



College of Computing,  
Engineering and  
Construction

**Annual Report of Faculty Scholarship**

**2004-2005**

The University of North Florida  
Office of Academic Affairs  
4567 St. Johns Bluff Road, South  
Jacksonville, FL 32224-2645

College of Computing, Engineering and  
Construction

Books

**Department of Computer and Information Sciences**

**L. Jamba** and K. Ferguson, "Assessment of Transfer Student Advising Programs," Advising Transfer Students: Issues and Strategies, T.J. Kerr, M.C. King, and T.J. Grites (Eds.),  
Manhattan, KS: NACADA, book chapter pp. 73-76.

Refereed Publications/Conference Proceedings

**Department of Building Construction Management**

Downes, J., **S. Ahuja**, **D. Lambert**, and **J. Alexander**, "Wireless Ad-Hoc Environmental Sensor Networks: Protocols and Setups," *Annual Review of Communications*, Volume 58, International Engineering Consortium. <http://www.iec.org/pubs/print/aroc57.html>.

Chape, Nick, Robert Richardson, and **J. David Lambert**, "Utilizing Doppler Radar to Estimate Rainfall Rates for Highway Segments," *Proceedings of the 25<sup>th</sup> Annual ESRI International User Conference*, July 2005.

**Malek, Mag**, "Application of Systematic Layout Planning (SLP) Methodology on Tower Construction Project," *Journal of American Professional Constructors*, September 2004.

**Malek, Mag**, "Structural Analysis of the World Trade Center," *Journal of American Professional Constructors*, vol. 28, no. 2, October 2004.

**Malek, Mag**, "The Effects of Biochemical Threats on HVAC System requirements and Recommendations for Commercial and Federal Buildings," *Journal of American Professional Constructors*, vol. 29, no.1, April 2005.

**Malek, Mag**, "Global Learning Technology and Assessment," *International Association for the*

*Management of Technology, October 2004.*

**Welsh, P.T., J. D. Lambert,** and P. Bogenschutz, “NWP with the Weather Research and Forecast Model and Local Data Assimilation as a Prelude to Neighborhood Weather,”  
*Proceedings of the 21<sup>st</sup> Conference on Weather Analysis and Forecasting/ 17<sup>th</sup> Conference on Numerical Weather Prediction, August 2005*  
[http://ams.confex.com/ams/WAFNWP34BC/techprogram/paper\\_93852.htm](http://ams.confex.com/ams/WAFNWP34BC/techprogram/paper_93852.htm)

### **Department of Computer and Information Sciences**

**Ahuja, Sanjay P.,** and Clark, Raquel, “Comparison of Web Services Technologies from a Developer's Perspective,” *IEEE International Conference on Information Technology, Coding and Computing (ITCC 05), April 2005.*

**Ahuja, Sanjay P.,** and Dendukuri, Krishna, “Security Problems in 802.11 Based Wireless Networks,” *3rd International Conference on Communications, Internet, and Information Technology (CIIT 04), November 2004.*

Mishra, J., and **Ahuja, Sanjay P.,** “A Survey of the State of the Art in Peer-to-Peer Computing,” *3rd International Conference on Communications, Internet, and Information Technology (CIIT 04), November 2004.*

**Ahuja, Sanjay P.,** Zhu, Y., and **Elfayoumy, S.,** “EJB and CORBA: A Performance Evaluation,”  
*Proceedings of the 8th World Multi-conference on Systemics, Cybernetics and Informatics (SCI 2004), July 2004.*

**Ahuja, Sanjay P.,** and Fitzpatrick, T., “Performance Evaluation and Comparison of Java Servlets and CGI Scripts in Web-Based Applications,” *Proceedings of the 8th World Multi-conference on Systemics, Cybernetics and Informatics (SCI 2004), July 2004.*

**Ahuja, Sanjay P., Eggen, R.,** and Chaudhry, S., “On the Performance Evaluation of a Campus LAN,” *Proceedings of the 8th World Multi-conference on Systemics, Cybernetics and*

*Informatics* (SCI 2004), July 2004.

