

## CURRICULUM VITAE

### **DENNIS G. KAFURA**

#### **EDUCATION**

B.S.	Mathematics Department, University of San Francisco	1970
M.S.	Computer Science Department, Purdue University	1972
Ph.D.	Computer Science Department, Purdue University	1974

#### **PROFESSIONAL EXPERIENCE**

1996 - present	Professor of Computer Science Virginia Tech
2015 (Aug-Dec)	Interim Head, Department of Computer Science Virginia Tech
1998 - 2008	Head, Department of Computer Science Virginia Tech
1985 - 1986	Acting Head, Department of Computer Science, Virginia Tech
1982 - 1996	Associate Professor of Computer Science, Virginia Tech (Tenured).
1979 - 1981	Associate Professor of Computer Science, Iowa State University (Tenure awarded).
1975 - 1979	Assistant Professor of Computer Science, Iowa State University.
1974 - 1975	Assistant Professor of Computer Science, Purdue University.
1970 - 1974	Research and Teaching Assistant, Purdue University.

## PUBLICATIONS

### Books

Dennis Kafura, Object-Oriented Software Design and Development Using C++, Prentice-Hall, 1998, 440 pages.

Dennis Kafura, Object-Oriented Software Design and Development Using Java, Prentice-Hall, 2000, 655 pages.

### Journal Papers

A.C. Bart, Javier Tibau, Eli Tilevich, Cliff Shaffer, Dennis Kafura, “Implementing an Open-access, Data Science Programming Environment for Learners,” *IEEE Computer* (to appear, 2017).

H. Almohri, D. Yao, and D. Kafura. Process Authentication for System Assurance. *IEEE Transactions on Dependable and Secure Computing (TDSC)*. Vol. 11, Issue 2, March/April 2014, pp. 168-180.

Markus Lorch, Dennis Kafura, Ian Fisk, Kate Keahey, Tim Freeman, Abhishek Singh Rana, Frank Wurtherwein, “Authorization and identity mapping services for the Open Science Grid,” *International Journal of High Performance Computing and Networking*,” Vol. 5, No. 3, pp. 144-155, 2008.

Markus Lorch and Dennis Kafura, “The PRIMA Grid Authorization System,” *International Journal of Grid Computing*, Vol 2, No. 3, September 2004, pp. 279-298.

N. Ramakrishnan, L.T. Watson, D.G. Kafura, C.J. Ribbens, and C.A. Shaffer, “Programming environments for multidisciplinary Grid communities,” *Concurrency and Computation: Practice and Experience*, Vol. 14, Nos. 13-14, pages 1241-1273, Nov-Dec 2002.

Susan Keenan, Rex Hartson, Dennis Kafura, and Robert Schulman, “The Usability Problem Taxonomy: A Framework for Callification and Analysis,” *Empirical Software Engineering: An International Journal* (Special Issue on Usability Engineering), Volume 4, Issue 1, March 1999, pp. 71-104.

Manibrata Mukherji and Dennis Kafura, “Specification of Multi-Object Coordination Schemes Using Coordinating Environments”, accepted by *Theory and Practice of Object Systems*.

Manibrata Mukherji, and Dennis Kafura, “A Process-Based Abstraction for Coordinating-Multi-Agent Groups,” *Theoretical Computer Science*, Vol. 192, No. 2, 1998, pp. 287-314.

Manibrata Mukherji and Dennis Kafura, "CEE: A process-calculus based formalism for specifying multi-object coordination", Coordination Languages and Models (Lecture Notes in Computer Science), Vol 1061/1996, Springer Verlag, 1996, pages 285-304.

Dennis Kafura, Manibrata Mukherji, and Douglas M. Washabaugh, "Concurrent and Distributed Garbage Collection of Active Objects," IEEE Transactions on Parallel and Distributed Systems, Vol. 6, No. 4, April 1995, pp. 337-350.

Wei Li, Sallie Henry, and Dennis Kafura, "Measuring Object-Oriented Design," Journal of Object-Oriented Programming, Vol. 8, No. 4, July/August, 1995, pp.48-55.

Dennis Kafura and Greg Lavender, "Concurrent Object-Oriented Languages and the Inheritance Anomaly," in Parallel Computers: Theory and Practice, ed: T.L. Cassavant, IEEE Press, 1994, pp. 165-198.

Joel Henry, Sallie Henry, Dennis Kafura and Lance Matheson, "Improving Software Maintenance at Martin Marietta," IEEE Software Special Issue on Measurement-Based Process Improvement, Vol. 11, No. 4, July, 1994, pp. 67-75.

Dennis Kafura, Manibrata Mukherji and Greg Lavender, "ACT++ 2.0: A Class Library for Concurrent Programming in C++ Using Actors," Journal of Object-Oriented Programming, October, 1993, pp. 47-55.

John Lewis, Sallie Henry, Dennis Kafura and Robert Schulman, "On the Relationship Between the Object-Oriented Paradigm and Software Reuse: An Empirical Investigation," Journal of Object-Oriented Programming, Vol. 5, No. 4, July/August 1992, pp. 35-41.

Atika Laribi and Dennis Kafura, A Protection Model Incorporating Both Authorizations and Constraints, Computers and Security (Elsevier Publishing) Vol 11, 1992, pp.57-73.

K.H. Lee and D.G. Kafura, "ACT++: Building a Concurrent C++ with Actors," Journal of Object-Oriented Programming, Vol. 3, No.1, May/June 1990, pp. 25-37.

D.G. Kafura and K.H. Lee, "Inheritance in Actor Based Concurrent Object-Oriented Languages", The Computer Journal, Vol. 32, No.4, August 1989, pp.297-304.

Dennis Kafura and Gereddy R. Reddy, "The Use of Software Complexity Metrics in Software Maintenance," IEEE Transactions on Software Engineering: Special Issue on Software Maintenance, March 1987, Volume SE-13, No. 3, pp.335-343.

Ken Fuchs and Dennis Kafura, "Memory-Constrained Task Scheduling on a Network of Dual Processors," Journal of the Association for Computing Machinery, Vol. 32, No. 1, January 1985, pp. 102 - 129.

Tim Lindquist, Jeff Facemire and Dennis Kafura, "A Specification Technique for the Common APSE Interface Set," Journal of Pascal, ADA, and Modula-2, Vol. 3, No.5, September/October 1984, pp. 25 - 32.

Kwai-Ting Lan and Dennis Kafura, "Strategy Independent Program Restructuring Using the Critical Reference Principle," Performance Evaluation, Vol. 4, 1984, pp. 105 - 115.

Sallie Henry and Dennis Kafura, "Evaluation of System Structure Using Software Metrics," Software: Practice and Experience, Vol. 14, No. 6, June 1984, pp. 561 - 573.

Dennis Kafura and Sallie Henry, "Software Quality Metrics Based on Interconnectivity," Journal of Systems and Software, Vol. 2, 1981, pp. 121-131.

Sallie Henry and Dennis Kafura, "Software Structure Metrics Based on Information Flow", IEEE Transactions on Software Engineering, Vol. SE-7, No.5, September 1981, pp. 510-518.

