Ronald F. DeMara

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I. Technical Interests

Adaptive Computer Architectures, Evolvable Hardware, and Distributed Intelligent Systems

II. Education

• Doctor of Philosophy – Computer Engineering

University of Southern California – December, 1992
Dissertation: Parallelism, Design, and Performance of a
Marker-Propagation Reasoning Architecture

• Master of Science – Electrical Engineering

University of Maryland, College Park - May, 1989

Emphasis: Digital Computer Systems

• Bachelor of Science – Electrical Engineering with High Honors

Lehigh University – May, 1987

Minor: Science, Technology, and Society

III. Professional Experience

1993 – present: University of Central Florida – Orlando, Florida

Department of Electrical Engineering and Computer Science

- *Professor*: 2006 present
- Associate Professor: 1999 2005
- *− Assistant Professor*: 1993 *−* 1998
- Graduate Coordinator: December 2009 August 2012
- Program Coordinator, Computer Engineering Program: 1994 1995, 2011 present

Taught 13 courses, developed 6 new courses, and served as Program Coordinator. Principal Investigator (PI) or co-PI for research totaling \$5.4M awarded of which roughly 80% was from Federally-sponsored projects including the *National Science Foundation*, *NASA*, *U.S. Army / Navy / Air Force*, *Defense Modeling and Simulation Office*, *DARPA*, and *National Security Agency*. Directed 20 Masters students and 13 Ph.D. students whom have completed thesis or dissertation. Six of these graduates went on to full-time faculty positions in academic programs the university level.

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Performed program administration in Computer Engineering at the undergraduate and graduate levels, laboratory enhancement within the department and the college, and academic committee service at the department-level through the university-level. Conducted accreditation activities and strategic planning for the Computer Engineering program. Active in junior faculty mentoring and program development including chairing several faculty recruiting committees resulting in the hiring of ten tenure-track faculty and three lecturers. Service in professional societies through peer review of approximately 30 different technical journal and conference venues, member rank elevation committees, and as a faculty advisor to student groups.

Served as member of the University Graduate Council and the Faculty Senate. Served on Editorial Boards of three journals. Held officer positions in Southeast Section of American Society for Engineering Education. Hold a joint appointment in the Computer Science program for coursework and doctoral advising.

Received the Outstanding Engineering Educator Award (IEEE Southeastern US Region level and Florida Council level), Research Initiation Award (University-level), Distinguished Research Lecturer Award (College of Engineering), Advisor of the Year Award (College of Engineering), Excellence in Graduate Teaching Award (ECE Department), twice received the Researcher of the Year Award (ECE Department), and received the State of Florida University System's Teaching Initiative Award (State-level/University-level) three times.

2002: NASA Ames Research Laboratory – Mountain View, CA (UCF Sabbatical Year)

Visiting Research Scientist, Evolvable Hardware Program

Conducted research in Autonomous FPGA Repair techniques. Developed evolutionary computation approaches using Genetic Algorithms to regain lost functionality due to stuck-at-faults and other permanent failures in Xilinx SRAM FPGA platforms. Contributed to three conference papers on the topic, including technical approach, experimental system, and research results.

1989 – 1992: University of Southern California – Los Angeles, California

Research Assistant III, Department of Electrical Engineering-Systems

Conducted research in High Performance Computer Architectures for Knowledge Processing applications. Developed the SNAP-1 Multiprocessor, a 144-CPU DSP system for real-time speaker-independent continuous speech processing, including processor configuration, interconnection network, and performance monitoring strategy. Research in performance modeling and assessment of hybrid SIMD/MIMD architectures.

1986 – 1989: IBM Corporation – Manassas, Virginia

Associate Engineer, Federal and Complex Systems Division

Specification, design, and capacity analysis of telecommunication systems. Responsibilities included performance modeling using SIMSCRIPT/NETWORK-II.5, processor selection, connection topology, redundancy/availability analysis, and technical proposal development. Lead systems architect for flyby-wire Automated Inventory Management system. Site representative to IBM division-level steering committee on systems engineering workstation environments.

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IV. Teaching Activities

A. Courses Taught

Taught courses in lecture, recitation, and seminar-style formats at Undergraduate (EEL3xxx/4xxx) and Graduate (EEL5xxx/6xxx) levels with [class size] as listed:

- 1. EEL3801: Introduction to Computer Engineering with Laboratory [60]
 - C++, Assembly Language, Program Design
- 2. EEL4767: Computer System Design I with Laboratory [40]
 - Computer Organization, Microprocessor Systems
- 3. EEL4768: Computer System Design II with Laboratory [30]
 - Computer Architecture, Data Path Design
- 4. EEL4851: Engineering Data Structures with Laboratory [50]
 - Data Structures and Algorithms in C++ and now Java
- 5. EEL4882: Engineering Systems Software [30]
 - Operating Systems Concepts, Process Scheduling, Resource Management
 - offered in live-only and live-with-web-based formats
- 6. EEL4817: Machine Learning I [15]
 - Decision Trees, Evolvable Hardware, Neural Networks
 - Team taught with 3 faculty: taught module on Evolvable Hardware
- 7. EEL4818: Machine Learning II [10]
 - Honors course for undergraduates developing Machine Learning projects
 - Team taught with 3 faculty: supervised autonomous FPGA projects
- 8. EEL5708: High Performance Computer Architecture [40]
 - Pipelining/Branch Prediction, Superscalar Architecture, Cache Design
 - offered in live-only and live-with-remote-video plus web-based formats
- 9. EEL6707: Parallel Processing [20]
 - Distributed/Shared Memory, Interconnection Networks, Data Transformations
 - offered in live-only and live-with-remote-video plus web-based formats
- 10. EEL6763a: Current Topics Scalable Shared-Memory Architectures [20]
 - Data Consistency, Cache Coherence, Profiling and Metrics
 - offered in live-with-remote-video format
- 11. EEL6763b: Current Topics Clockless Processor Design [20]
 - Asynchronous ALU Design, Fine-grained and Coarse-grained Dataflow
- 12. EEL6763c: Current Topics Autonomously Reconfigurable and Evolvable Hardware [20]
 - FPGA-based Intrinsic/Extrinsic Evolution, Autonomous Regeneration
 - offered in live-with-remote-video plus web-based format
- 13. EEL6769: Parallel Knowledge Processing [15]
 - Marker-propagation Architectures, Classifier Systems, Genetic Algorithms

Revised material, supervised, and/or substitute-taught three additional courses:

- 14. EEL3342: Digital Logic Design with Laboratory [60]
 - Boolean Logic, Combinational and Sequential Circuits
- 15. EEL4781: Computer Networks [30]
 - Protocols, Routing Algorithms, OSI Model, Flow Control
- 16. EEL5762: Computer Systems Performance Analysis [20]
 - Stochastic Modeling, Discrete Event Simul., Appl. to Networks/ Multiprocessors