**Ahuja, Sanjay P.**, “A Distributed Computing Course with Java Based  
Middleware Projects,”  
*Proceedings of the International Conference on Parallel and Distributed  
Processing Techniques  
and Applications* (PDPTA '04), June 2004.

**Ahuja, Sanjay P.**, and Jha, Anjani, “Comparing Shared Memory and Message  
Passing  
Middleware,” *Proceedings of the International Conference on Parallel and  
Distributed  
Processing Techniques and Applications* (PDPTA '04), June 2004.

**Ahuja, Sanjay P.**, Clark, R., **Eggen, R.**, and **Elfayoumy, S.**, “Performance  
Assessment of Open  
Source Java Based CORBA ORBs: Middleware for Internet Applications,”  
*Proceedings of the  
5th International Conference on Internet Computing* (IC '04), June 2004.

**Ahuja, Sanjay P.**, and Mishra, Jayant, "Comparison of Distributed Open Source Message Queues," *Proceedings of the 5th International Conference on Internet Computing (IC '04)*, June 2004.

**Ahuja, Sanjay P.**, and Clark, Raquel, "On the Design of Web Services," *Proceedings of the International Symposium on Web Services and Applications (ISWS '04)*, June 2004.

**Eggen, R., Ahuja, Sanjay P.**, Elliott, P., and Eggen, M., "Efficiency Considerations Between Common Web Applications using the SOAP Protocol," *3rd International Conference on Communications, Internet, and Information Technology (CIIT 04)*, November 2004.

**Eggen, R.E.** Ahuja, S. and Waters, C., "RMI, JINI, and JavaSpaces: An Efficiency Comparison," *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04)*, June 2004.

**Eggen, R. E.**, and Eggen, M., "Efficiency Considerations of PERL and Python in Distributed Processing," *The 2004 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04)*, June 2004.

**Eggen, R. E.**, Elliot, P. **Ahuja, S.** and Eggen, M., "Efficiency Considerations Between Common WEB Applications using the SOAP Protocol," *Communications, Internet and Information Technology (CIIT 2004)*, August 2004.

Yang, Y., **Elfayoumy, S.**, and **Ahuja, Sanjay P.**, “Anti-Spam Filtering Using Neural Networks,” *International Conference on Machine Learning; Models, Technologies and Applications* (MLMTA '04), June 2004.

**Sherif Elfayoumy**, Rahul Shrivastava, and **Sanjay Ahuja**, “A Web-Based Xml Editor,” *The 5<sup>th</sup> International Conference on Internet Computing* (IC2004), June 2004.

**Sherif Elfayoumy**, Yue Yang, and **Sanjay Ahuja**, “Anti-Spam Filtering Using Neural Networks,” *The 2004 International Conference on Machine Learning, Models, Technologies and Applications* (MLMTA04), June 2004.

**King, Ronnie**, “Multicast Address Allocation on Zeroconf Networks”, *Proceedings UNF Third Annual CCEC Symposium and Career Showcase*, April 2005.

**W. Klostermeyer** and G. MacGillivray, “Homomorphisms and Oriented Colorings of Equivalence Classes of Oriented Graphs,” *Discrete Mathematics*, vol. 274 (2004), pp. 161-172.

**W. Klostermeyer** and G. MacGillivray, “Pushing Vertices and Oriented Colorings,” *Bulletin of the Institute for Combinatorics and its Applications*, vol. 40 (2004), pp. 49-58.

**W. Klostermeyer** and G. MacGillivray, “Analogues of Cliques for Oriented Coloring,” *Discussiones Mathematicae Graph Theory*, vol. 24 (2004), pp. 373-388.

**Tatiana Melnik** and **Zornitza Prodanoff**, “Microsoft .NET and Security Provided by High-Level Internet Protocols,” *2005 International Conference on Parallel and Distributed Processing Techniques and Applications* (PDPTA'05).

