPDPS) 2004, Santa Fe, New Mexico, April 26–30.
2004 SIGCSE 2004**,** March, Norfolk, Virginia.
2003 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 2-3.
2003 17th International Parallel and Distributed Processing Symposium (IPDPS), Nice France, April 22-26.
2002 14th IASTED International Conference on Parallel and Distributed Computing and Systems, Cambridge, MA.
2002 Deer Creek Meeting for Ohio Computer Science Chairs. Deer Creek Resort & Conference Center, May 3-4.
2002 16th International Parallel and Distributed Processing Symposium, Ft. Lauderdale, FL.

2002 SIGCSE (ACM Special Interest Group on Computer Science Education), Northern Kentucky and Cincinnati meeting, Feb 27-March 3, 2002.
2002 Special Interest Group in Graphics (SIGGRAPH '02), San Antonio, TX.
2002 Computer Science Chairs Conference (CRA-sponsored), Snowbird, UT, July, Utah.
2001 15th International Parallel and Distributed Processing Symposium, San Francisco, CA.
1999 First International Workshop on Real-Time, Mission-Critical Systems: Grand Challenge Problems, Phoenix, AZ.
1999 11th IASTED International Conference on Parallel and Distributed and Systems (PDCS), MIT, Cambridge, MA.
1999 ACM Special Interest Group on Computer Science Education (SIGCSE '99), New Orleans, LA.
1998 International Conference on Parallel Processing (ICPP), Minneapolis, Minnesota.
1997 9th IASTED International Conference on Parallel and Distributed and Systems, George Washington University.
1996 Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA), Sunnyvale, CA.
1995 International Conference on Parallel Processing (ICPP), Wisconsin.
1992 The Fourth Symposium on the Frontiers of Massively Parallel Computation, Goddard Space Flight Center in McLean Virginia.
1991 ACM Annual Computer Science Conference, San Antonio, Texas.
1989 International Conference on Parallel Processing (ICPP), St. Charles, Ill.
1989 ACM Annual Computer Science Conference, Louisville, Kentucky.
1989 Computer Aided Proofs in Analysis, University of Cincinnati.
1988 Second Symposium on the Frontiers of Massively Parallel Computation, Sponsored by the Computer Society of IEEE and NASA/Goddard Space Flight Center, George Mason University.
1986 ACM-IEEE Computer Society, Fall Joint Computer Conference, Dallas, (Special emphasis on Parallel and Supercomputers and Fifth Generation Computing).
1986 ACM Annual Computer Science Conference, Cincinnati, Ohio.
1985 ACM Annual Computer Science Conference, New Orleans.
1985 International Conference on Banach Spaces and Classical Analysis, organized a special session on "Using Computers in Mathematical Research", Kent State University.
1984 Computer Algebra as a Tool for Research in Mathematics and Physics, New York University and Courant Institute of Mathematical Science.
1983 ACM Annual Computer Science Conference, Orlando, Florida.
1983 Computing and the Information Age, Centennial Symposium, University of Texas at Austin.
1982 ACM 82 Annual Conference, Dallas, Texas.
1981 ACM Symposium on Symbolic and Algebraic Computation, Snowbird, Utah
1979 ACM 79 Annual Conference, Detroit, Michigan
1979 SIGCSE Conference, Dayton, Ohio.
1979 MACSYMA Users' Conference, Washington, D.C.
1979 Topology Conference, Ohio University.
1979 International Banach Space Conference, Kent State University.
1978-96 Numerous local chapter meetings of the Cuyahoga Valley ACM (CVACM).
1977 ACM Computer Science Conference, Atlanta, GA.
1977 Conference on Recent Advances in Theory of Banach Spaces, Kent State University.
1976 Conference on Banach Spaces of Analytic Functions, Kent State University.
1974 International Congress of Mathematicians, Vancouver, Canada.
1974 Annual General Topology Conference, University of North Carolina at Charlotte.
1973 Conference on Best Approximation and Functional Analysis, Kent State University.
1973 Symposium on Approximation Theory, University of Texas.
1972 Lp and Nuclear Spaces and Related Topics, Louisiana State University.
1971 Absolute Summing Operators, L Spaces, and Related Topics, LSU.
1969 Geometric Theory of Classical Banach Spaces, Florida State University.