B. Curriculum Enhancement

- Course Development:
 - University Catalog additions: EEL4882, EEL5708, EEL5762, EEL6707, EEL6763, and EEL6769 as sole developer; EEL4817 and EEL4818 as co-developer.
 - -Curriculum development to support new Bachelors degree program in Information Technology
 - Innovations with Internet-based video streaming and adoption of online courseware
- Laboratory Development:
 - Obtained \$520,150 in laboratory infrastructure grants as PI or Co-PI. Resources include network servers, workstations, 8-way shared-memory multiprocessor, scopes, and analyzers
 - Founder and Director: Computer Architecture Lab
 - -Co-developed or renovated: Microprocessor Lab, Open Computing Lab, Intelligent Systems Lab, and VLSI Lab
 - Directed integration of National Instrument's Labview PC-based virtual instrumentation breadboard environment into 2 undergraduate laboratories: EEL3342 and EEL4767
 - Mentoring of student assistants for laboratory manual revision and web-based hosting
- Assessment and Accreditation:
 - Accreditation Coordinator for Accreditation Board for Engineering and Technology (ABET) for Computer Engineering program
 - Initiated the Southern Association of Colleges and Schools (SACS) Outcomes Assessment methods in UCF Computer Engineering program and maintained Evaluation Matrices
 - ABET lab coordinator and course custodian
- Co-PI of NSF Combined Research Curriculum Development (CRCD) grant:

Title: *Machine Learning Advances for Engineering Education*Amount: \$416,851 plus \$165,077 additional university match for a total of \$581,928 Duration: June 2002 – August 2007

- -Co-developed Machine Learning modules that have been taught them to 243 students in 8 undergraduate classes.
- -Modules motivate students to take senior-level course sequence entitled *Machine Learning I* and *II* that have been taught to 34 students.
- Project has produced approximately 20 undergraduate research projects, three Masters with thesis, 1 Ph.D., 14 conference papers (8 technically-oriented venues and 6 educationally-oriented venues), and 3 journal papers.

C. Ph.D. Students Completed

Completed 13 Ph.D. students as Dissertation Chair and Advisor:

- 1. R. Oreifej, A Sustainable Autonomic Architecture for Organically Reconfigurable Computing Systems, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2011.
 - Dr. Oreifej became a Senior Technical Staff at AMD Corporation.

2. R. Al-Haddad, An Adaptive Modular Redundancy Technique To Self-Regulate Availability, Area, And Energy Consumption In Mission-Critical Applications, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2011.

- Dr. Al-Haddad became a Senior Technical Staff at AMD Corporation.
- 3. J. C. Leon-Barth, *Phoneme-Based Video Indexing Using Phonetic Disparity Search*, Doctor of Philosophy, Computer Engineering, University of Central Florida, December, 2010.
 - Dr. Leon-Barth became a research scientist at L3 Communications.
- 4. K. Zhang, A Competitive Reconfiguration Approach to Autonomous Fault Handling Using Genetic Algorithms, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2008.
 - Dr. Zhang became a research scientist with Foxconn Electronics in Fort Lauderdale, FL.
- 5. C. A. Sharma, Sustainable Fault-Handling of Reconfigurable Logic using Throughput-Driven Assessment, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2008.
 - Dr. Sharma became a research support staff member in UCF Department of Physics.
- 6. H. Tan, A Multi-layer Field Programmable Gate Array Framework Supporting Autonomous Partial Runtime Reconfiguration, Doctor of Philosophy, Computer Engineering, University of Central Florida, December, 2007.
 - Dr. Tan became a research scientist at a FPGA startup company in Fort Lauderdale, FL.
- 7. H. A. Bahr, *Bandwidth Reduction Techniques for Embedded Simulation Using Concurrent Behavior Models*, Doctor of Philosophy, Computer Engineering, University of Central Florida, December, 2004.
 - Dr. Bahr became an Assistant Professor at Tarleton State University / TAMU Central Texas.
- 8. J. J. Vargas, *Data Transmission Scheduling for Distributed Simulation Using Packet Alloying*, Doctor of Philosophy, Computer Engineering, University of Central Florida, December, 2004.
 - Dr. Vargas is a tenured faculty member at the University of Costa Rica.
- 9. A. J. Rocke, *Mitigation of Network Tampering Through Dynamic Dispatch of Mobile Agents*, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2004.
 - Dr. Rocke formed and operated his own network consulting company.
- 10. S. C. Smith, *Gate and Throughput Optimization of NULL Convention Digital Circuits*, Doctor of Philosophy, Computer Engineering, University of Central Florida, May, 2001.
 - Dr. Smith is currently an Associate Professor at the University of Arkansas.
- 11. Y. Tseng, *High Performance Termination Detection Techniques Supporting Multithreaded Execution*, Doctor of Philosophy, Computer Engineering, University of Central Florida, December, 2000.
 - Dr. Tseng is currently an Associate Professor at North Carolina A&T State University.
- 12. Y. Ma, Localized Adaptive Networks for Hybrid Symbolic and Subsymbolic Processing, Doctor of Philosophy, Computer Engineering, University of Central Florida, August, 2000.

- Dr. Ma formed and operated his own computing consulting company.
- 13. B. S. Motlagh, A Concurrent-Read Exclusive-Write Architecture for Scalable Shared-Memory Multiprocessing, Doctor of Philosophy, Computer Engineering, University of Central Florida, May, 1997.

– Dr. Motlagh is currently Associate Professor at Daytona State College.

D. M.S. Thesis Students Completed

Completed 20 M.S. students as Thesis Chair and Advisor:

- 1. M. Parris, Optimizing Dynamic Logic Realizations For Partial Reconfiguration Of Field Programmable Gate Arrays, Master of Science, Computer Engineering, University of Central Florida, May, 2009.
 - Graduate is currently employed by NASA Kennedy Space Center.
- 2. R. Dookhoo, *Automated Construction and Testing of Dialog Scripts*, Master of Science, Computer Science, University of Central Florida, December, 2008.
 - Graduate is pursuing employment in industry at a software consulting company.
- 3. G. Wang, *Mobile Agent File Integrity Analyzer*, Master of Science, Computer Engineering, University of Central Florida, May, 2001.
 - Graduate operates his own software consulting company.
- 4. D. Lin, *Identification of Similar, Conflicting, and Redundant Entries in Distributed Databases*, Master of Science, Computer Engineering, University of Central Florida, May, 2001.
 - Graduate hired by technology start-up company in San Jose, California.
- 5. L. Wang, Automated Generation of XML Schemas using a Transportation Interchange Language, Master of Science, Computer Engineering, University of Central Florida, May, 2001.
 - Graduate hired by Oracle Corporation in Orlando, Florida.
- 6. B. Kapoor, Remote Misuse Detection Using Mobile Agents and Relational Database Query Techniques, Master of Science, Computer Engineering, University of Central Florida, May, 2000.
 - Graduate hired by Motorola Corporation in Minneapolis, Minnesota.
- 7. Y. Zhu, Decentralized Control Schemes for Coordinating Distributed Processing Activities of Mobile Software Agents, Master of Science, Computer Engineering, University of Central Florida, May, 2000.
 - Graduate hired by technology start-up company in Santa Clara, California.
- 8. J. Lu, *Time-Type Mobile Agent Protocols for Distributed Detection of Network Intrusions*, Master of Science, Computer Engineering, University of Central Florida, May, 2000.
 - Graduate hired by TCI Corporation in Danbury, Connecticut.

9. J. C. Leon-Barth, Forced-Miss Data Referencing Methods for Benchmarking Multiprocessor Memory Hierarchies, Master of Science, Computer Engineering, University of Central Florida, August, 1998.