Patrick Crews and **Zornitza Prodanoff**, “Sensor Network Simulation for ITS Development,” *Transpo 2004*, December 2004.

**Roggio, Robert**, "Effective Solutions for Global Software Development," *Proceedings of the Pacific Northwest Software Quality Conference*, October 2004.

**Roggio, Robert**, "Establishing Computer Users Groups in a Metropolitan Area," *Proceedings of the Information Systems Education Conference (ISECON 2004)*, November 2004.

**Roggio, Robert**, "A Global Approach to the Delivery of Degree Programs in Information Technology," *2nd International Conference on Information Technology*, November 2004.

**Roggio, Robert**, "Structuring an Entry-Level Java Programming Course for Delivery to a Diverse Group of Students," *Proceedings of the 2005 Hawaii International Conference on Education*, January 2005.

**Roggio, Robert**, "Practical Computer Science Assessment - An Approach to Satisfying ABET/CAC Standards," *2005 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS'05)*, June 2005.

Sean Warden, **Arturo Sanchez**, and **Sherif Elfayoumy**, "Toward a General Framework for Building Scientific Data Sharing Web Services," *The 2004 International Symposium on Web Services and Applications (ISWS04)*, June 2004.

Warden, S., **Sanchez-Ruiz, A. J.**, **Elfayoumy, S.**, "Toward a General Framework for Building Scientific Data Sharing Web Services," *Proceedings of The 2004 International Symposium on Web Services and Applications*", June 2004.

**Seyed-Abbassi, B.**, "Enhanced Learning of Database Systems Using Project Development and E-Learning in an Information Systems Curriculum," *Proceedings of International Conference on Education and Information Systems: Technologies and Applications (2004)*, Vol. 3, 108-112.

**Seyed-Abbassi, B.**, "XML in Relational Database," *Proceedings of International Conference on Cybernetics and Information Technologies, Systems and Applications (2004)*, Vol. 3, 110-115.

**Seyed-Abbassi, B.** and Leng Keng, "Relational Database and Semi-Structured Data Stored in XML," *Proceedings of International Management and Technology Conference (2004)*, CD#181.

**Seyed-Abbassi, B.**, "Design of the Information Science and Systems (IS) Curriculum in a Computer and Information Sciences Department," *Journal of*

*Systemics, Cybernetics and Informatics* (2005), Volume 2, Number 6, ISSN: 1690-4562, <http://www.iiisci.org/Journal/sci>.

**Winton, Charles**, and David Miller, "Botball Kit for Teaching Engineering Computing," *2004 ASEE Annual Conference*, June 2004.

**Winton, Charles**, "Using a Breadboard to Extend the Handy Board for Digital Logic, Multiple Sonars, and Other Things," *Proceedings of the National Conference on Educational Robotics*, July 2004.

**Winton, Charles**, "A Primitive Avoid Behavior for an Autonomous Robot," *Proceedings of the CCEC Symposium*, UNF, April 2005.

### **Division of Engineering**

**Cox, Daniel**, "A Geometric Control Algebra for Cooperative Manipulation," *10th International Symposium on Robotics and Applications at the World Automation Congress 2004*, June 2004.

**Cox, Daniel**, "Project-Centered Modules in Mechanical Systems Engineering," *International Conference on Engineering Education*, October 2004.

**Cox, Daniel**, "Testbeds for Modular Reconfigurable Actuator Systems," *American Society of Naval Engineers Reconfiguration and Survivability Symposium*, February 2005.

Faustino, I., Lewandowski, W., and **Cox, D.**, "Design and Build of Jump Cue Testing Machine," *ASME Southeastern Region XI Technical Journal*, Volume 4, Number 1, April 2005.

Yanala, V., and **Cox, D.**, "Kinematics and Inverse Kinematics of Dual-Arm Staubli RX 60," *ASME Southeastern Region XI Technical Journal*, Volume 4, Number 1, April 2005.

Lewandowski, W., Faustino I., and **Cox, D.**, "Design, Fabrication, and Implementation of Jump Cue Testing Machine," *UNF College of Computing, Engineering, and Construction Annual Journal*, April 2005.