James Wittneben and Dennis Kafura, "Working Set Measurements Based on Sampled Reference String Information," Performance Evaluation, Vol. 1, No. 1, January 1981, pp.70-89.

D.Kafura and V.Y.Shen, "An Algorithm to Design the Memory Configuration of a Computer Network", Journal of the Association for Computing Machinery, (25,3), July 1978, pp. 365-377.

D. Kafura and V.Y. Shen, "Task Scheduling on a Multiprocessor System with Independent Memories", SIAM Journal on Computing, Vol. 6, No. 1, March 1977, pp. 167-187.

### Refereed Conferences

A.C. Bart, R. Whitcomb, E. Tilevich, D. Kafura, C. Shaffer, "Computing with CORGIS: Diverse, Real-world Datasets for Introductory Computing," 48<sup>th</sup> ACM Technical Symposium on Computer Science Education (SIGCSE 2017), Seattle, Washington, March 8-11, 2017, pp. 6. Best Research Paper Award.

A.C. Bart, Javier Tibau, Eli Tilevich, Cliff Shaffer, Dennis Kafura, "Implementing an Open-access, Data Science Programming Environment for Learners," 40<sup>th</sup> IEEE Computer Society International Conference on Computers, Software, and Applications (COMPSAC 2016), Atlanta, GA, USA, June 10-14, 2016, 10 pp., (18% acceptance rate)

A.C. Bart, E. Tilevich, C.A. Shaffer, Dennis Kafura, "From Interest to Usefulness with BlockPy, a Block-Based Educational Environment," Blocks and Beyond 2015, Atlanta, GA, USA, October 21-23, 2015, 6 pp.

Austin Cory Bart, Bushra Chowdhury, "Design and Preliminary Results From a Computational Thinking Course," 20<sup>th</sup> Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2015), Vilnius, Lithuania, July 5-8, 2015, 8 pp.

Panagiotis Apostolellis, Michael Stewart, Chir Frisina, and Dennis Kafura, "RabBit EscApe: A Board Game for Computational Thinking," Interaction Design and Children (IDC 2014), Aarhus, Denmark, June 17-20, 2014.

Hussain Almohri, Danfeng Yao, and Dennis Kafura, "DroidBarrier: Know What is Executing on Your Android," 4<sup>th</sup> ACM Conference on Data and Application Security and Privacy (CODASPY'14), March 3-5, 2014, San Antonio, TX.

Peter Radics, Denis Gracanin, Dennis Kafura, "preprocess Before you Build: Introducing a Framework for Privacy Requirements Engineering," 2013 International Conference on Social Computing (SocialCom'13), September 8-14, 2013, Washington, D.C., USA, pp. 10. (9.6% acceptance rate)

Dennis Kafura, Tom Dehart, Manuel Perez-Quinones, Denis Gracanin, Andrea Kavanaugh, "Enhancing Tools for Community Privacy," Privacy Enhancing Tools Workshop (PETools), July 9, 2013, Indiana University, Bloomington, IN, USA, 3pp.

Dennis Kafura and Denis Gracanin, "An Information Flow Control Meta-Model", 18<sup>th</sup> ACM Symposium on Access Control Models and Technologies (SACMAT), June 12-14, 2013, Amsterdam, The Netherlands, pp.11. (30% acceptance rate.)

Karim Elish, Yipan Deng, Danfeng Yao, Dennis Kafura, "Device-Based Isolation for Securing Cryptographic Keys," Third International Symposium on Internet of Ubiquitous and Pervasive Things (IUPT 2013), June 25-28, 2013, Halifax, Nova Scotia, Canada, pp. 10.

Sherley Codio, Dennis Kafura, Manuel Perez-Quinones, Dennis Gracanin, Andrea Kavanaugh, "A Case Study of Community Privacy," 2012 ASE International Conference on Social Informatics, December 14-16, 2012, Washington, D.C., pp.10.

Sherley Codio, Dennis Kafura, Manuel Perez-Quinones, Andrea Kavanaugh, Denis Gracanin, "Identifying Critical Factors of Community Privacy," 2012 ASE International Conference on Privacy, Security, Risk and Trust (PASSAT'12), September 3-5, 2012, Amsterdam, The Netherlands, pp. 10.

Dennis Kafura, Denis Gracanin, Manuel Perez, Tom DeHart, "An Approach to Community-Oriented Email Privacy," Third IEEE International Conference on Information privacy, Security, Risk and Turst (PASSAT 2011), MIT, Boston, MA, October 9-11, 2011, pp.8 (8% acceptance rate.)

Hussain Almohri, Danfeng Yao, Dennis Kafura, "Identifying Native Applications with High Assurance," Second ACM Conference on Data and Application Security and Privacy (COSASPY 2012), San Antonio, TX, February 7-9, 2012, pp.8.

Dennis Kafura and Deborah Tatar, "Initial Experience with a Computational Thinking Course for Computer Science Majors," 42nd ACM Technical Symposium on Computer Science Education (SIGCSE'11), March 9-12, 2011, Dallas, TX, 6 pages.

Markus Lorch, Dennis Kafura, Ian Fisk, Kate Keahey, Gabriele Carcassi, Tim Freeman, Timur Peremutov, Abhishek Singh Rana, "Authorization and Account Management in the Open Science Grid," 6th IEEE/ACM International Workshop on Grid Computing, November

13-14, 2005, Seattle, Washington, pages 17-24.

Markus Lorch, Jim Basney, Dennis Kafura, "A Hardware-secured Credential Repository for Grid PKIs," 4th ACM/IEEE International Symposium on Cluster Computing and the Grid (CCGrid 2004), April 14-19, 2004. Chicago, IL.

Markus Lorch, Seth Proctor, Rebekah Lepro, Dennis Kafura, Sumit Shah, "First Experiences Using XACML for Access Control in Distributed Systems," Proceedings: ACM Workshop on XML Security 2003, October 31, 2003, Fairfax, VA, pp. 25-37.

Markus Lorch, Dennis Kafura, Sumit Shah, "An XACML-based Policy Management and Authorization Service for Globus Resources", work in progress paper, 4th International Workshop on Grid Computing - Grid 2003, 17 November 2003, Phoenix, AR, pp. 208-211.

Markus Lorch, David Adams, Dennis Kafura, Madhu Koneni, Anand Rathi, Sumit Shah, "The PRIMA System for Privilege Management, Authorization and Enforcement in Grid Environments", 4th International Workshop on Grid Computing - Grid 2003, 17 November 2003 in Phoenix, AR, pp. 109-116.

Markus Lorch and Dennis Kafura, "Supporting Secure Ad-hoc User Collaboration in Grid Environments", Proceedings of the 3rd International Workshop on Grid Computing - Grid 2002, Baltimore, MD, USA, November 18th, 2002, pp. 181 -193 (Springer Lecture Notes in Computer Science - LNCS 2536 - ISBN 3-540-00133-6).