1979 ACM 79 Annual Conference, February, Detroit, Michigan.
1977 National Computer Conference, Dallas, Texas.
1977 Regional ACM Conference of SIGCSE, Columbus, Ohio.
1975 Conference on Computers in Undergraduate Curricula, Texas Christian University, Texas.
1975 Charlotte Topology Conference, Charlotte, South Carolina.
1974-7 Numerous local chapter meetings of DPMA.
1974 International Congress of Mathematicians, Vancouver, British Columbia, Canada.
1973 American Mathematical Society Winter Meeting, Dallas, Texas.
1973 Symposium on Approximation Theory, University of Texas.
1972 Texas Symposium on Computer Systems, University of Texas.
1971 American Mathematical Society Winter Meeting, Atlantic City, N.J.
1971 American Mathematical Society Regional Meeting, Auburn University.
1970 American Mathematical Society Winter Meeting, San Antonio, Texas.
1970 Mathematical Association of America, Regional meeting, Rollins College, Florida.
1969 American Mathematical Society Winter Meeting, New Orleans.
1967 ACM Symposium on Interactive Systems for Experimental Applied Mathematics, Washington, D.C.

Participation in Professional Development Seminars and Short Courses

2010 Attended the SuperComputing (SC10) Education Progam, November 13-16, Focus on Workshop on Computational Thinking and Workshop on Parallel Programming Class for Undergraduates.

2010 Attended SIGCSE 2010 workshop in Milwaukee on Cloud Computing.

2009 Attended SIGCSE 2009 workshop in Chattanooga on use of Second Life in classes

2007-8 Need to add a couple more SIGCSE workshops here.

1988-9 Attended an instructional workshop organized by Intel concerning use of their iPSC/2 parallel computer. As a result of my participation, the department was given a free copy of the iPSC/2 emulator.

1986 CVACM Professional Development Seminar, *Device Independent Computer Graphics*, presenter: George Carson (GSC Associates), May (1 day).

1985 CVACM Professional Development Seminar, *Concurrent and Distributed Programming*, Presenter: Arthur Bernstein (Computer Science Department, SUNY at Stony Brook), (1 day).

1983 CVACM Professional Development Seminar, *Structured Programming and Design*, Presenter: Michael Marcotty, (1 day).

1982 *ACM Workshop, on Probabilistic Algorithms*, University of New Hampshire, summer, (5 days) Partially financed by NSF.

1982 *ACM Symposium on LISP and Functional Programming*, August, Carnegie Mellon. (3 days).

1982 CVACM Professional Development Seminar, *Local Area Computer Networks*, presenter: David C. Wood, (1 day).

1981 CVACM, Professional Development Seminar, *Network Protocols*, Akron Ohio.

1981 CVACM Professional Development Seminar, Software *Science: Applications to Software Project Costing*, Presenter: Victor Schneider (Wang Laboratories, Inc.), (1 day).

1980 COACM Symposium, *New Dimensions in Computer Graphics*, Columbus, Ohio (1 day).

1980 CVACM Professional Development Seminar, *Using a Data Base Correctly*, Presenter Robert J. Tufts (Analytic Sciences Corporation) (1 day).

1980 CVACM Professional Development Seminar, *Software Engineering*, Akron, OH. (1 day).

1979 COCACM Symposium, *Software Engineering*, Columbus, Ohio (1 day).

1977 *Numerical Analysis Short Course*, AMS Winter Meeting, Atlanta, Georgia (1 day).

1975 *MAA Operations Research Short Course*, Youngstown State University (5 days).

SPECIAL SERVICE: ESTABLISHING THE KSU COMPUTER SCIENCE PROGRAM

1973-76:

- During my second year (1974) at KSU, I was asked by the chair (Richard Brown) to develop a computer science program within the Mathematics Department. Although I was hired at Kent State University as a mathematician with significant research in functional analysis and general topology, I had expressed interest in a computer science program because of my involvement with computers at University of Texas during my graduate work (1963-1968).
- At that time, we taught four low level service courses in computer science that the Administrative Science Department used as part of their major in data processing.
- The Administrative Science Department decided at about the same time that they wanted to take over our four computer science courses and expand their data processing major to include a computer science track by adding some of the more popular software courses in computer science.
- Physics decided they wanted to add computer hardware courses and a computer hardware track to their program and to take over our assembly course so that they could add follow up courses in computer architecture.
- In order to work around the serious political conflicts between Mathematics, Administrative Sciences, and Physics and to develop a general plan concerning how computer science should be offered at KSU, the Educational Policies Committee appointed a committee that included representatives from the three areas and a high level administrator. I was the representative from Mathematics.
- Progress by this committee was extremely slow, given its highly political agenda. I arranged for regular subcommittee meetings involving only the representatives from Administrative Science, Physics, Mathematics, and Grace Bush from the Computer Center to see if we could work things out.
- There was tremendous pressure in these meetings to let Physics have the courses it wanted and to divide the remaining computer science courses between Mathematics and ADMS, with ADMS getting the more popular software courses and Mathematics getting the more theoretical, mathematically-based courses. I refused to accept this approach, as I felt it would destroy the possibility of having a coherent computer science program that could support a Ph.D. for the foreseeable future.
- A general agreement, reached after about three years of exhausting meetings, gave ADMS only the business-related computing courses and Physics only some electronics type courses which were supposed to be closely related to physics. Getting an undergraduate major and the accompanying courses approved required two additional years.

- At the end of this time (1976), we had a computer science program in Mathematics but not enough faculty to teach the new computer science courses.

1977-83:
- Because of my interest in this new discipline, I started teaching an increasing number of computer science courses and a significantly decreasing number of mathematics courses.
- In 1977 we made our first outside hire in the computer science area, Paul Wang in the area of computer algebra from MIT.
- The need to develop computer science courses started with the implementation of bachelor's and master's level courses in the late 1970s and early 1980s. We had strong student enrollments in these courses, as students could use them to satisfy requirements for a mathematics major prior to approval of our computer science degrees.
- Following the approval of our computer science program, I played a key role in the development of the computer science program, not only by teaching new computer science courses but in coordinating first the implementation of the B.S. degree program and then the implementation of the master's degree program in computer science.
- As my faculty duties included research, over a period of time my research began to move more into the computer science discipline beginning at first with mathematical algorithm work.

1983-84:
- I was on a one year sabbatical at the University of Texas at Austin Computer Science Department and became very familiar with their computer science undergraduate and graduate program. This was very useful in updating and expanding our program when I returned.

1984-2001:
- As the number of computer science faculty increased, the department formed a committee called the Computer Science Advisory Committee (CSAC) of faculty who were teaching principally computer science courses was created to oversee and coordinate the computer science program and to make needed recommendations for changes to the undergraduate coordinator, the graduate coordinator, and the department chair.
- I served as the chair of this committee from 1984 until 1988. During that time, we developed a Ph.D. program in computer science.
- I also served as chair of the CSAC committee from 1990 until the time our new Computer Science Department was established in 2001.
- In the fall of 1993, the position of chair of CSAC was renamed "Computer Science Coordinator" to reflect the large amount of work and responsibility associated with the position.
- In addition to chairing CSAC, the duties of the Computer Science Coordinator position were
  - to implement the changes recommended by CSAC,
  - develop the computer science course schedule,
  - to assign instructors for the CS courses,
  - meet with potential undergraduate and graduate majors in computer science to answer their questions and to evaluate their (often foreign) courses and work experience, and handle a wide range of information requests concerning computer science from a number of people such as employers who want to advertise a computer science position, students from other departments who want to take a computer science course, and faculty from other departments who want a student to take the appropriate computer science courses in order to gain certain skills.
- Around 1997, the new positions of Computer Science Advisor and a Computer Science Graduate Coordinator were created and assumed several of the above duties, reducing the work overload of this position.
- As a result of my extensive involvement in establishing the various computer science programs and the new department at Kent State, my research is in two different academic disciplines (mathematics and computer science). Also, the extensive time commitment required to establish the entire computer science program and attaining research status in a second discipline delayed my promotion to full professor considerably.

- The Computer Science Department was created in July, 2001. Each member of the Mathematical Sciences Department could choose in which department they wished to serve. As I have worked in the area of computer science since 1974, I chose Computer Science and, subsequently, was elected to serve as the department's first (i.e., founding) chair.