Perry, S., Lewandowski, W., Kelly, C., Nguyen, T., Suarez, K., and **Cox, D.**, "Design and Automation for Drug Testing Kit," *UNF College of Computing, Engineering, and Construction Annual Journal*, April 2005.

Trunk, D., DeLong S., Noe, M., Giles, S., and **Cox, D.**, "Upgrade Design Process for Servo Core Winder," *UNF College of Computing, Engineering, and Construction Annual Journal*, April 2005

**Malhas, Faris**, "Seismic Studies of Horizontal Joints in Large Precast Concrete Panel Walls," *The Seventh International Conference on Computational Structures Technology*, September 2004

**Malhas, Faris**, "Structural Modeling of a Bridge-Road-Vehicle Dynamic Interaction System," *The Seventh International Conference on Computational Structures Technology*, September 2004.

Sutterer, K., **Hudyma, Nick**, and Wu, Jonathan, "Undergraduate Geotechnical Laboratory and Field Testing: A Review of Current Practice and Future Needs," *ASCE Geo-Frontiers Conference*, January 2005.

**Jackson, Michael**, "Measuring Pavement Friction Characteristics at Higher Speeds for Added Safety," *ASTM International Symposium on Pavement Surface Condition/Performance Assessment: Reliability and Relevancy of Procedures and Technologies*, December 2004.

**Schonning, Alexandra**, Ionescu, B. Oommen and T. Conway, "3-D Modeling, Smoothing and Finite Element Modeling of the Femur," *2004 ASME International Mechanical Engineering Congress and R & D Expo*, November, 2004.

**Vasana, Susan**, "Diagonalizer for Correlated or Unbalanced Diversity Branches in Rayleigh or Rician Fading Channels and Wireless Communication," *IEEE 2004 Electro/Information Technology Conference Proceedings*, August 2004.

**Vasana, Susan**, "Conversation of Correlated and Unbalanced Antenna Diversity for Wireless Communication," *International Association of Science and Technology for Development, Communications, Internet and Information Technology*, 2004.

**Vasana, Susan**, "A Simple Demodulation Method in Zero-IF Receiver," *International Conference on Circuits, Signals and Systems, International Association of Science and Technology for Development*, November 2004.

Michael Barnett, Tony Lee, Larry Jentgen, Steve Conrad, Harold Kidder, **John Wooschlager**, Eduardo Cantu Lozano. Scott Kelly, Michael Eaton, Darren Hollifield and Colin Groff, "Real-Time Automation of Water Supply and Distribution for the City of Jacksonville, Florida, USA," *Journal of EICA*, vol. 9, No. 3, pp15-28 (2004).

## Refereed & Invited Presentations

### Department of Building Construction Management

**Lambert, J. David**, Invited presentation, "Advanced Weather Information Systems Lab Research Program," The Annual Meeting of the Florida Hurricane

Research Alliance, February 2005.

**Malek, Mag**, “Case Study: Balcony Concrete Distress Investigation”, Canadian Civil Engineering Conference, June 2005.

### **Department of Computer and Information Sciences**

**Eggen, R., Ahuja, Sanjay P.**, and Waters, C., “RMI, JINI, and JavaSpaces: An Efficiency Comparison,” *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications* (PDPTA '04), June 2004.

**Eggen, R. E.** and Eggen, M. “Efficiency Considerations of PERL and Python in Distributed Processing,” *The 2004 International Conference on Parallel and Distributed Processing Techniques and Applications* (PDPTA'04), June 2004.

**King, Ronnie**, “Florida Information Technology Centers of Excellence”, The U.S. Administrator for Electronic Government and Information Technology, Office of Management and Budget, Washington D.C., July 2004.

Tatiana Melnik and **Zornitza Prodanoff**, “Microsoft .NET and Security Provided by High-Level Internet Protocols,” 2005 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'05).

Patrick Crews and **Zornitza Prodanoff**, “Sensor Network Simulation for ITS Development,” *Transpo 2004*, December 2004.