Markus Lorch and Dennis Kafura, "Symphony - A Java-Based Composition and Manipulation Framework for Computational Grids," Proceedings of the 2nd IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid2002), pp.136-143, May 21-24, 2002, Berlin, Germany.

Clifford A. Shaffer, Layne T. Watson, Dennis G. Kafura, and Naren Ramakrishnan, "Features of Problem Solving Environments for Computational Science," Proceedings High Performance Computing Symposium 2000, A. Tentner (Ed.), Soc. for Computer Simulation International, San Diego, CA, 2000, April, 2000, pp. 242-247.

Clifford A. Shaffer, Layne T. Watson, and Dennis G. Kafura, "Component Frameworks for Problem Solving Environments in Computational Science" in Proceedings of the RACDIS Symposium, Volume I, 1999, pp. 653-656.

Ashish Shah and Dennis Kafura, "Symphony: A Java-based Composition and Manipulation Framework for Distributed Legacy Resources," Proceedings: International Symposium on Software Engineering for Parallel and Distributed Systems, May 1999, Los Angeles, CA, pp. 2-12.

Dennis Kafura and Liya Huang, "Collective Communication and Communicators in mpi++," Proceedings: MPI Developers Conference, Notre Dame, Indiana, July 1-2, 1996, pp.79-86.

Manibrata Mukherji and Dennis Kafura, "CCE: A Process-Calculus Based Formalism for Specifying Multi-Object Coordination", Proceedings: First International Conference on Coordination Languages and Models (Coordination '96), Cesena, Italy, April 15-17, 1996. Also published as Lecture Notes on Computer Science, Number 1061, pp. 285-304.

Dennis Kafura and Liya Huang, "mpi++: A C++ Language Binding for MPI," MPI Developers Conference, Notre Dame, Indiana, June 1995, accessible at: <http://www.cse.nd.edu/mpidc95/>

G. Lavender, D. Kafura and R. Mullins, "Programmings with ASN.1 Using Polymorphic Types and Type Specialization," Proceedings: 1994 IFIP International Conference on Upper Layer Protocols, Architectures and Applications, eds. M. Medina and N. Borenstein, June 1-3, 1994, pp. 151-166.

John Lewis, Sallie Henry, Dennis Kafura and Robert Schulman, "Human Factors and Software Reuse: the Manager's Impact", Proceedings: ACM 30th Southeast Conference, April 1992, Raleigh, N.C., pp. 173-181.

Greg Lavender and Dennis Kafura, "The Synergy Between Object-Oriented Programming and Open System Interconnection," Proceedings: Workshop on Object-Oriented Software Engineering Practice, Denver, CO, February 5-7, 1992.

John Lewis, Sallie Henry, Dennis Kafura and Robert Schulman, "An Empirical Study of the Object-Oriented Paradigm and Software Reuse," Proceedings: 1991 Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA91), Phoenix, AZ, October 9-13, 1991, pp. 184-196.

Doug Washabaugh and Dennis Kafura, "Distributed Garbage Collection of Active Objects," Proceedings: 11th International Conference on Distributed Computing Systems, Arlington Texas, May 20-24, 1991, pp. 369-377.

Doug Washabaugh and Dennis Kafura, "Incremental Garbage Collection of Active Objects for Real-Time Applications," Proceedings: 11th Real-Time Systems Symposium, Orlando, Florida, December 5-7, 1990, pp. 21-30.

Dennis Kafura and Ashok Yerneni, "Reliability Using Complexity Metrics," Proceedings: Eight Annual Pacific Northwest Software Quality Conference, Portland, Oregon, October 30-31, 1990, pp 122-134.

Dennis Kafura, Doug Washabaugh and Jeff Nelson, "Garbage Collection of Actors," Proceedings: OOPSLA/ECOOP'90, Ottawa Canada, October 21-25, 1990, pp. 126-134.

D.G. Kafura and K.H. Lee, "Inheritance in Actor Based Concurrent Object-Oriented Languages," Proceedings: Third European Conference on Object-Oriented Programming, Nottingham, England, July 10-14, 1989, p. 131-146.

Sallie Henry and Dennis Kafura, "A Reliability Model Based on Software Quality Factors," Proceedings: Annual National Joint Conference on Software Quality and Reliability, Arlington, Virginia, March 1-3, 1988, pp. 340-352.

Dennis Kafura and James Canning, "A Validation of Software Metrics Using Many Metrics and Two Resources," Proceedings: Eighth International Conference on Software Engineering, London, England, August 1985, pp. 378 - 385.

Dennis Kafura, "A Survey of Software Metrics", Proceedings: 1985 ACM Annual Conference, Denver, Colorado, October 14-16, 1985, pp. 502-506.

Dennis Kafura and Sallie Henry, "Software Quality Measurement: Recent Experience and New Tools," Proceedings: Eighth Annual Minnowbrook Workshop on Software Performance Evaluation, July 1985.

Dennis Kafura, James Canning and Gereddy Reddy, "The Independence of Software Metrics Taken at Different Life Cycle Stages," Proceedings: Ninth Annual Software Engineering Workshop, NASA/Goddard, November 1984, pp. 213 - 230.

Dennis Kafura "Analyzing the Structure of Software Systems Using Software Metrics," Proceedings:Fifth Minnowbrook Workshop on Software Performance Evaluation, July 20-23, 1982.

D.G. Kafura, S.M. Henry and K. Harris, "On the Relationships Among Three Software Metrics," Proceedings: 1981 ACM SIGMETRICS Symposium on Measurement and Evaluation of Software Quality In Performance Evaluation Review, Vol 10, No. 1, Spring 1981, pp.81-88.

James Wittneben and Dennis Kafura, "A Simple Reference String Sampling Method," Proceedings: 1980 ACM Annual Conference, October 27-29, 1980, Nashville Tennessee, pp. 191-196.

D. Kafura, "Scheduling Tasks with Critical Sections," Proceedings: 1977 ACM National Conference, October 1977, pp.381-385.

D. Kafura, "Task Scheduling with Critical Section Constraints," Proceedings IFIP-77 Conference, August 1977, pp.553-558.

D. Kafura and V.Y. Shen, "Scheduling Independent Tasks on Processors of Different Speeds," Proceedings: Ninth Hawaii International Conference on Systems Sciences, January 1976.

D. Kafura and V.Y. Shen, "Scheduling Independent Processors with Different Storage Capabilities," Proceedings: 1974 ACM National Conference, November 1974, pp. 161-166.



### Invited Papers

D. Kafura and G. Lavender, "Concurrent Object-Oriented Languages and the Inheritance Anomaly," Proceedings: International Summer Institute on Parallel Computer Architectures, Languages and Algorithms, Prague, Czech Republic, July, 1993.

Dennis Kafura and Greg Lavender, "The Application of Concurrent Object-Oriented Techniques to Reactive Systems," NATO Defense Research Group Workshop on Object-Oriented Modelling of Distributed Systems, Quebec Canada, May 12-15, 1992.

### Workshop Reports

Dennis Kafura, Greg Lavender, Doug Schmidt, "Workshop on Design Patterns for Concurrent, Parallel and Distributed Object-Oriented Systems," to appear.

