News Bytes

Special points of interest:

- UNCW Digital Library Team Receives $425,000 NSF Grant

- Dr. Barbara Ann Greim Funds Chair's Scholarship

- Undergraduates Showcase Their Research

- UNCW Anthropometric-Computing Team Receives $800,000 Contract

- Dr. Harry Smith Retires

A Classroom Building for the Future: UNCW's Computer Information Systems Building

In fall 2005, the UNCW Department of Computer Science (CSC) will move into a new $12 million, 62,000 square-foot Computer Information Systems building. Co-located in the building will be the Department of Information Systems and Operations Management (ISOM) from the Cameron School of Business. The building's construction will be paid for by state funds approved in a bond referendum several years ago. Construction of this state-of-the-art facility is scheduled to begin in summer 2004.

It is designed to enable and foster interdisciplinary collaboration in information sciences and other technology areas across the university.

Specific goals for this facility include:

- To provide an interior that reflects technology, is student-centered, and teamwork-oriented.

- To provide a space that encourages active and cooperative learning.

- To provide opportunity for collaboration between academic departments.

- To provide space as part of industry outreach and research collaboration.

- To raise information technology literacy and capabilities.

Some of the unique features of the computer information systems building include:

- Multidisciplinary, hands-on laboratories.

- Dynamically re-configurable research and instructional spaces.

- Student "sandboxes" to facilitate team-based collaborative learning.

- Hands-on exploration laboratory showcasing emerging technologies.

- Electronic trading room.

- Net-centric, mobile computing environment.

- Electronic information kiosks with an emphasis on personalized interaction.

- High-speed network connectivity via an all-fiber backbone throughout the building.

From the very beginning, an ambitious set of goals for a new type of classroom building was laid out. All academic and administrative stakeholders were involved in the design of the new building and collaboratively developed the plan for this facility. Two UNCW academic departments (CSC and ISOM) agreed to be housed in a common space and to work together to develop a unique, inter-disciplinary graduate program that will begin in Fall 2005.

It is imperative that the vision and goals for the Computer Information Systems Building are met. The unique capabilities of this building coupled with a growing realization of the importance of information technology as a strength of any leading comprehensive university are vital to UNCW's future.

UNCW Digital Library Team Receives $425,000 NSF Grant

An interdepartmental team consisting of faculty from biology, chemistry, computer science, mathematics and statistics, and Randall Library has received a two-year $425,000 National Science Foundation (NSF) grant to study the integration and sustainability of the iLumina Digital Library within UNCW's Randall Library. "*Integrating Digital Libraries and Traditional Libraries: A Model for Sustaining NSDL Collections,*" will investigate the issues involved with integrating an existing digital resource repository with a traditional research library. The iLumina/Randall model will be generalized and shared with the wider digital library community as a possible sustainability model for other NSF-funded digital libraries that are affiliated with universities.

Ron Vetter, chair of computer science, said, "This research effort will contribute to the advancement of science and mathematics education by developing new software tools and techniques for accessing science and mathematics teaching and learning resources and by the training of undergraduate student programmers. Computer science undergraduate students will learn to tailor existing software to meet the specific needs of the project, work as part of a design and development team, and apply what they have learned in their courses to a significant project with deadlines and budgets."

You can learn more about the project by visiting http://www.ilumina-dlib.org.

Dr. Vetter is a co-principal investigator on the project.

> **The department has grown from 8 full-time faculty in 1998 to 14 full-time faculty today.**

Computer Science Chair's Scholarship

Barbara Ann Greim, associate professor emeritus of computer science, has established the Computer Science Chair's Scholarship as an annually funded student scholarship in the amount of $1,000. The scholarship will be used to assist undergraduate and/or graduate students majoring in Computer Science. The scholarship is considered a merit scholarship and the recipient will be selected on demonstrated academic ability.

Dr. Greim came to UNCW in 1969 and spent 31 years teaching and mentoring students. She was instrumental in establishing the Computer Science Program (in 1977) as part of the Mathematical Sciences Department. In 1998, computer science became a separate department and Dr. Greim served as chair for the first two years.

Computer Science Department

Back row: Gene Tagliarini, Allen Randall, Jack Tompkins, David Berman, Laurie Patterson, and Barbara Ann Greim.