- Graduate hired by IBM Corporation in Atlanta, Georgia.
- 10. D. Hammer, *High Performance Multiprocessing with Read-time Resolution Data Coherent Strategies*, Master of Science, Computer Engineering, University of Central Florida, August, 1996.
 - Graduate hired by embedded microprocessor applications firm in Buffalo, New York.
- 11. P. J. Wilder, *N-ary Cube Interconnection using Multiport Memories*, Master of Science, Computer Engineering, University of Central Florida, May, 1996.
 - Graduate hired as Assistant Professor of Engineering Technology at Univ. of Southern Mississippi in Gautier, Mississippi. Now ECE chair at Indiana Institute of Technology.
- 12. B. Rosada, *Concurrent Read Replicated Multiprocessor Systems*, Master of Science, Computer Engineering, University of Central Florida, December, 1995.
 - Graduate hired as lecturer in Dominican Academy in Brookyln, New York.
- 13. H. Zhu, Rate-Adaptive Source Quench Schemes in Congestion Avoidance Techniques Performance Bound and Simulation Evaluation, Master of Science, Computer Engineering, University of Central Florida, December, 1995.
 - Graduate hired by technology start-up company in San Jose, California.
- 14. S. Sripathi, *High Performance Classifier Systems on SIMD Architectures*, Master of Science, Computer Engineering, University of Central Florida, December, 1995.
 - Graduate hired by Siemens Corporation in St. Paul, Minnesota.
- 15. K. Drake, *Time and Space Efficient Multiprocessor Synchronization and Quiescence Detection*, Master of Science, Computer Engineering, University of Central Florida, May, 1995.
 - Graduate employed at Lockheed Martin Information Systems in Orlando, Florida.
- 16. S. E. Crawford, *Cache Coherence Strategies for Multiported Shared-Memory Architectures*, Master of Science, Computer Engineering, University of Central Florida, December, 1994.
 - Graduate hired by General Motors in Detroit, Michigan.
- 17. H. A. Bahr, Distribution-Adaptive Priority Queue Scheduling Algorithms for Discrete Event Simulation, Master of Science, Computer Engineering, University of Central Florida, December, 1994.
 - Graduate was employed at STRICOM in Orlando, Florida.
- 18. R. A. Cagle, *Content Addressable Memory with Built-in Marker-Passing Functions*, Master of Science, Computer Engineering, University of Central Florida, May, 1994.
 - Graduate hired by network technology firm in Dallas, Texas.
- 19. R. N. Mercer, *Incremental Boolean Logic Techniques for Nanometer-Scale Computing Devices*, Master of Science, Computer Engineering, University of Central Florida, May, 1994.
 - Graduate hired by Oracle Corporation in Orlando, Florida.

20. N. Shah, *Rate-Adaptive Source Quench Congestion Avoidance Technique for TCP and UDP Protocols*, Master of Science, Computer Engineering, University of Central Florida, May, 1994.

- Graduate hired by AT&T in Boston, Massachusetts.

E. Honors Thesis Students Completed

Completed two undergraduate Honors Thesis students who have pursued graduate degrees:

- 1. C. K. Milliord, *Voting Schemes to Enhance the Performance of Evolutionary Repair in Reconfigurable Logic Devices*, Honors Thesis, Bachelor of Science, Computer Engineering, University of Central Florida, May, 2005.
 - Student entered graduate program at Columbia University.
- 2. K. Carter, *An AI Performance Benchmark for the n-Cube-2*, Honors Thesis, Bachelor of Science, Computer Engineering, University of Central Florida, Fall, 1993.
 - Student entered graduate program at Georgia Institute of Technology.

F. Undergraduate Research Exchange Students

- 1. N. Oreifej, *FPGA Fault Recovery Simulation Environment*, Undergraduate Exchange Research Project, Training completed September, 2005.
 - Graduate employed by Oracle Corporation.

G. Funded Graduate Project Supervision

- 1. G. R. Harris, M.S. Thesis student, Topic: *Self-timed Architecture for Masked Successive Approximation Analog-to-Digital Conversion*. Graduated May, 2006. Funded 20 hours per week Research Assistantship.
- 2. M. Haendel, M.S. Thesis student, Topic: *Dynamic Reconfiguration of Field Programmable Gate Arrays under JTAG Control*. Graduated in December, 2005. Funded 10 hours per week Research Assistantship.
- 3. A. Thakkar, Graduate Research Project: *Dynamic Partial Reconfiguration of FPGAs using JTAG APIs*. Graduated in September, 2005. Funded 10 hours per week Research Assistantship.

H. Students Under Advisement

Currently advising 4 students as Dissertation chair:

- 1. N. Imran, Ph.D. student, Topic: Autonomous Recovery of Reconfigurable Logic Devices using Priority Escalation of Slack, passed Ph.D. Proposal Exam in Spring, 2012. Graduation anticipated in Fall, 2013.
- 2. R. Ashraf, Ph.D. student, Topic: Scalable FPGA Refurbishment using Netlist-driven Evolutionary Algorithms, passed Ph.D. Candidacy in Fall, 2011. Graduation anticipated in Spring, 2014.

3. A. Al-Zahrani, Ph.D. student, Topic: Self-regulating Resilience Hierarchy with Fortified Pipelines and Logic Diversity, passed Ph.D. Qualifying Review in Fall, 2010. Graduation anticipated in Fall, 2014.

4. R. Khraisha, Ph.D. student, Topic: Scalable Video Coding Architectures using Dynamic Partial Reconfiguration, passed Ph.D. Qualifying Review in Fall, 2010. Graduation anticipated in Fall, 2014.

V. Research Activities

A. Funded Projects

Funding, match, and cost share as PI or co-PI: \$5,638,740

- Federally-Sponsored Projects: \$4,637,763 (82%)
- R. F. DeMara's credit share: \$3,133,032
- 1. M. Lin, K. O. Stanley, L. Wei, R. F. DeMara, M. Georgiopoulos, P. F. Wahid, *Hardware-Assisted Large-Scale Neuroevolution for Multiagent Learning*, U.S. Army Research Office (ARO) Defense University Research Instrumentation Program (DURIP), June 2012 May 2013, \$201,500. DeMara share: \$14,105.
- 2. A. J. Gonzalez and R. F. DeMara, *CRPA: Communicating Avatars: Artificial Intelligence* + *Computer Graphics* = *Innovative Science*, National Science Foundation (NSF), Oct 2011 September 2013, \$150,000. DeMara share: \$75,000.
- 3. A. J. Gonzalez and R. F. DeMara, *IRES: U.S.-France Research and Education on Contextual Reasoning and its Application to Conversational Agents*, National Science Foundation (NSF), April 2010 March 2013, \$141,129. DeMara share: \$70,565.
- 4. A. J. Gonzalez and R. F. DeMara, *Collaborative Research: Towards Lifelike Computer Interfaces that Learn*, National Science Foundation (NSF), February 2007 January 2013, \$682,843 (includes an NSF Supplement of \$44,500 and REU supplements totaling \$63,600) plus \$43,208 university match for a total of \$735,651. DeMara share: \$367,825.
- 5. R. F. DeMara, Soar-Longevity: A Sustainable Autonomic Architecture for Organically Reconfigurable Computing Systems, Defense Advanced Research Projects Agency (DARPA) SBIR Phase I subcontract, January 2008 August 2008, \$32,851. DeMara share: \$32,851.
- 6. R. F. DeMara, *FPGA Dynamic Reconfiguration Resource Management*, U. S. Air Force SBIR Phase II subcontract, August 2006 July 2008, \$198,903 awarded but redirected.
- 7. R. F. DeMara, *Adaptive Device Fault Occlusion through Competitive Runtime Reconfiguration*, National Aeronautics and Space Administration (NASA), October 2004 September 2007, \$356,000 awarded (modified to \$300,000) plus \$84,337 university match and \$58,532 cost share for a total of \$525,538 (modified to \$469,538). DeMara share: \$469,538.
- 8. M. Georgiopoulos, R. F. DeMara, A. J. Gonzalez, M. Kysilka, M. Mollaghasemi, E. Gelenbe, and A. Wu, *Machine Learning Advances for Engineering Education*, National Science Foundation (NSF), June 2002 August 2007, \$428,851 plus \$165,077 university match for a total of \$593,928. DeMara share: \$83,149.
- 9. R. F. DeMara, *Distributed Simulation Fidelity Optimization in the Presence of Communication Latency*, U.S. Army Research, Development, and Engineering Command (RDECOM), January 2005 February 2006, \$100,000 plus \$5,000 university match and \$3,600 cost share for a total of \$108,600. DeMara share: \$108,600.
- 10. R. F. DeMara, *Multi-layer Runtime Reconfiguration Architecture supporting FPGA Defragmentation*, U. S. Air Force SBIR Phase I subcontract, September 2005 December 2005, \$16,178. DeMara share: \$16,178.
- 11. R. F. DeMara, A. J. Gonzalez, and M. Georgiopoulos, *Bandwidth and Latency Implications of Integrated Training and Tactical Communication Networks*, U.S. Army Research,