Dennis Kafura, Siva Challa, and Greg Lavender, "Workshop on Multi-Language Object Models," Addendum to the OOPSLA Workshop, Editor: Mark Wilkes, OOPS Messenger, Vol. 5, No. 4, October, 1994.

### Other Publications

Dennis Kafura and Jean-Pierre Briot, "Guest Editor's Introduction: Actors and Agents," IEEE Concurrency, Vol. 6, No. 2, April-June, 1998, pp. 24-28.

Dennis Kafura and Marc Abrams, "Adapting Protocols to Massively Interconnected Systems," Proceedings: 1991 Systems Design Synthesis Technology Workshop, Naval Surface Warfare Center, Silver Springs, MD, September 10-13, 1991, pp. 233-252.

Dennis Kafura and Greg Lavender "Recent Progress and Problems in Combining Actor-Based Concurrency with Object-Oriented Programming," Proceedings: ECOOP- OOPSLA-Workshop on Object-Based Concurrent Programming, October 21-22, 1990, Ottawa, Canada, OOPS Messenger (Vol. 2, No. 2) April 1991, pp. 55-58.

Dennis Kafura, Doug Washabaugh, Jeff Nelson, "Progress in the Garbage Collection of Active Objects," Proceedings: ECOOP-OOPSLA Workshop on Object-Based Concurrent Programming, October 21-22, 1990, Ottawa, Canada, OOPS Messenger (Vol. 2, No. 2) April 1991, pp. 59-63.

Dennis Kafura, "Concurrent Object-Oriented Real-Time Systems Research", SIGPLAN Notices, Vol. 24, No. 4, Special Issue: Workshop on Object-Based Concurrent Programming, San Diego, CA, September 26-27, 1988.

G.D. Gustafson, S.M. Henry, D. Hutchens, D.G. Kafura and J. Sayler, "Predicting Cost-of-Change from Design Structure Metrics," ACM SIGSOFT Software Engineering Notes, (7,1) January 1982, pp. 30-35.

## Position Papers

Dennis Kafura and Greg Lavender, “Synergy: A Foundation for Large-Scale Distributed Applications,” presented at the Workshop on Object-Oriented Large-Scale Distributed Applications held in conjunction with the OOPSLA 92 Conference, Vancouver Canada, October 17, 1992.

Dennis Kafura, “Issues in the Application of Object-Oriented Techniques to Real-Time Systems,” presented at the Workshop on Object-Oriented Real-Time Systems: Past, Present and Future held in conjunction with the OOPSLA 92 Conference, Vancouver Canada, October 16, 1992.

Dennis Kafura, “Positions on Object-Based Concurrency,” Workshop on Object-Based Concurrency (limited attendance) held in conjunction with the Third European Conference on Object-Oriented Programming, July 10-14, 1989, Nottingham, England.

Dennis Kafura, “Concurrent Object-Oriented Real-Time Systems Research,” Workshop on Concurrent Object-Oriented Programming (limited attendance) held in conjunction with OOPSLA ‘88 Conference, September 25-26, San Diego, California.

Dennis Kafura, “Concurrent Object-Oriented Real-Time Systems Research,” Workshop on Real-Time Systems, (limited attendance) held in conjunction with OOPSLA ‘88 Conference, September 25-26, San Diego California.

Dennis Kafura, “Applying Actor and Inheritance Principles to Real-Time Systems,” Fifth IEEE-USENIX Workshop on Real-Time Software and Operating Systems, May 12-13, 1988, Washington, D.C.

## **GRANTS and DONATIONS**

### Research Grants

Sponsor: National Science Foundation  
Title: A Scaffolded Data-Centric Approach to Improved Learning of Introductory Computing Concepts  
Amount: \$594,314  
Period: August 10, 2016 – August 9, 2019  
Role: Dennis Kafura (PI), Cliff Shaffer, Eli Tilevich, Jeremy Ernst, Kathy Cennamo (Co-PIs)

Sponsor: National Science Foundation  
Title: Scaffolding Big Data for Authentic Learning of Computing  
Amount: \$97,658  
Period: September 1, 2014 – August 31, 2016  
Role: Dennis Kafura (PI), Cliff Shaffer and Eli Tilevich (Co-PIs)

Sponsor: National Science Foundation  
Title: Planning Grant: Integrating Computational Thinking into Middle School Curriculum  
Amount: \$199,998  
Period: December 1, 2011 - May 1, 2013  
Role: Deborah Tatar (PI), Co- PI (with Steve Harrison, Manuel Perez).

Sponsor: Carilion Clinic Research Department, Institute for Bimedical and Public Health Science, and Institute for Critical Technologies and Applied Science  
Title: Development of Trauma Surgery Simulation Software  
Amount: \$50,000  
Period: January 1, 2006 - December 31, 2006  
Role: Co- Investigator (with PI: J. Capella, Co-Investigators: S. Vail, D. Crouse , C. Gilbert , F. Quek, D. Bowman).

Sponsor: National Science Foundation  
Title: Alliance Between Historically Black Universities and Research Universities for Collaborative Education and Research in Computing Disciplines  
Amount: \$103,000 (Virginia Tech share)  
Period: March 1, 2006- February 26, 2009  
Role: Co-principal Investigator (with Scott McCrickard (Virginia Tech)).

Sponsor: National Science Foundation  
Title: Déjà vu: Transparent Checkpointing and Migration of Parallel Codes Over Grid Infrastructures  
Amount: \$1.067 million  
Period: April 15, 2004 - April 14, 2006  
Role: Co-principal Investigator (with Nathan Ston (CMU/PSC), Michael Webb (ISR), and Cal Ribbens (Virginia Tech)). PI: S. Varadarajan.

Sponsor: Fermi National Accelerator Laboratory  
Title: Fine-Grain Authorization in Grid Environments  
Amount: \$130,000  
Period: December 1, 2003 - September 30, 2005  
Role: Principal Investigator

Sponsor: Computer Information Security Center  
Title: A Security Architecture to Enable User Collaboration in Computational Grids: Phase III  
Amount: \$40,000  
Period: August 15, 2003 - June 30, 2004  
Role: Principal Investigator

Sponsor: Commonwealth Technology Research Fund  
Title: Collaborative Research in Bioinformatics  
Amount: \$2,500,201

Period: July 1, 2001 - June 30, 2004  
 Role: Co-principal Investigator

Sponsor: Computer Information Security Center  
 Title: A Security Architecture to Enable User Collaboration in Computational Grids: Phase II  
 Amount: \$59,973  
 Period: August 15, 2002 - August 14, 2003  
 Role: Principal Investigator

Sponsor: Virginia Tobacco Settlement Foundation  
 Title: Virginia Tobacco Initiative for the Biologic Discovery and Digital Education Project  
 Amount: \$48,000  
 Period: July 1, 2002 - June 30, 2003  
 Role: Principal Investigator

Sponsor: Computer Information Security Center  
 Title: A Security Architecture to Enable User Collaboration in Computational Grids  
 Amount: \$18,423  
 Period: January 1, 2002 - June 30, 2002  
 Role: Principal Investigator