**Roggio, Robert**, “Effective Solutions for Global Software Development”, *Proceedings of the Pacific Northwest Software Quality Conference*, October 2004.

**Roggio, Robert**, “Establishing Computer Users Groups in a Metropolitan Area,” *Proceedings of the Information Systems Education Conference* (ISECON 2004), November 2004.

**Roggio, Robert**, “A Global Approach to the Delivery of Degree Programs in Information Technology,” *2nd International Conference on Information Technology*, November 2004.

**Roggio, Robert**, “Practical Computer Science Assessment - An Approach to Satisfying ABET/CAC Standards,” *2005 International Conference on Frontiers in Education: Computer Science and Computer Engineering* (FECS'05), June 2005.

**Seyed-Abbassi, B.**, “Enhanced Learning of Database Systems Using Project Development and E-Learning in an Information Systems Curriculum,” *Proceedings of International Conference on Education and Information Systems: Technologies and Applications* (2004), Vol. 3, 108-112.

**Seyed-Abbassi, B.**, “XML in Relational Database,” *Proceedings of International Conference on Cybernetics and Information Technologies, Systems and Applications* (2004), Vol. 3, 110-115.

**Seyed-Abbassi, B.** and Leng Keng, “Relational Database and Semi-Structured Data Stored in XML,” *Proceedings of International Management and Technology Conference* (2004), CD#181.

**Winton, Charles**, and David Miller, “Botball Kit for Teaching Engineering Computing,” *2004 ASEE Annual Conference*, June 2004.

**Winton, Charles**, “Using a Breadboard to Extend the Handy Board for Digital Logic, Multiple Sonars, and Other Things,” *Proceedings of the National Conference on Educational Robotics*, July 2004.

### **Division of Engineering**

**Adewale, A.** and O’Brien, K.T., “Designing Extruders Screws for Liquid Crystal Polymers,” *Journal of Engineering Research*, 10, 1&2.

**Choi, Chiu**, “Undergraduate Controls Laboratory Experience,” *2004 American Society for Engineering Education International Colloquium*, September 2004.

**Choi, Chiu**, “Controller Design - One Op. Amp. Solutions,” *37th Southeastern Symposium on System Theory*, March 2005.

Faustino, I., Lewandowski, W., and **Cox, D.**, “Design and Build of Jump Cue Testing Machine,” *ASME Southeastern Region XI Technical Journal*, Volume 4, Number 1, April 2005.

Yanala, V., and **Cox, D.**, “Kinematics and Inverse Kinematics of Dual-Arm Staubli RX 60,” *ASME Southeastern Region XI Technical Journal*, Volume 4, Number 1, April 2005.

**Cox, D.**, “Cooperative Manipulation Testbed Development – Kinematics,” *Proceedings of 17<sup>th</sup> Annual Florida Conference on Recent Advances in Robotics*, Orlando, FL, May 2004.

**Cox, D.**, “A Geometric Control Algebra for Cooperative Manipulation,” *10<sup>th</sup> International Symposium on Robotics and Applications at World Automation Congress 2004*, June 2004.

**Cox, D.**, “Project-Centered Modules in Mechanical Systems Engineering,” *International Conference on Engineering Education (ICEE) 2004*, October 2004.

**Cox, Daniel**, “Testbeds for Modular Reconfigurable Actuator Systems,” *American Society of Naval Engineers Reconfiguration and Survivability Symposium*, February 2005.

**Cox, Daniel and Alexandra Schonning**, “Industry Collaboration as a Basis for Florida’s First Coast Manufacturing Innovation Partnership,” *11th International Conference on Industry Engineering and Management Systems*, March 2005.

**Malhas, Faris**, “Seismic Studies of Horizontal Joints in Large Precast Concrete Panel Walls,” *The Seventh International Conference on Computational Structures Technology*, September 2004

**Malhas, Faris**, “Structural Modeling of a Bridge-Road-Vehicle Dynamic Interaction System,” *The Seventh International Conference on Computational Structures Technology*, September 2004.