- Development, and Engineering Command (RDECOM), May 2002 September 2004, \$268,491 plus \$28,700 university match and \$21,600 cost share for a total of \$318,591. DeMara share: \$254,873.
- 12. A. J. Gonzalez, M. Georgiopoulos, and R. F. DeMara, *Learning Robotic Behaviors from Observation of Human Performance*, U.S. Army Simulation Training and Instrumentation Command (STRICOM), May 2002 April 2003, \$110,000. DeMara share: \$27,500.
- 13. J. S. Yuan and R. F. DeMara, *Application-Specific IC Design Using Asynchronous Methodologies*, Theseus Logic, Inc., September 1999 December 2002, \$270,000 plus \$240,000 state match and \$72,000 cost share for a total of \$582,000. DeMara share: \$291,000.
- 14. R. F. DeMara, *Active Computer Defense using Autonomous Agents*, National Security Agency (NSA) subcontract, August 1999 December 2002, \$147,382 plus \$6,500 department match for a total of \$153,882. DeMara share: \$153,882.
- 15. A. J. Gonzalez, R. F. DeMara, and M. Georgiopoulos, *Automated Model Development Techniques for Human Behavior Models*, Defense Modeling and Simulation Office (DMSO), May 2001 August 2002, \$98,510 plus \$9,834 university match for a total of \$108,344. DeMara share: \$27,086.
- 16. A. J. Gonzalez, M. Georgiopoulos, and R. F. DeMara, *An Advanced Representational Paradigm for Human Behavior Modeling in Computer Generated Forces*, U.S. Army STRICOM and Defense Modeling and Simulation Office (DMSO), March 2001 August 2002, \$198,889 plus \$15,323 university match for a total of \$214,212. DeMara share: \$53,553.
- 17. K. Reynolds, M. Georgiopoulos, R. F. DeMara, R. Eaglin, A. J. Gonzalez, and C. Watkins, *Florida Department of Law Enforcement Drug Enforcement Distributed Database System*, State of Florida, April 2000 April 2001, \$250,000 plus \$55,400 university cost share for a total of \$305,400. DeMara share: \$62,500.
- A. J. Gonzalez, M. Georgiopoulos, and R. F. DeMara, Context-Based Representation of Intelligent Behavior in Degraded Systems Simulation, Naval Air Warfare Center Training Systems Division (NAWCTSD), March 2000 – September 2000, \$49,960. DeMara share: \$7,494.
- 19. A. J. Gonzalez, R. F. DeMara, and M. Georgiopoulos, *Research Collaboration on Human Behavioral Modeling Techniques for Computer Generated Simulation Entities*, Mitsubishi Research Institute, August 1999 August 2000, \$29,269. DeMara share: \$7,317.
- 20. R. F. DeMara, M. Georgiopoulos, and A. J. Gonzalez, *Intelligent Data-Mining of Advanced Training Management and Support Systems*, Lockheed Martin Information Systems, August 1999 May 2000, \$38,000 in cost share. DeMara share: \$34,200.
- 21. J. S. Yuan, R. F. DeMara, and Z. Qu, *Interdisciplinary Research in Computer Architecture, ASIC, and Microelectronics Testing and Characterization*, Theseus Logic and UCF Presidential Research Infrastructure Initiative, January, 2000, \$116,000. DeMara share: \$38,667.
- 22. R. F. DeMara and P. McCauley-Bell, *Tethered Agent System for Distributed Intrusion Detection*, Lockheed Martin Information Systems, January 1999 December 1999, \$35,000 plus \$35,000 state match for a total of \$70,000. DeMara share: \$70,000.
- 23. R. F. DeMara, *Software Mechanism for Efficient Barrier Synchronization*, UCF Office of Research, July 1998 June 1999, \$7,485. DeMara share: \$7,485.

24. R. F. DeMara, R. Eaglin, and M. Y. Wu, *Media Hawk Processor System*, New Equipment Grant, Concurrent Computer Corporation, Inc., August, 1998, \$110,000. DeMara share: \$110,000.

- 25. A. J. Gonzalez, R. F. DeMara, and M. Georgiopoulos, *Vehicle Model Generation and Optimization for Embedded Simulation*, Naval Air Warfare Center Training Systems Division (NAWCTSD), January 1998 December 2001, \$402,496. DeMara share: \$132,823.
- 26. R. F. DeMara and B. Petrasko, *Concurrency Strategies for High-Level Simulation Architecture*, Lockheed Martin Information Systems, January 1996 April 1996, \$10,000. DeMara share: \$5,000.
- 27. R. F. DeMara, *Nighthawk Multiprocessor System*, New Equipment Grant, Harris Computer Systems / Concurrent Computer Systems Corporation, Inc., January, 1996, \$275,000. DeMara share: \$275,000.
- 28. R. F. DeMara, *Interprocessor Bandwidth Capacities of Hierarchical Multiprocessor Memory Systems*, Harris Computer Systems / Concurrent Computer Systems Corporation, Inc., June 1995 December 1996, \$46,473. DeMara share: \$46,473.
- 29. R. F. DeMara and B. Petrasko, *X-terminal Workstations*, New Equipment Grant, NCR Corporation, September, 1994, \$6,000. DeMara share: \$3,000.
- 30. R. F. DeMara, *Distributed Interactive Simulation of Computer Generated Forces*, Institute for Simulation and Training, May 1993 December 1993, \$18,700. DeMara share: \$18,700.
- 31. R. F. DeMara, *Engineering Infrastructure-Engineering Station Development*, State of Florida, September, 1994, January, 1993, \$13,150 including \$5,000 department match. DeMara share: \$13,150.

B. Edited Proceedings

- 1. T. Plaks (Ed.), and R. DeMara, M. Gokhale, S. Guccione, C. Patterson, M. Platzner, G. Smit, and M. Wirthlin, (Assoc. Eds.), *Proceedings of the Seventh International Conference on Engineering of Reconfigurable Systems and Algorithms*, Las Vegas, Nevada, U.S.A., June 25 28, 2007, CSREA Press, 321 pages, ISBN 1–60132–026–4, 2007.
- 2. T. Plaks (Ed.), and R. DeMara, M. Gokhale, S. Guccione, C. Patterson, M. Platzner, G. Smit, and M. Wirthlin, (Assoc. Eds.), *Proceedings of the Sixth International Conference on Engineering of Reconfigurable Systems and Algorithms*, Las Vegas, Nevada, U.S.A., June 26 29, 2006, CSREA Press, 272 pages, ISBN 1–60132–011–6, 2006.
- **3.** T. Plaks (Ed.), and R. DeMara, M. Gokhale, S. Guccione, M. Platzner, G. Smit, and M. Wirthlin, (Assoc. Eds.), *Proceedings of the Fifth International Conference on Engineering of Reconfigurable Systems and Algorithms*, Las Vegas, Nevada, U.S.A., June 27 30, 2005, CSREA Press, 264 pages, ISBN 1–932415–74–2, 2005.