Sponsor: National Science Foundation (Biocomplexity Incubation Activity)  
 Title: A Collaborative Problem Solving Environment for Computational Modeling of Eukaryotic Cell Cycle Controls  
 Amount: \$100,000  
 Period: August 1, 2000 - September 30, 2001  
 Role: Investigator

Sponsor: National Science Foundation  
 Title: A Collaborative Problem Solving Environment for Modeling of Broadband Wireless Communication Systems  
 Amount: \$1 million  
 Period: July 1999 - June 2002  
 Role: Investigator

Sponsor: National Science Foundation  
 Title: Language and System Support for Concurrent Object-Oriented Programming  
 Amount: \$183,496  
 Period: September 15, 1991 - September 14, 1993  
 Role: Principal Investigator

Sponsor: Microelectronics and Computer Technology Corporation (MCC)  
 Title: Porting the ES/Kit Software to the Sequent/Symmetry  
 Amount: \$13,100

Period: November 1, 1990 - May 1, 1991  
 Role: Principal Investigator

Sponsor: Software Productivity Consortium & Center for Innovative Technology  
 Title: Definition and Validation of a Reliability Model Incorporating Software Metric Factors  
 Amount: \$192,000  
 Period: July 1, 1988 - August 31, 1989  
 Role: Co-Principal Investigator (with Dr. Sallie Henry)

Sponsor: Digital Equipment Corporation  
 Title: Validation and Calibration of Software Metrics for Digital's Environment  
 Amount: \$7,500  
 Period: June 13, 1987 - September 4, 1987  
 Role: Co-Principal Investigator (with Dr. Sallie Henry)

Sponsor: Naval Surface Weapons Center  
 Title: The Application of Software Complexity Metrics to THLL/Trident Software  
 Amount: \$25,662  
 Period: June, 1986 - December, 1986  
 Role: Co-Principal Investigator (with Dr. Sallie Henry)

Sponsor: National Science Foundation  
 Title: Validation and Application of Software Metrics to Design and Maintenance  
 Amount: \$89,966  
 Period: June 1, 1985 - December 31, 1989  
 Role: Co-Principal Investigator (with Dr. Sallie Henry)

Sponsor: Center for Innovative Technology  
 Title: Software Structure Analysis: Tools and Techniques  
 Amount: \$37,634  
 Period: April 1, 1985 - September 30, 1985  
 Role: Co-Investigator (with Dr. Sallie Henry)

Sponsor: IBM Federal Systems Division  
 Title: Development of A Project Scheduling Model  
 Amount: \$48,375  
 Period: March 1, 1985 - June 30, 1986

Sponsor: ADA Joint Program Office  
 Title: Specification of Kernel ADA Support Interfaces and Validation Techniques of Asynchronous Facilities  
 Amount: \$80,816  
 Period: June 15, 1984 - June 15, 1985  
 Role: Co-Principal Investigator (with J.A.N. Lee and Tim Lindquist)

Sponsor: Office of Naval Research  
Title: Development of an Extended APSE Model and KAPSE  
Specification/Validation Techniques  
Amount: \$85,540  
Period: July, 1983 - July, 1984  
Role: Co-Principal Investigator (with J.A.N. Lee and Tim Lindquist)

Sponsor: Office of Naval Research  
Title: Validation of the ADA APSE Environment  
Amount: \$21,000  
Period: Summer, 1982  
Role: Co-Principal Investigator (with J.A.N. Lee and Tim Lindquist)

Sponsor: National Science Foundation Grant (MCS8207110)  
Title: A Comprehensive Study of Software Metrics for Large-Scale Systems  
Amount: \$75,382  
Period: July 1981 - October 1984  
Role: Principal Investigator

Sponsor: National Science Foundation Grant (MCS7902970).  
Title: On the Relationship Between Performance and Structure Metrics.  
Amount: \$9,335  
Period: Summer, 1980  
Role: Principal Investigator

Sponsor: National Science Foundation Grant (MCS7902970).  
Title: A Reference String Sampling Technique for Time-Critical Systems  
Amount: \$55,886  
Period: July 1, 1979 - June 30, 1981  
Role: Principal Investigator

#### Equipment Grants

Sponsor: Center for Innovative Technology  
Title: Research Equipment for Experiments in Information Technology  
Amount: \$75,000  
Period: July 1, 1984 - June 30, 1985  
Role: Co-Principal Investigator (with Dr. Sallie Henry)

Sponsor: National Science Foundation Grant (MCS8404214)  
Title: Computer Research Equipment  
Amount: \$85,000  
Period: 1984-85  
Role: Co-Principal Investigator (with Drs. James Arthur, Roger Ehrich, Osman Balci and John Roach)

Sponsor: Digital Equipment Corporation  
Title: Interfaces, Metrics, and Tool Constructors  
Amount: \$300,000 (matching funds)  
Period: 1984-85  
Role: Co-Principal Investigator (with Drs. James Arthur, Sallie Henry and Roger Ehrich)

Sponsor: Department of Defense  
Title: Research in Naval Combat Systems through the Systems Research Center at Virginia Tech  
Amount: \$215,000  
Period: 1984-85  
Role: Co-Principal Investigator (with Drs. Richard Nance, Osman Balci and James Arthur)

#### Other Grants

Travel Grant, Virginia Tech, \$900, to attend the European Conference on Object-Oriented Programming, July 10-14, Nottingham England.

Real-Time Research Meeting, \$3,000, Virginia Center for Innovative Technology, to organize and sponsor meeting of researchers from George Mason University, University of Virginia, William and Mary, Old Dominion University and Virginia Tech, Center for Innovative Technology headquarters, Reston Virginia, July 28, 1989.

#### Equipment Donations

Donated by: AT&T  
Purpose: Equipment for Graduate Education in Computer Science and Education in Engineering Science and Mechanics  
Value: \$1 million  
Date: 1986  
Role: Co-proposer (with Dr. Ed Fox)

Donated by: AT&T  
Purpose: Equipment for Graduate Education and Laboratories in Computer Science  
Value: \$1 million  
Date: 1987  
Role: Co-proposer (with Dr. Ed Fox)

## INVITED PRESENTATIONS

### National Lectureship Invitations

#### ACM National Lectureship Series:

- 1984: Boston Professional Chapter  
University of Lowell Student Chapter  
University of Kansas Student Chapter  
University of Nebraska Student Chapter  
University of Montana Student Chapter
- 1985: Cleveland Professional Chapter  
University of Akron Student Chapter  
Tulane University Student Chapter  
L.S.U. Student Chapter  
Shreveport, LA Professional Chapter  
University of Denver Student Chapter  
Boulder, CO. Professional Chapter  
Pike's Peak Professional Chapter  
Phoenix Professional Chapter
- 1986: Pike's Peak Professional Chapter  
Colorado Springs Professional Chapter  
University of Colorado (Colorado Springs) Student Chapter  
Denver Professional Chapter  
Buffalo Professional Chapter  
Canesius College  
University of Michigan, Flint  
Central Michigan University  
Detroit Professional Chapter
- 1987: Wright State University  
James Madison University  
Ekerd College  
University of South Florida  
Tampa Professional Chapter
- 1988: University of Virginia  
University of Illinois  
Illinois State University  
University of Tulsa  
Oklahoma State University  
Wichita State University