**Hudyma, N.**, Avar, B. and Karakouzian, M., “Compressive Strength and Failure Modes of Lithophysae-rich Topopah Spring Tuff Specimens and Analog Models Containing Cavities,” *International Journal of Engineering Geology*, Volume 73, No. 1-2, pp. 179-190, May 2004.

**Hudyma, N.**, Avar, B. and **Malhas, F.**, “Crushing of a Natural Beach Sand Under Engineering Loads,” *Proceedings of the 39th Symposium on Engineering Geology and Geotechnical Engineering*, pp. 1-9, May 2004.

Sutterer, K., **Hudyma, N.**, and Wu, J., “Undergraduate Geotechnical Laboratory and Field Testing: a Review of Current Practice and Future Needs,” *ASCE Geo-Institute Annual Congress Geo-Frontiers 2005*, January 2005.

**Jackson, N.M.**, “Study on Fuel Consumption vs. Pavement Smoothness,” *49th Annual Convention of the Asphalt Paving Association of Iowa*, December 2004.

**Jackson, Michael**, “Measuring Pavement Friction Characteristics at Higher Speeds for Added Safety”, *ASTM International Symposium on Pavement Surface Condition/Performance Assessment: Reliability and Relevancy of Procedures and Technologies*, December 2004.

**Jackson, Michael**, "Measuring Pavement Characteristics at Elevated Speeds," *FAMU/FSU Civil and Environmental Engineering Seminar Series*, January 2005.

**Schonning, Alexandra**, Ionescu, B. Oommen and T. Conway, "3-D Modeling, Smoothing and Finite Element Modeling of the Femur," *2004 ASME International Mechanical Engineering Congress and R & D Expo*, November 2004.

**Schonning, Alexandra** and **Daniel Cox**, "Development of a Mentoring Program to Improve Engineering Education and Training Among College and Pre-College Students," *11th International Conference on Industry Engineering and Management Systems*, March 2005.

**Schonning, A.**, "Finite Element Modeling with a Biomechanical Application," *ASME Southeast Regional XI Conference*, April 2005.

Oommen, B., Nicholson, D., Conway, T., **Schönning, A.**, and Ionescu, I., "Cerebral Mechanics During Traumatic Brain Injury," *28th Annual Meeting of the American Society of Biomechanics*, September 2004.

**Schonning, Alexandra**, Binu Oommen, Irina Ionescu, Ted Conway, "Utilization Of True Grid In Building A Hexahedral Femur Mesh," *2005 Summer Bioengineering Conference*, June 2005.

Ionescu, Irina ,M, Binu Oommen, **Alexandra Schonning**, Ted A Conway, David W Nicholson, "Effects Of Frictional Sliding On Stress Transfer For A Long-Stemmed Tibial Implant," *2005 Summer Bioengineering Conference*, June 2005.

**Vasana, Susan**, "High Sensitive Detection Method for Manchester Coded Data in Digital Communication Systems," *1<sup>st</sup> Florida Research Consortium (FRC) Technology Transfer Conference*, May 2004.

**Vasana, Susan**, "A Demodulation Method for Baseband M-ary FSK Signals using Quadrant Crossings and Soft-Decision Detection," *Wireless 2004 – The 16<sup>th</sup> International Conference on Wireless Communications*, July 2004.

**Vasana, Susan**, "Conversation of Correlated and Unbalanced Antenna Diversity for Wireless Communication," *International Association of Science and Technology for Development, Communications, Internet and Information Technology*, 2004.

**Vasana, Susan**, "Diagonalizer for Correlated or Unbalanced Diversity Branches in Rayleigh or Rician Fading Channels and Wireless Communication," *IEEE 2004 Electro/Information Technology Conference Proceedings*, August 2004.

**Vasana, Susan**, "A Simple Demodulation Method in Zero-IF Receiver," *International Conference on Circuits, Signals and Systems, International Association of Science and Technology for Development*, November 2004.