C. Book Chapters

1. J. Castro, J. Secretan, M. Georgiopoulos, R. F. DeMara, G. Anagnostopoulos, and A. Gonzalez, "Pipelining Fuzzy ARTMAP without Match-Tracking," in *Intelligent Engineering Systems through Artificial Neural Networks*, Vol. 14, ASME Press, 2004, ISBN: 0–791–80228–0, pp. 100 – 106.

2. R. F. DeMara, Contributor, *Comprehensive Dictionary of Electrical Engineering*, P. A. Laplante, Editor-in-chief, IEEE Press, 1999, ISBN: 0–8493–3128–5.

3. S. H. Chung, D. I. Moldovan, and R. F. DeMara, "Massively Parallel Speech Understanding," in *Massively Parallel Artificial Intelligence*, MIT Press, 1993, J. A. Hendler and H. Kitano, Ed., ISBN: 0–262–61102–3, pp. 138 – 170.

D. Journal Articles

- 1. N. Imran and R. F. DeMara, "Distance-Ranked Fault Identification of Reconfigurable Hardware Bitstreams via Functional Input," accepted to *International Journal of Reconfigurable Computing* on January 8, 2014.
- 2. N. Imran, R. F. DeMara, J. Lee, and J. Huang, "Self-Adapting Resource Escalation for Resilient Signal Processing Architectures," *Journal Signal Processing Systems*, pp. 1-24, July, 2013 doi: 10.1007/s11265-013-0811-x
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- 52. J. D. Lohn, G. Larchev, and R. F. DeMara, "Evolutionary Fault Recovery in a Virtex FPGA Using a Representation that Incorporates Routing," in *Proceedings of the Seventieth International Parallel and Distributed Processing Symposium (IPDPS-2003) Reconfigurable Architectures Workshop*, pp. 172, Nice, France, April 22 26, 2003.
- 53. J. D. Lohn, G. Larchev, and R. F. DeMara, "A Genetic Representation for Evolutionary Fault Recovery in Virtex FPGAs," in *Proceedings of the Fifth International Conference on Evolvable Systems (ICES'03)*, pp. 47 56, Trondheim, Norway, March 17 20, 2003.
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- Association for Engineering Education Southeastern (ASEE-SE'99) Conference, Clemson, North Carolina, U.S.A., April 11 13, 1999.
- 69. A. E. Henninger, W. Gerber, R. F. DeMara, M. Georgiopoulos, and A. J. Gonzalez, "Behavior Modeling Framework for Embedded Simulation," in *Proceedings of the 1998 Interservice/Industry Training, Simulation and Education Conference (I/ITSEC'98)*, pp. 655 662, Orlando, Florida, U.S.A., November 30 December 3, 1998.
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- 71. R. F. DeMara, H. Zhu, and M. Poston, "Design and Analysis of Rate-Adaptive Source Quench Congestion Avoidance Techniques," in *Proceedings of the 1998 International Symposium on Information Theory and Applications (ISITA'98)*, pp. 572 575, Mexico City, Mexico, October 14 16, 1998.
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- 76. H. Bahr, R. F. DeMara, and M. Georgiopoulos, "Integer-Encoded Massively Parallel Processing of Fast-Learning ARTMAP Networks," in *Proceedings of the 1997 SPIE AeroSense Symposium (AeroSense'97)*, pp. 678 689, Orlando, Florida, U.S.A., April 21 24, 1997.
- 77. H. Bahr and R. F. DeMara, "A Concurrent Model Approach to Scaleable Distributed Interactive Simulation," in *Proceedings of the Fifteenth Workshop on the Interoperability of Distributed Interactive Simulation*, pp. 215 222, Orlando, Florida, U.S.A., September 16 20, 1996.
- 78. S. E. Crawford and R. F. DeMara, "Cache Coherence in Multiport Memory Architecture," in *Proceedings of the Second International Conference on Massively Parallel Computing Systems (MPCS'95)*, pp. 632 642, Ischia, Italy, May 2 6, 1995.
- 79. R. F. DeMara, B. S. Motlagh, E. Lin, and S. Kuo, "Barrier Synchronization Techniques for Distributed Process Creation," in *Proceedings of the Eighth International Symposium on Parallel Processing (IPPS'94)*, pp. 597 603, Cancun, Mexico, April 26 29, 1994.

80. R. N. Mercer, M. Ebel, and R. F. DeMara, "Pipelined Architecture for Computational Nanotechnology," in *Proceedings of the 1994 IEEE Southcon Conference (Southcon'94)*, pp. 314 – 319, Orlando, Florida, U.S.A., March 29 – 31, 1994.

- 81. R. A. Cagle, R. B. Holl, and R. F. DeMara, "Multifunction Content Addressable Memory for Parallel Speech Understanding," in *Proceedings of the 1994 IEEE Southcon Conference* (Southcon'94), pp. 320 325, Orlando, Florida, U.S.A., March 29 31, 1994.
- 82. R. Mercer, M. Ebel, and R. F. DeMara, "Helical Boolean Logic Elements," in *Proceedings of the Third Foresight Conference on Molecular Nanotechnology*, Palo Alto, California, U.S.A., October 14 16, 1993.
- 83. J. D. Roberts, R. F. DeMara, G. Ellis, R. Hughey, R. Levinson, and C. Noshpitz, "AHP: Advanced Hardware for PEIRCE," in *Proceedings of the Second International Workshop on PEIRCE*, pp. 26 29, Quebec, Canada, August 7, 1993.
- 84. S. H. Chung, R. F. DeMara, and D. I. Moldovan, "PASS: A Parallel Speech Understanding System," in *Proceedings of the Ninth IEEE Conference on AI for Applications (CAIA-93)*, pp. 136 142, Orlando, Florida, U.S.A., March 1 5, 1993.
- 85. R. F. DeMara and H. Kitano, "Benchmarking Performance of Massively Parallel AI Architectures," in *Proceedings of the Fourth Symposium on the Frontiers of Massively Parallel Computation*, pp. 517 520, McLean, Virginia, U.S.A., October 19 21, 1992.
- 86. R. F. DeMara and D. I. Moldovan, "Marker-Passing on a Parallel Knowledge Processing Testbed," in *Proceedings of the First International Conference on Parallel and Distributed Information Systems (PDIS'91)*, pp. 180, Miami Beach, Florida, U.S.A., December 4 6, 1991.
- 87. R. F. DeMara and H. Kitano, "PACE Benchmark Set," in *Proceedings of the 1991 International Joint Conference on Artificial Intelligence (IJCAI'91) Workshop on Parallel Processing for AI*, pp. 517 520, Sydney, Australia, August 24 25, 1991.
- 88. R. F. DeMara and D. I. Moldovan, "Performance Indices for Parallel Marker-Propagation," in *Proceedings of the 1991 International Conference on Parallel Processing (ICPP-91)*, pp. 658 659, St. Charles, Illinois, U.S.A., August 12 16, 1991.
- 89. R. F. DeMara and D. I. Moldovan, "A DSP Architecture for Parallel AI Processing," in *Proceedings of the 1991 TMS320 Educators Conference*, Houston, Texas, U.S.A., July 31 August 2, 1991.
- 90. R. F. DeMara and D. I. Moldovan, "The SNAP-1 Parallel AI Prototype," in *Proceedings of the Eighteenth Annual International Symposium on Computer Architecture (ISCA'91)*, pp. 2 11, Toronto, Ontario, Canada, May 27 30, 1991. Also appears in *Computer Architecture News*, Vol. 19, No. 3, pp. 2 11, May, 1991.
- 91. R. F. DeMara and D. I. Moldovan, "Design of a Clustered Multiprocessor for Real-time Natural Language Understanding," in *Proceedings of the Fifth International Parallel Processing Symposium (IPPS'91)*, pp. 270 277, Anaheim, California, U.S.A., April 30 May 2, 1991.
- 92. R. F. DeMara, "Performance Evaluation of Marker-Propagation Parallel Processing Systems," in *Proceedings of the First Workshop on Abstract Machine Models for Highly Parallel Computers*, pp. 77 82, Leeds, United Kingdom, March 25 27, 1991.