Front row: Eric Patterson, Emma Kay Thornton, Ronald Vetter, Karl Ricanek, Fletcher Norris, Thomas Hudson, Marni Ferner, and Dean Jo Ann Seiple.

Not pictured: Clayton Ferner, Sridhar Narayan, Ralph Bradley, and Gur Adhar

UNCW Anthropometric-Computing Team Receives $800,000 Contract

AGE-RELATED MORPHOLOGICAL CHANGES

An interdepartmental team consisting of faculty from the Department of Computer Science and the Anthropology Program at UNCW has received notification of approval for a three-year $800,000 subcontract to Computer Sciences Corporation/Dynacorp, Department of Defense contractors, to study the effects of aging on the human face in relation to age-progression. They will also be partnering with Genex Technologies, a rapidly growing company in 3-D technology based in Maryland. Their project, Age-Related Morphological Changes, will involve studying a large range of photos and three-dimensional scans of individuals over a wide range of ages and nationalities. The focus of the effort will be to investigate and produce three-dimensional anthropometric models and algorithms to simulate and predict the various changes that take place in the face as a person ages. The research project will contribute to the important areas of forensic science, computer facial modeling and animation, visual age-progression, and automatic face recognition as well as benefit learning opportunities for students in both computer science and anthropology programs. Several students from UNCW will be involved, helping with data organization, research, and programming to aid the project.

Members of the team include: **Karl Ricanek**, computer science; **Eric Patterson**, computer science; and **Midori Albert**, anthropology

# Undergraduate Student Research News

Charles E. White II received a $1,000 travel grant from the Honors Program to present "An Algorithm for Swarm-based Color Image Segmentation" that was accepted for publication in the IEEE Proceedings of the Southeast Conference 2004. The paper was co-authored by G. A. Tagliarini and S. Narayan.

Jennifer L. S. Trasti received a travel grant from the Honors Program to attend the Mid-Atlantic Conference on the Scholarship of Diversity at Virginia Tech in Blacksburg, VA, in March where she co-presented with Laurie Patterson. Their work is also published in the proceedings from this conference. In addition, Trasti won $100 for her talk at the ISOM/CSC Advisory Board meeting on her scientific visualization project: finding new and better ways to understand 40-year-old data on the composition of the seafloor under the Timor Sea (her

adviser on this project was Dr. Paul Thayer, Geology).

The Sigma Xi Spring Initiation Event was April 15 in Dobo Hall on the UNCW campus. There was a session for student poster presentations in the lobby prior to the business meeting and seminar for undergraduate and graduate students, including non-members of Sigma Xi.

Several computer science students in Dr. Tagliarini's Pattern Recognition class presented their work, including: **Charles White,** "Automatic Computer Classification of Dolphin Signature Whistles;" **Sean Watson,** "Autonomously Categorizing Patterns in Digital Imagery Using Artificial Intelligence" and "Two-Dimensional Multi Spectral Wavelet Transforms for Automatic Pattern Recognition;" **Jeff Murr,** "Orienting to Sound Signals Using Feedforward Neural Networks;" and **Eddie Dunn**
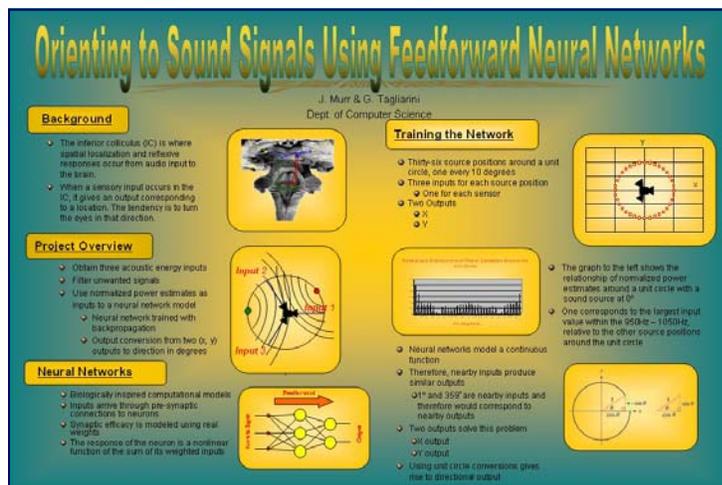
**J. Murr and G. A. Tagliarini.
Poster Presented at Sigma Xi**

and **Danny Reeves,** "Automatic Pattern Recognition for Analyzing the NASDAQ Composite Index".