- 1989: Cleveland Professional Chapter  
Hampton University  
College of William and Mary  
Texas Tech  
San Angelo State University  
University of Texas (Arlington)
- 1990: Tulane University  
University of Southwest Louisiana
- 1991: Ohio State University  
Mary Washington College  
Elon College  
The University of Iowa  
St. Ambrose College  
Iowa State University  
SUNY/Plattsburgh  
University of Vermont  
St. Michaels College
- 1992: Clemson University  
University of Virginia  
East Tennessee State University  
Temple University  
Allegheny College

#### Other Presentations

A Security Architecture to Enable Ad-hoc Collaboration in Computational Grids  
(with Markus Lorch and Jerome Holman)  
Commonwealth Information Security Center  
James Madison University  
June 27, 2002

Supporting Flexible and Secure Access to Grid Resources  
(with Markus Lorch)  
Commonwealth Information Security Center  
James Madison University  
February 24, 2003

The Inheritance Anomaly in Concurrent Object-Oriented Programming  
Department of Computer Science  
University of Montreal  
March 10, 1993

Issues in Concurrent Object-Oriented Programming  
Department of Computer Science  
Royal Military Academy (Quebec)  
March 11, 1993

Reuse Aspects of Concurrent Object-Oriented Programming  
CIT/SPC Workshop on Software Reuse  
Herndon, VA  
April 29, 1993

Principles of Object-Oriented Programming  
ACM Student Chapter  
Virginia Tech  
October 13, 1993

Principles of Object-Oriented Programming  
Upjohn Corporation, Kalamazoo, Michigan  
February 22, 1991

Concurrency Control in Concurrent Object-Oriented Languages  
Department of Computer Science, Ohio State University  
January 31, 1991.

Software Metrics  
IBM Federal Systems Division  
September 1983.

Software Quality Metrics  
A set of five lectures in the Visiting Professor Series  
North Texas State University,  
April 1981.

A Survey of Processor Scheduling: Models and Results  
University of Nebraska,  
April 1979.  
Security in Distributed Systems,  
Department of Computer Science, Iowa State University  
April 1979.

Designing the Memory Configuration of a Computer Network,  
Department of Computer Science, University of Minnesota  
October 1977.

## DISSERTATION AND THESIS SUPERVISION

### Ph.D. Dissertations Supervised

Markus Lorch, PRIMA: Privilege Management and Authorization in Grid Computing Environments, Virginia Tech, 2004.

Siva Challa, Improving Polymorphism and Concurrency in Common Object Models, Virginia Tech, January, 1998.

Susan Keenan, Product Usability and Process Improvement Based on Usability Problem Classification, Virginia Tech, August, 1996, Co-Advisor with Dr. Rex Hartson.

Manibrata Mukherji, Specification of Multi-Object Coordination Schemes Using Coordinating Environment, Virginia Tech, July, 1995.

R. Greg Lavender, Polymorphic Types for Constructing Concurrent Objects and Layered Communication Protocols, Virginia Tech, May 1993.

Keung Lee, Designing a Statically Typed Actor-Based Concurrent Object-Oriented Programming Language, Virginia Tech, June, 1990.

Atika Laribi, A Protection Model for Distributed Data Base Management Systems, Virginia Tech, 1985

James Canning, The Application of Structure and Code Metrics to Large Scale Systems, Virginia Tech, 1985.

Kwai-Ting Lan, Program Restructuring Based on Sampled Reference String Data, Iowa State University, 1981.

Wei-Ju Chen, Analysis of a Pipelined Pascal Compiler, Iowa State University, 1981.

James Wittneben, Design and Evaluation of a Reference String Sampling Method, Iowa State University, 1979.

Sallie Henry, Information Flow Metrics for the Evaluation of Operating Systems' Structure, Iowa State University, 1979.

### M.S. Students Supervised

Sherley Codio, Understanding Community Privacy Through Focus Group Studies, MS Thesis, May, 2012.

Ashish Shah, *Symphony: A Java-based Framework for Composing and Manipulating Distributed Legacy Resources*, MS Thesis, March 1998.

Horace Sequeria, *Concurrent Extensions to Mach Using Actors*, December, 1995.

Jae-Woong Hwang, *OODSF: An Object-Oriented Data Specification Framework in a Heterogeneous Computing Environment*, , November, 1995.

Sanjay Chopra, *Class Hierarchy Design for Space Time Problems*, July, 1995.

Guy Acciai, *Design and Implementation of a Reactive Systems Laboratory*, January, 1995. .

Arjun Khare, *Implementation of the Actor Model Using POSIX Threads*, July, 1994.

Venkateswara Rao Vykunta, *Class Management in a Distributed Actor System*, July, 1994.

Rajiv Gandhi, *Communication Infrastructure for a Distributed Actor System*, June, 1994.

Wendy Long, *CATY: An ASN1-C++ Translator in Support of Distributed Object-Oriented Applications*, April, 1994.

Rajesh Khera, *The Design of a C++ Class Hierarchy to Model ASN.1 Data Types*, January, 1994.

Robert Mullins, *Separating Representation from Translation of Shared Data in a Heterogeneous Computing Environment*, September, 1993.

Nandan Joshi, *ACTKIT: An Implementation of ACT++ Using MCC's ESP*, August, 1993.

Gilles Carlo, *Dynamic Loading and Class Management in a Distributed Actor System*, Virginia Tech, July, 1993.

Joel Patterson, *Porting ES-Kit to the Sequent Symmetry*, May 1993.

Manibrata Mukherji, *Implementing ACT++ Using the Presto Lightweight Threads Package*, Virginia Tech, February, 1992.

Carol (Chien-Hsi) Chou, *Visi-Actor: A Graphical User Interface for Visualizing an Actor System*, Virginia Tech, February, 1992.

Vikul Khosla, *A Concurrent Object-Oriented Method for the Requirements Analysis and Design of Embedded Systems*, Virginia Tech, November 1991.

Doug Washabaugh, *Real-Time Garbage Collection of Actors in a Distributed System*, Virginia Tech, February, 1990.

Ashok Yerneni, *A Reliability Model Incorporating Software Quality Metrics*, Virginia Tech, September 1989.

Mathew Mathai, *A Study of the Network File System*, Virginia Tech, April 1989.

Jeff Nelson, *Automatic, Incremental, On-the-fly Garbage Collection of Actors*, Virginia Tech, February, 1989.

Amal Chakraborty, *Porting of X Window Management System to AT&T UNIX PC-7300*, Virginia Tech, 1988.

Nagesh Pabbisetty, *A Graphical Data Analysis Interface to the Software Metric Analyzer*, Virginia Tech, 1988.

Murali Srinivasan, *Porting the X Window Communication Primitives*, Virginia Tech, 1988.