F. Articles Undergoing Review

1. N. Imran and R. F. DeMara, "Distance-Ranked Fault Identification of Reconfigurable Hardware's Bitstreams via Functional Input", submitted to *Microprocessors and Microsystems*.

G. Patents, Invention Disclosures, and Licenses

- 1. United States Patent #7,389,460, *Runtime-Competitive Fault Handling for Reconfigurable Logic Devices*, Inventor: R. F. DeMara (Orlando, FL, US), Assignee: University of Central Florida Research Foundation, Inc. (Orlando, FL, US), June 17, 2008.
- 2. R. F. DeMara and H. Tan, "Multi-layer Runtime Reconfiguration Architecture for FPGA Resource Management," FPGA circuit environment licensed by University of Central Florida Research Foundation to Space Photonics, Inc., Fayetteville, Arkansas, U.S.A, on September 2, 2005.
- 3. R. F. DeMara, "Discrepancy Mirror for Self-Checking Fault Detection," Invention Disclosure, University of Central Florida, February 9, 2005. Merged with invention disclosure leading to United States Patent #7,389,460.
- 4. R. F. DeMara and H. Tan, "Multi-layer Runtime Reconfiguration Architecture," U.S. Federal Software Copyright registered by University of Central Florida on August 30, 2005.
- 5. R. F. DeMara, "Replicated Global Image Memory System," Invention Disclosure, approved for Patent Application by University of Central Florida Patent Review Committee, 1999.

H. Research Laboratory Leadership

- Founder and Director:
 - Computer Architecture Laboratory University of Central Florida Involves 2 faculty and 8 graduate students, http://cal.ucf.edu
- Co-Founder and Co-Director:
 - Intelligent Systems Laboratory University of Central Florida
 Involves 4 faculty and 14 graduate/honors students, http://isl.ucf.edu

I. Post-Doctoral Supervision

- Dr. Jafaar Alghazo, Post-Doctoral Researcher from Southern Illinois University, Carbondale, Illinois, U.S.A., at UCF Campus during 2007 2008 academic year.
- Dr. Ayman Alnsour, Post-Doctoral Researcher from Al-Isra University, Amman, Jordan, at UCF Campus during 2007 – 2008 academic year.

VI. Professional Service

A. International

- Associate Editor *IEEE Transactions on Computers*: 2013 present
- Panel Organizer, Panel Chair, and Panelist: "Signal-Image Processing and Dynamic Partial Reconfiguration," *International Conf. on Engineering of Reconfigurable Systems and Algorithms*, 2010.
- Associate Guest Editor *ACM Transactions on Embedded Computing Systems*, special issue on "Configuring Algorithms, Processes and Architectures," 2009
- Associate Editor *IEEE Transactions on VLSI Systems:* 2004 2007
- Editorial Board *Microprocessors and Microsystems*: 2006 2008
- Associate Editor Journal of Circuits, Systems, and Computers: 2004 2006
- Conference Keynote Speaker at the *IEEE International Conference on Reconfigurable Computing and FPGAs*, San Luis Potosi, Mexico, September 20 22, 2006.
- Executive Committee *International Conference on Engr. of Reconfigurable Systems and Algorithms:* 2008
- Steering Committee *International Conference on Engr. of Reconfigurable Systems and Algorithms:* 2005, 2006, 2007
- Program Committees:
 - IEEE Conference on High Performance Compilation, Computing and Communication (HP3C-2014) - Track 9: High-performance Self-adaptive and Resource-aware Programming: 2014
 - IEEE Congress on Evolutionary Computation: 2010
 - International Conference on Field Programmable Logic and Applications: 2008
 - Genetic and Evolutionary Computation Conference: 2008, 2009
 - NASA/DoD Conference on Evolvable Hardware: 2005, 2006, 2007, 2008
 - International Conference on Evolvable Systems: 2008
 - International Conf. on Parallel and Distributed Proc. Techniques and Appl. 2004, 2005
 - IEEE World Congress on Computational Intelligence
- Discussion Panelist *IEEE Conference on AI for Applications*, 1993
- Technical Paper Reviewer/Referee for the following Journals:

(multiple years of service: 1990 – present)

- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on VLSI Systems
- IEEE Transactions on Evolutionary Computation
- IEEE Transactions on Circuits and Systems
- IEEE Transactions on Neural Networks
- IEEE Transactions on Computers
- Journal of Parallel and Distributed Computing
- Journal of Autonomous and Multi-Agent Systems
- Journal of Simulation Modeling Practice and Theory

- Journal of Defense Modeling and Simulation
- Journal of Supercomputing
- Microprocessors and Microsystems
- Integration, The VLSI Journal
- -ACM Transactions on Design Automation of Electronic Systems
- Operating Systems Review
- Journal of Supercomputing
- IET Circuits, Devices & Systems
- IEEE IT Professional magazine
- International Journal of Network Management
- Technical Paper Reviewer/Referee for the following Conferences, Workshops, and Symposia: (multiple years of service: 1990 present)
 - International Symposium on High Performance Computer Architecture (ISHPCA)
 - International Conference on Parallel Processing (ICPP)
 - International Conference on Parallel and Distributed Computer Systems (ICPDS)
 - International Parallel (and Distributed) Processing Symposium (IPDPS)
 - International Joint Conference on Artificial Intelligence (IJCAI)
 - International Symposium on Computer and Information Sciences (ISCIS)
 - International Symposium on Circuits and Systems (ISCS)
 - International Symposium on Low Power Electronics and Design (ISPLED)
 - International Conference on Engr. of Reconfigurable Systems and Alg. (ERSA)
 - NASA/DoD Conference on Evolvable Hardware (EH)
 - European Design and Test Conference (EDTC)
 - SPIE Aerosense Symposium (Aerosense)
 - Hawaii International Conference on Systems Sciences (HICSS)
 - International Conference on Field Programmable Logic and Applications (FPL)
 - Genetic and Evolutionary Computation Conference (GECCO)
 - International Conference on Evolvable Systems (ICES)
- Conference Technical Session Chair and/or Organizer:
 - "Runtime Resource Management of Reconfigurable Hardware" International Conf. on Engineering of Reconfigurable Systems and Algorithms, 2007
 - "Runtime Reconfiguration Resource Management" International Conf. on Engineering of Reconfigurable Systems and Algorithms, 2006
 - "Distributed and Heterogeneous Reconfigurable Systems" International Conference on Advances in Computer Science and Technology, 2006
 - "Computer Architecture" International Conference on Advances in Computer Science and Technology, 2006
 - "Adaptive Self-Repair of Reconfigurable Devices" NASA/DoD Conference on Evolvable Hardware, 2005
 - "Device & Circuit Design" International Conference on VLSI, 2004
 - "System/Network-on-a-Chip" International Conference on VLSI, 2004