**Vasana, Susan**, "Decorrelator for Antenna Diversity in Wireless and Mobile Communication Systems," *State University System Technology Transfer Conference*, May 2005.

**Welsh, Patrick**, “High Resolution Rainfall Results from a New Atmospheric Model: Weather Research and Forecast Model,” *Hurricanes of 2004 Federal Interdepartmental Hurricane Conference*, Office of Federal Coordinator for Meteorology.

**Welsh, Patrick**, “The NOAA Coastal Storms Initiative (CSI) Weather Research & Forecast Model Project: A Prelude to Neighborhood Weather,” *American Waters Resources Association Annual Meeting*, November 2004.

**Welsh, Patrick**, Brent Shaw, and John Smart, “The NOAA Coastal Storms Initiative WRF Modeling Project: Year 1: Setup through Verification,” *Sixth Conference on Coastal Atmospheric and Oceanic Processes of the American Meteorological Society*, January 2005.

**Welsh, Patrick**, and Peter Bogenschutz, “The NOAA Coastal Storms Initiative WRF Modeling Project: Year 2: Improving the Local Model,” *Sixth Conference on Coastal Atmospheric and Oceanic Processes of the American Meteorological Society*, January 2005.

**Welsh, Patrick**, “The NOAA Coastal Storms Initiative (CSI): Offshore Forecast Improvements,” *Sixth Conference on Coastal Atmospheric and Oceanic Processes of the American Meteorological Society*, January 2005.

**Welsh, Patrick**, “NOAA Coastal Storms Program (CSP): Offshore Forecasting Improvements, Buoy, Winds and Waves,” *NOAA Coastal Storms Project Florida Wrap-up Meeting*, January 2005.

**Welsh, Patrick**, “Weather Research and Forecast (WRF) Model's Real-time Predictions of Rainfall During Recent Florida Hurricanes,” *Governor's Hurricane Conference*, May 2005.

**Woolschlager, John**, “Protecting the JEA Water System During the Super Bowl,” *The Florida Water Environment Association*, September 2004.

Barnett, M., Lee, T., Jentgen, L., Conrad, S., Kidder, H., **Woolschlager, John**, Lozano, E.C., Kelly, S., Eaton, M., Hollifield, D., and Groff, C., “Real-Time Automation of Water Supply and Distribution for the City of Jacksonville, Florida, USA,” *Journal of EICA*, Vol. 9, No. 3, 2004.

Jentgen, L., Conrad, S., Kidder, H., Barnett, M., and **Woolschlager, John**, “Water System Operations Optimization – Implementation Experience at JEA,” *Research Report published by the American Water Works Association*, 2005.

## **Department of Building Construction Management**

**Jensen, Donald**, Construction firm grants to fund the National American Builders Association student design competition, \$6,500.

**Jensen, Donald**, Construction firm grants to fund the Hard Hat Banquet, \$15,000.

**Jensen, Donald**, Construction firms grants to fund the Employment Showcase, \$2,000.

**Lambert, J. David**, “Development of a Florida Mesoscale Weather Station – Phase I: Design, Data Assimilation and Research,” National Oceanic and Atmospheric Administration (via FIU), \$169,938.

**Lambert, J. David**, “Equipment for ESF8CHAS Hazmat Incident Response and Assessment Applications,” Florida Department of Health, \$47,250.

**Lambert, J. David**, and **Mag Malek**, “Development of the Hurricane Damage Assessment Research Team (HDART)”, Mr. Don Poag, \$5,000.

**Malek, Mag**, “Balcony Concrete repair for Stonewood Phase II: Hiring the Contractor,” Stonewood Towers Condominium Association, \$5,000.

## **Department of Computer and Information Sciences**

**Chua, Yap**, and **Behrooz Seyed-Abbassi**, “Encourage Student Research for 2005 CCEC Symposium”, Foundation Board of Trustees Initiative Grant, \$5,500.

**Eggen, R. E**, Annual software license donation from Parasoft Corporation for “Insure,” “Jtest,” and “Codewizard” program products.