Carlos Fernandez, *An X.400-based User Agent for Workstations*, Virginia Tech, 1987.

Keung Lee, *Design of the Unix TCP/IP Subsystem*, Virginia Tech, 1986.

Samir Gulve, *A Fortran Front-end for a Software Metric Analyzer*, Virginia Tech, 1986.

Eric Turner, *Considerations on Writing a Software Tool to Support a Data Flow Diagram Design Methodology*, Virginia Tech, 1985.

Rakesh Jha, *Use of ADA in Embedded Real-Time Distributed Applications - Issues in Runtime Support*, Virginia Tech, 1984.

Raman Khanna, *Integration of Personal Computers in a Local Area Network for a University Campus*, Virginia Tech, 1984.

Gereddy Reddy, *Application of Software Quality Metrics to a Relational Data Base System*, Virginia Tech, 1984.

David Brady, *Implementation of the Concurrent Pascal Virtual Machine in a High-Level Systems Programming Language*, Iowa State University, 1981.

Dong-Lih Denq, *A Commentary on the Portable 'C' Compiler*, Iowa State University, 1981.

Danesh Forouhari, *Implementing UNIX on a Microprocessor-Based System*, Iowa State University, 1981.

Frank Papierniak, *Modifications to the PL-Modula Compiler to Generate Code for the HP9845*, Iowa State University, 1981.

Mohammad Azadmanesh, *Modifications to the SOLO Operating System for a Micro -processor-Based Machine*, Iowa State University, 1981.

James Canning, *Validation and Extension of a Reference String Sampling Method*, Iowa State University, 1981.

James Harper, *Timing Studies of Two Cryptographic Systems Implemented in Software*, Iowa State University, 1980.

Kaoru Suzuki, *A Survey of Real-Time Languages*, Iowa State University, 1979.

Tom Fritz, *A Commentary on the Concurrent Pascal Virtual Machine*, Iowa State University, 1979.

Roger Shultz, *A Two-Server Queue with Memory Constraints*, Iowa State University, 1978.

Ken Fuchs, *Bounds on Largest Memory First Scheduling for a Network of Multiprocessing Computers*, Iowa State University, 1978.

Husni Al-Sayed, *Cache Memory Application to Microcomputers*, Iowa State University, 1978.

## **SERVICE**

### Professional Service

#### Conference Panels and Committees:

OOPSLA '2000 Doctoral Symposium Chairman (November, 2000)  
OOPSLA '98 Doctoral Symposium committee member (October, 1998)  
OOPSLA '97 Doctoral Symposium committee member (October, 1997)  
COOTS'96 (Conference on Object-Oriented Technology and Systems)  
program committee member, 1996

#### Guest Editor:

IEEE Concurrency, Special Series on "Actors and Agents" with Jean-Pierre Briot of the Laboratoire d'Informatique de Paris.

#### Workshop Organizer

Co-organized with R. Greg Lavender and Doug Schmidt: Workshop on Design Patterns for Concurrent, Parallel, and Distributed Object-Oriented Systems at the OOPSLA '95 conference.

Co-organized with R. Greg Lavender: Workshop on Multi-Language Object Models at the OOPSLA'94 conference.

### Session Chairman

Session Chair: Information Technology and Electronic Health Records, Workshop on Medical Home, June 30, 2010, Alexandria, VA.

Panel Session Chairman: "Real-Time Scheduling: Is It For Real?" Sixth IEEE-USENIX Workshop on Real-Time Software and Operating Systems, May 11-12, 1989, Pittsburgh, PA.

Organized and chaired the meeting of real-time researchers from George Mason University, University of Virginia, William and Mary, Old Dominion University and Virginia Tech, Center for Innovative Technology headquarters, Reston, Virginia, July 28, 1989.

Software Engineering Education Panel, 1st Annual Software Productivity Workshop, April 9-10, 1987, Reston Virginia.

Software Engineering Session: 1986 Computer Science Conference.

Scheduling Session: 1977 International Conference on Parallel Processing.

### Proposals Reviews

National Science Foundation

Research Proposals (1979, 1980, 1983, 1985, 1986, 1988)

Software Engineering Program (Jan. 1991, Nov. 1991, 1992, 1993, 1994)

Operating Systems and Systems Software Program: panel reviews (Sept., 1994, Oct. 1994, Jan. 1996, Jan. 1997)

National Science Foundation

Small Business Innovative Research Program

Panel Reviewer (1986, 1987, 1988, 1989, 2006, 2012)

National Science Foundation

Research Initiation Awards

Panel Reviewer (1988)

National Science Foundation

Research In Undergraduate Institutions Program (1988, 1991)

National Science Foundation

Panel Review: Parallel Computing Theory (1989)

Panel Review: Secure and Trustworthy Computing (2012)

Nebraska EPSCoR Office, Early CAREER Proposal review (March, 2010)  
National Sciences and Engineering Research Council of Canada (January, 1996)

Armenian-U.S. Bilateral Grants Program, U.S. Civilian Research and Development Foundation (June, 2002)

Villanova University  
Faculty Summer Research Grant Program (1993)

### Journal Reviews

Theory and Practice of Object Systems (1995)  
IEEE Transactions on Software Engineering (1981,1984, 1985, 1986, 1989, 1991, 1993, 1994, 1997)  
IEEE Software (1989, 1991, 1994)  
IEEE Transactions on Computers (1991)  
IEEE Transactions on Parallel and Distributed Computing (1992, 1993, 1994, 2000)  
Software: Practice and Experience (1983, 1984, 1985)  
Transactions on Computer Systems (1984, 1986,1987)  
Performance Evaluation (1983, 1986, 1987)  
Journal of Systems and Software (1982, 1983, 1986)  
SIAM Journal on Computing (1976, 1978, 1984)  
ACM Transactions on Computer Systems (1987)  
ACM Computing Surveys (1993, Jan. 1996, March 1996, April 1996, June 1997, Nov. 1997)  
Annals of Software Engineering (1994, 1996, 1997)

### Conferences Reviews

ACM SIGCSE (2017)  
ACM CHI Conference (2014)  
International Conference on High Performance Computing (1995)  
International Conference on Software Engineering (1982,1983, 1986)  
Hawaii International Conference on Systems Sciences (1986,1987, 1990, 1991)  
National ACM Conference (1985)  
4th Symposium on Reliability in Distributed Software and Database Systems (1984)  
SIGGRAPH '80 (1980)  
Symposium on Operating System Principles (1975, 1979)  
International Symposium on Computer Performance Modeling, Measurement and Evaluation (1979, 1980)  
International Conference on Parallel Processing (1976, 1977, 1984)  
5th Texas Conference on Computing Systems (1976)



Conference on Software Maintenance (1987, 1988, 1990)  
International Conference on Distributed Computing Systems (1991)  
Third European Software Engineering Conference (1991)  
6th Workshop on Parallel and Distributed Simulation (1991)