- "Logic Design" (with H. Michel) International Conference on VLSI, 2004
- Panelist: IEEE Member Rank Elevation Panel consisting of IEEE Senior Members and Fellows whom determine increases to Senior Member rank among IEEE applicants, 2005

B. National and Regional

- Proposal/Award Reviewer:
 - National Science Foundation
 - Computer and Information Science and Engineering (CISE) Division
 - U.S.-Argentina Collaborative Research
 - American Society for Engineering Education, Southeast Section
 - Referee for Outstanding Researcher Award
- President: Computer and Technology Division ASEE Southeast Section: 1999 2000
- Vice President: Computer and Technology Division ASEE Southeast Section: 1998 1999
- Technical Program Committee:
 - IEEE Southcon / Southeastcon Conference: 1994, 1998
 - ASEE Southeastern Conference: 1998, 1999
- Conference Technical Session Chair/Organizer:
 - "Parallel Processing Architectures" IEEE Southcon Conference: 1994, 1998
 - "Computing in Education" IEEE Southcon / Southeastcon Conference: 1998, 1994
- Technical Paper Reviewer/Referee for Conferences:
 - IEEE Southcon / Southeastcon
 - -ASEE Southeastern Conference
- External Promotion and Tenure Evaluator:
 - Multiple universities
- Textbook Reviewer:
 - McGraw-Hill Publishers: Higher Education Division
 - CRC Press
 - -Wiley & Sons (invited for 2 different texts)

C. University-Level

- University Promotion and Tenure Committee: 2007 2008
- University SOTL Award Selection Committee: 2011 2012
- Graduate Research Forum: 2010 2011, 2009 2010
- Graduate Council: 2004 2005
- Faculty Senate: 2005 2006, 2004 2005
- Commencement Marshall: 2003, 1997, 1994
- Faculty Advisor to IEEE Student Organization: 1995 1996, 1994 1995, 1993 1994

D. College-Level

• Graduate Program College Council: Dec 2009 - present

- Teaching Award Criteria Committee: 2007 2008, 2003 2004, 1999 2000
- Accreditation Committee: 2006 2007, 2007 2008, 2008 2009, 2009 2010
- Engineering Graduate Council: 2004 2005
- In-House Grant Selection Committee: 2004 2005, 2003 2004
- Research Council: 2003 2004
- Teaching Award Selection Committee: 2000 2001, 1997 1998
- Research Award Selection Committee: 2004 2005, 2009 2010
- Computing Resources Committee: 2000 2001, 1999 2000, 1997 1998, 1995 1996, 1994 1995
- Dean's Advisory Board: 1994 1995

E. Department-Level

- Academic Issues:
 - State Program Review Committee: 2010 2011
 - Computer Systems Committee: 2010 2011, 2009 2010, 2008 2009, 2007 2008, 2006 2007, 2005 2006, 2004 2005, 2003 2004, 2000 2001, 1999 2000, 1998 1999, 1997 1998, 1996 1997, 1995 1996, 1994 1995, 1993 1994
 - Graduate Program Committee: 2010 2011, 2009 2010, 2005 2006, 2004 2005, 2003 2004, 1999 2000, 1998 1999, 1994 1995, 1993 1994
 - Undergraduate Curriculum Committee: 2005 2006, 1997 1998, 1996 1997, 1994 1995
 - Accreditation Committee(s): 2010 2011, 2009 2010, 2008 2009, 2007 2008, 2006 2007, 2000 2001, 1997 1998, 1994 1995
 - Undergraduate Curriculum Revision and Merging: 2009 2010, 2006 2007
 - Graduate Qualifying Exam Format Ad Hoc Committee: 2007 2008, 2006 2007
- Planning and Development:
 - Faculty Mentor assigned to Junior ECE Faculty: $2011\text{-}2012,\ 2010-2011$ (2 faculty), $2009-2010,\ 2008-2009,\ 2007-2008,\ 2006-2007,\ 2005-2006,\ 2004-2005,\ 2003-2004,\ 2002-2003$
 - Strategic Planning Committee: 2010 2011, 2004 2005
 - -Ph.D. Fellowship Committee: 2004 2005, 2000 2001
 - Industrial Advisory Committee: 1994 1995
 - Indonesia Exchange Committee: 1994 1995
- Infrastructure and Operations:
 - Engineering III Building Committee: 2004 2005
 - -Laboratory Committee: 2001 2002, 1999 2000, 1997 1998, 1995 1996
 - -Computing Resources Committee: 1999 2000, 1997 1998, 1995 1996, 1994 1995
 - -Lab Director: Microprocessor Lab, Open Computing Lab, Computer Architecture Lab: 1993 present
 - Lab Faculty: Intelligent Systems Lab, VLSI Lab: 1998 present
- Evaluation and Recognition:
 - Evaluation Standards Committee: 2011 2012
 - Faculty Excellence Awards Committee: 2005 2006

 $\boldsymbol{-}$ Promotion and Tenure Committee: $2010-2011,\,2005-2006,\,2004-2005,\,2003-2004,\,2002-2003,\,1999-2000$

- Promotion and Tenure Guidelines Committee: 2005 2006, 2004 2005
- Merit Raise Guidelines Committee: 2004 2005

• Recruiting:

- Faculty Search Committee: 2009 2010, 2006 2007, 2005 2006, 2003 2004, 2000 2001, 1998 1999, 1997 1998, 1996 1997, 1995 1996, 1994 1995
- Department Chair Search Committee: 2003 2004
- Staff Search Committees: 2010 2011, 2009 2010, 1995 1996, 1994 1995

F. Academic Program Leadership

• Computer Engineering Program Coordinator

Computer Engineering Undergraduate and Graduate Degree Programs and their Adminstration University of Central Florida, Department of EECS: 2010 – present

- Determined CpE course offerings and submit teaching requests
- Addressed accreditation issues and curriculum renewal specific to CpE degree program and CpE-specific courses
- Orchestrated allocation of CpE program-specific resources
- Coordinated strategic planning issues including enrollment trends and faculty recruiting
- Maintenance of degree requirements, catalogs, and coordination of Bachelors of Science,
 Masters of Science, and Ph.D degree programs

• Graduate Coordinator

Master of Science program in Computer Engineering, Masters of Science program in Electrical Engineering, Ph.D. program in Computer Engineering, Ph.D. program in Electrical Engineering, Accelerated BS+MS degree program in Computer Engineering, Accelerated BS+MS degree program in Electrical Engineering

University of Central Florida, School/Department of EECS: Dec. 2009 – August 2012

- -Chaired and convened the ECE Graduate Committee, taking care of all graduate matters, such as curriculum changes, new course recommendations, new graduate policies, Qualifying review decisions, etc.
- Processed admissions of new MS and Ph.D. students in EE and CpE Programs on a daily rolling basis
- -Reviewed and approved the Programs of Study for MS and Ph.D. students including revisions
- Assigned and oversaw contracting of 35 to 40 Teaching Assistants and/or Graders each semester to specific courses
- Hired and trained three dedicated staff members to support ECE Graduate Office
- -Organized and coordinated the Qualifying Reviews and Annual Reviews of all Ph.D. students
- Reviewed the portfolios of non-thesis Master students
- Oversaw the fellowship and TA stipends' allocation for new incoming Ph.D. students
- -Conducted Graduate Orientation seminar each Fall and Spring for newly admitted students
- Advised on daily basis EE and CpE graduate students on questions regarding admissions, programs of study, petitions, etc.
- Certified students for graduation at end of every semester
- Revamped joint faculty appointment criteria
- Processed regular and special topic Course Action Requests, Graduate Scholar requests, and Catalog revisions, and Articulation updates

- Designed an electronic database flow for graduate students towards electronic recordkeeping of all their achieved milestones.
- Conducted graduate affairs at ECE faculty meetings.