**Elfayoumy, Sherif**, “Using SAS Enterprise Miner to Teach Data Mining”, UNF Summer Teaching Grant, \$5000.

**Roggio, Robert**, “Object-Oriented COBOL for Web Programming”, UNF Summer Faculty Teaching Grant, \$5000.

**Roggio, Robert**, Annual software license donation from IBM for “Rational Rose”, “Requisite Pro”, and other associated Rational Software Products.

**Seyed-Abbassi, Behroz**, Intellectual Life Grant to support 2005 CCEC Symposium, \$600.

Tatiana Melnik and **Zornitza Prodanoff**, “Microsoft .NET and Security Provided by High-Level Internet Protocols”, 2005 UNF Undergraduate Research Grant, \$1500.

## **Division of Engineering**

**Alexander, John**, “Secure Scan passive Metal Detector Design,” View Systems, \$52,500.

**Alexander, John**, “Rapid Response Sensor Networking for Multiple Applications,” Department of Defense, \$87,590.

**Alexander, John**, “Monitoring Units and Transmitters for Alzheimer’s Patients,” TRx Integrations, \$10,227.

**Cox, Daniel**, “First Coast Manufacturing Innovation Partnership,” National Science Foundation, \$120,100.

**Fletcher, James**, “Implementation Support Services for the FDOT for the Mobile Retroreflectivity Unit,” Florida Department of Transportation, \$50,385.

**Hudyma, Nick**, “Sink Holes in Dry Retention Ponds Phase II,” Universal Engineering, Florida Department of Transportation, \$28,294.

**Hudyma, Nick**, Summer 2004 Scholarship Grant, “Controlling Expansive Soils Using Soil Mixing with Sand,” \$5,000.

Dr. Amir Mirmiran, **Dr. Faris A. Malhas**, and Dr. Zhenyu Zhu, “A Pilot Study for Assessing, Protecting, Sensing, and Hardening for Safety and Security of Florida Transportation Structures,” University Consortium for Intermodal Transportation Safety and Security, \$98,000.

**Jackson, N. Michael**, “Implementation Support Services for the FDOT for the Mobile Retroreflectivity Unit,” Florida Department of Transportation, \$50,385.

**Jackson, N. Michael**, “Use of Nondestructive Techniques to Estimate the Allowable Vibratory Compaction level During Construction of Coarse-Graded Superpave Mixtures,” Florida Department of Transportation and the U.S. Department of Transportation, \$247,035.

**Schonning, Alexandra**, “First Coast Manufacturing Innovation Partnership,” National Science Foundation, \$120,100.

**Welsh, Patrick**, “Development of a Florida Mesoscale Weather Station – Phase I: Design, Data Assimilation and Research,” National Oceanic and Atmospheric Administration (via FIU), \$169,938.

**Woolschlager, John**, “JEA Operations Optimization Project,” Jacksonville

Electric Authority, \$20,000.

**Woolschlager, John**, “Rapid Response Sensor Networking for Multiple Applications,” Department of Defense, \$87,590.

**Schonning, Alex**, Summer 2005 Scholarship Grant, “Material Testing of Bone Cement,” \$5,000.

**Vasana, Susan**, 2005 Undergraduate Research Award, “Further Study of UWB in Wireless Communications,” \$1,500.

### Patents Obtained

**Lambert, J. David, John Alexander and Gerald Merckel**, The U.S. Patent and Trade Mark Office advises a third patent, “Modular Architecture for Rapid Deployment and Coordination of Emergency Field Surveillance” has been “Allowed”. This UNF patent is the third in a series of patents (U.S. Patent 6,574,340 and U. S. Patent 6,686,340) based on research conducted at UNF in the area of Emergency Management Systems. This research was conducted in the Applied Global Systems Laboratory.

**Vasana, Susan**, Chris Thomas, and Clint Powell, “Method and Apparatus for Gain Normalization of a Correlation Demodulator,” based on research conducted while at Motorola.