Book Manuscripts, Book Proposals, and Video Proposals Reviews

Reston Publishing (1986)  
D.C. Heath Publishing (1985, 1986, 1987)  
Allyn-Bacon (1985)  
Addison-Wesley (1986,1987: book review, 1987: manuscript review, 1987: book proposal)  
John Wiley (Aug. 1988, July 1988, 1989)  
Boyd&Fraser Publishing Company (1987)  
Brooks/Cole Publishing Company (1987)  
Universal Video Communications (1991, 1992, 1993, 1994, 1995)  
Prentice-Hall (1994)

Promotion and Tenure Evaluations

College of Computing  
Georgia Tech (2005)  
Department of Computer Science  
George Mason University (2005)

Department of Computer Science  
George Mason University (2002)

Department of Computer Science and Engineering  
University of Minnesota (2000)

Department of Computer Science  
University of Alabama - Huntsville (2000)

Department of Information and Software Systems Engineering  
George Mason University (1994)

Department of Computer Science  
University of Lowell (1991)

Department of Computer Science  
University of South Carolina (1988)

## Program Reviews

External Reviewer, proposed M.S. in Computer Science  
Norfolk State University (June, 2002)

Advisory Board Member, Science and Technology Academicians on the Road to  
Success (STARS) program,  
Norfolk State University (2003, 2010, 2011,2013)

## Computing Research Association

Snowbird Meeting of Department Heads and Chairs (1998, 2000,2002, 2004,  
2006, 2008)

## Faculty Advisor

Distributed Computing Club (1997)  
Virginia Tech Programming Team: 1983-1985  
Organizer: Capitol Region Programming Contest: 1984  
Virginia Computer Users Conference: 1983-1988

## University and Departmental Committees

### Departmental Committees (Virginia Tech)

Department Head Search Committee (Chair) 2014-15  
Faculty Search Committee (Chairman, 1998, 1999, 2000, 2001, 2003, 2004, 2005,  
2010, 2011, 2012, 2013)  
Personnel Committee (1991-1994, 2011-2013; 2015-16, Chair: 2013-5)  
Honorifics Committee (2016-17)  
Qualifying Examination Committee (1993-98, 2012, 2013, 2014, 2015)  
Department Head Review Committee (Chairman, 2012)  
40th Anniversary Ad Hoc Committee (2010-11)  
Department Advisory Board (Chairman, 2001-2008)  
VTKW-II Building Design Committee (Chairman, 2006-2007)  
ABET Accreditation Extension Committee (Chairman, 2004)  
Ad Hoc Committee to Establish a Professional Masters Degree and on Option in  
Software Engineering (Chairman) (1998-9)  
Northern Virginia Director Search Committee (Chairman) (1999)  
GPIT Faculty Search Committee (Chairman) (1999)  
Outreach Coordinator Search Committee (Chairman) (1999)  
Graduate Program and Research Activities Committee (Chairman, 1984-91, Mem-  
ber 1994-8)  
Executive Committee (Chairman, 1985-86; Member 1994-96, Chairman 1998-  
2001)  
Five Year Review Committee (Chairman) (1997-98)

Ad-Hoc Committee on Relocating in the College of Engineering (1993)  
Ad-Hoc PC Selection Committee (Chairman) (1991-92)  
Search Committee: Dahlgren Chair (Chairman, 1986 - 88)  
Search Committee: Director of Computer Services (1986-87)  
Search Committee: Assistant-to-the-Head (1988)

#### College of Arts and Sciences Committees (Virginia Tech)

Outstanding Dissertation Award Committee (1987, 1988)  
Promotion and Tenure Committee (1988, 1989, 1998, 1999)  
College Planning Committee (1988)

#### College of Engineering (Virginia Tech)

VT-India Committee (2008)  
Promotion and Tenure Committee (2003-2008, 2014-2015)  
Northern Virginia Stakeholders Committee (member, 2006-2008, 2015)  
Dean Search, College of Engineering (member, 2004-05)  
ECE Department Head Search Committee (member, 2003-2004)

#### University Committees (Virginia Tech)

Pathways Scholar committee (2014-2015)  
Computational Thinking Task Force (member) 2013-14  
Review Committee: Center for Human-Computer Interaction (CHCI) (member, 2010-11)  
Collaborative for Creative Technologies in the Arts and Design (CCTAD) (one of four department heads, 2004-2008)  
Arts Initiative Building Committee (2008)  
Review Committee: Interdisciplinary Center for Applied Mathematics (ICAM) (member, 2003)  
Council of Mid-Eastern Alliance for Minority Participation (MEAP) (member, 2003)  
Policy Subcommittee, Institute for Critical Technologies and Applied Science (ICTAS) (member, 2003)  
Research Computing Task Force (member, 2002)  
Conflict of Interest/Conflict of Commitment Committee (member, 2000-2001)  
Working Group on Bioinformatics (member, 2000-2001)  
Center for Human-Computer Interaction Stakeholders Committee (member, 2000-2001)  
Internet Technology Innovation Center Stakeholders Committee (chair, 2000-2001)  
Systems Research Center Stakeholders Committee (chair, 2000-2001)  
Alexandria Research Institute Stakeholders Committee (member, 2000-2001)  
Committee to Review the Dean of the College of Arts and Sciences (member - 1999-2000)

Committee to Review the Center For Wireless Telecommunications (1999)  
Graduate Program in Information Technology Working Group (1998-2001)  
Northern Virginia Information Technology Working Committee (1999-2000)  
Bioinformatics Task Force (member - 2000)  
Bioinformatics Steering Committee (co-chairman - 1999-2000)  
Stakeholder Committee for the Center for the Systems Research Center  
(Chairman - 2000)  
Stakeholder Committee for the Internet Technology Innovation Center (Chairman  
- 2000)  
Stakeholder Committee for the Center for Human Computer Interaction (Member  
- 2000)  
XCaliber Selection Committee (member - 2000)  
Committee for the Dedication of the ACITC Building (2000)  
Virtual Corporation Board of Directors (1998-9)  
Alexandria Research Institute Working Group (1999)  
University Computer Policy Committee (1986)  
Search Committee: Vice President for Computing (1986)  
Long Range Planning Subcommittee (Chairman) (1986)  
Digital Switch Technical Evaluation Committee (1986-87)  
Single System Image Review Committee (1986)

University Committees (Iowa State University):

Academic Affairs Computer Advisory Committee  
Science and Humanities Computer Advisory Committee

Departmental Committees (Iowa State University):

Laboratory Committee (Chairman)  
Library Committee (Chairman)

## **CONSULTING EXPERIENCE**

Computer Sciences Corporation (Falls Church, Virginia)  
Hewlett-Packard Corporation (Fort Collins, Colorado)  
Naval Surface Weapons Center (Dahlgren, Virginia)  
Naval Surface Weapons Center (White Oak, Maryland)  
Xerox Corporation (Rochester, New York)  
Planning Research Corporation (McLean, Virginia)  
Goodman, West & Filetti (Glen Allen, Virginia)  
Klarquist-Sparkman, LLP (Portland, Oregon)  
Woods-Rogers, LLC (Roanoke, Virginia)