Accreditation Coordinator

University of Central Florida, School of EECS: 2009 – 2010, 2008 – 2007 (CpE), 2007 – 2008 (CpE), 2006 – 2007 (CpE)

- organized ABET accreditation and SACS assessment activities
- led curriculum renewal and laboratory revitalization efforts
- Associate Chair and Computer Engineering Program Coordinator

ECE Department, University of Central Florida, ECE Department: 1994 – 1995

- led curriculum renewal and laboratory revitalization efforts
- organized ABET accreditation and SACS assessment activities
- developed advising procedure and determined course scheduling/staffing and petitions
- supervised Computer Technicians, Administrative Staff, Student Assistants

G. Academic Committee Chairship

- Chair, EECS/ECE Department Digital Systems and Computer Architecture Technical Area Committee: 2011 2012, 2010 2011, 2009 2010, 2007 2008, 2006 2007, 2005 2006, 2004 2005, 2003 2004, 2000 2001, 1997 1998, 1995 1996, 1993 1994
- Chair, ECE Department Evaluation Committee: 2004 2005
- Chair, School of Electrical Engineering and Computer Science Promotion and Tenure Committee: 2009 2010 (evaluated eleven faculty), 2005 2006 (evaluated eleven faculty), 2002 2003 (evaluated 7 faculty)
- Chair, ECE Department Faculty Search Committee: 2011 2012 (1 faculty hired), 2011 2012 (1 lecturer hired), 2009 2010 (3 faculty hired), 2006 2007 (4 faculty hired), 2000 2001 (3 faculty hired), 1996 1997 (1 faculty hired), 1994 1995 (3 faculty hired)
- Chair, College of Engineering Teaching Award Criteria Committee: 2005 2006, 1999 2000
- Chair, College of Engineering Teaching Award Selection Committee: 1997 1998
- Chair, ECE Department Computing Resources Committee: 1997 1998, 1995 1996, 1994 1995
- Chair, ECE Department Technician Search Committee: 1995 1996
- Chair, ECE Department Laboratory Committee: 1995 1996
- Chair, ECE Department Indonesia Exchange Committee: 1994 1995
- Chair, ECE Department Accreditation Committee: 1994 1995

VII. Affiliations and Certifications

A. Professional Societies

- Senior Member of *Institute of Electrical and Electronics Engineers (IEEE)* (current)
- Member of Association for Computing Machinery (ACM) (current)
- Member of American Society for Engineering Education (ASEE) (current)

B. Professional Certification

• State of California, Board of Engineers

Registered Professional Engineer – Electrical Engineer, License Number E–13860 (current)

C. Security Clearance

• U.S. Department of Defense – Confidential-Level and Secret-Level (inactive)

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Ronald F. DeMara Awards

VIII. Honors and Awards

A. Teaching

- Outstanding Engineering Educator Southeastern United States: IEEE Professional Society Region 3, April, 2008.
 - Citation: "For Outstanding Contributions to Engineering Education in Computer Architecture and Intelligent Systems."
 - Award winner chosen from over 30,000 IEEE members in IEEE global Region 3.
 - IEEE Region 3 encompasses the southeastern United States and includes the states of Alabama, Florida, Georgia, areas of Indiana, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and the country of Jamaica.
- Outstanding Engineering Educator Florida: IEEE Florida Council, December, 2007.
- Outstanding Engineering Educator Orlando Section: IEEE Orlando Section, September, 2007.
- Scholarship of Teaching and Learning (SOTL) Award: University of Central Florida, 2008 2009.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- Teaching Initiative Program (TIP) Award: University of Central Florida, 2006 2007.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- Excellence in Graduate Teaching: UCF Dept. of Electrical and Computer Engr., 2004 2005.
- Teaching Initiative Program (TIP) Award: University of Central Florida, 2001 2002.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- Web-based Course Development Award: IEEE Southeastcon, 1998.
- Teaching Initiative Program (TIP) Award: State University System of Florida, 1996 1997.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- Nominated for *Humphrey Teaching Assistant Award*: Lehigh University, 1986 1987.

B. Research

- Research Initiative Award (RIA): University of Central Florida, 2008 2009.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- Best Paper Award: International Conference On Field Programmable Logic, Place and Route session
 - R. S. Oreifej, R. N. Al-Haddad, H. Tan, R. F. DeMara, "Layered Approach To Intrinsic Evolvable Hardware Using Direct Bitstream Manipulation Of Virtex II Pro Device," in *Proceedings of the 17th International Conference On Field Programmable Logic And Applications (FPL'07)*, Amsterdam, Netherlands, August 27 29, 2007. Conference acceptance rate 21%. Selected as best paper of track and nominated for best of conference.
- *Distinguished Researcher*: UCF College of Engineering and Computer Science, 2004 2005, Associate Professor level.
- Best Paper Award: WMSCI'05, Network Security Technologies session
 G. Wang, R. F. DeMara, A. J. Rocke, "Mobility-Enhanced File Integrity Analyzer For Networked Environments," in Proceedings of the 9th World Multi-Conference on Systemics,

Ronald F. DeMara Awards

Cybernetics and Informatics (WMSCI '05), pp. 341 – 346, Orlando, FL, U.S.A., July 10 – 13, 2005. Received *Best Paper Award*, Network Security and Security Technologies.

- Researcher of the Year: UCF Department of Electrical and Computer Engr., 2003 2004, Associate Professor level
- Research Initiative Award (RIA): University of Central Florida, 2003 2004.
 - Monetary Amount: \$5,000 permanent increase to 9-month salary
- *Distinguished Research Lecturer*: UCF College of Engineering, 2003 2004.
 - Monetary Amount: \$2,000 one-time award

C. Service

- Excellence in Professional Service: School of Electrical Engineering and Computer Science, 2008 2009.
- Achievement Award: International Multiconference in Computer Science and Computer Engineering, 2005.
- Faculty Advisor of the Year: UCF College of Engineering, 1994 1995.
- Faculty Advisor of the Year: UCF Dept. of Electrical and Computer Engineering, 1994 1995.
- Nominated for IEEE Student Organization Advisor of The Year, 1995.
- Special Appreciation Award for Outstanding Employee Contribution, IBM Corporation, Manassas, Virginia, 1989.

D. Other Recognition of Scholarship

- Marquis Who's Who in America
- Marquis Who's Who in Science and Engineering
- Eta Kappa Nu, Tau Beta Pi, and Phi Eta Sigma Honor Societies
- New York State Regents Scholarship and Science Supervisors' Scholarship
- Lehigh University Dean's List: semesters 1, 2, 3, 4, 6, 7, 8

Ronald F. DeMara Personal Information

IX. Personal Information

A. Citizenship

United States of America

B. Foreign Languages

New York Regents Certification in Spanish

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