Michael Wood received a travel grant from the Honors Program to present "Toward a Graphical User Interface for Grid Services" that was accepted for publication in the Proceedings of the IEEE Southeast Conference held in Greensboro, NC, March 26-28, 2004. The paper was co-authored by C. Ferner and J. Brown.

Dr. Harry Smith Retires

**Harry Smith** was honored at a retirement party on Monday, April 19, 2004.

Dr. Smith arrived at UNCW in August 1987, first as a visiting professor in the Department of Mathematical Sciences and then as a tenured associate professor. Dr. Smith received his B.S., M.A., and Ph.D. from Columbia University in applied mathematics (computer science was not yet a discipline). Harry had been with IBM for 30 years, primarily at the Palo Alto

Scientific Center, before coming to UNCW. He also taught computer science as an adjunct professor at San Jose State from 1982 to 1987.

Dr. Smith has been very active in the computer science community. He has written a textbook on data structures and has served on the ACM SIGGRAPH (computer graphics) conference committee for many years. His research interests lie in the areas of data structures, computer graphics,

and parallel computing. He was awarded an NSF grant to develop UNCW's undergraduate parallel computing course and was one of the key leaders in developing our "3-D Computer Graphics Tools and Literacy" and "Computer Animation" courses.

Below are some pictures taken at the party! Feel free to send retirement wishes to Dr. Smith at hsmith@uncw.edu.
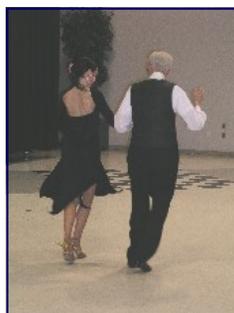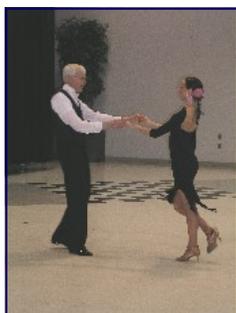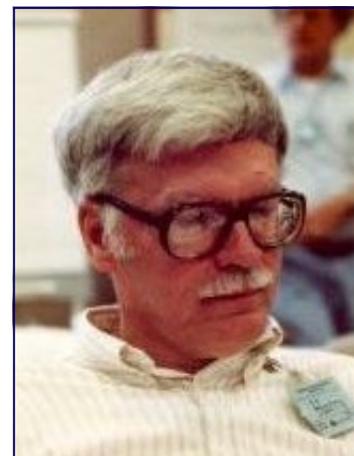
CSC Faculty Receive Grid Computing Grant

Several CSC faculty have received word that their two-year grid computing project will be funded for $557,634 by the University of North Carolina Office of the President effective June 1, 2004. The project is a collaborative effort among a multi-discipline, multi-investigator core research team at

UNCW and several discipline-focused researchers at several partner institutions: NCSU, WCU, NCCU, ECU, and CFCC. The research areas and institutional interests of this project are: Advanced Software Development, Computational Chemistry, Bioinformatics, Combinatorics, Business

Computing, and Education and Training. UNCW Department of Computer Science members of the research team include:

Dr. Ron Vetter, principal investigator and project director (PI/PD);

Dr. Clayton Ferner, co-principal investigator;

Dr. David Berman, co-principal investigator;

Dr. Tom Hudson, co-principal investigator.

The grant will provide funds to hire eight undergraduate computer science majors as programmers on the project.

Faculty Scholarship

Gur Adhar presented "Optimal Interval Routing for k-Caterpillars and Maximal Outerplanar Network" at the International Conference on Parallel and Distributed COMputing and Networks (PCDN 2003) in Innsbruk, Austria.

Written by **David Berman** with Sandra McLaurin, and Doug Smith; "Ranking Whist Players" was accepted for publication in *Discrete Mathematics*. Berman also presented "Some New Latin Triangles" at the 35th Southeastern Conference on Combinatorics, Graph Theory, and Computing in Boca Raton, FL, in March.

Clayton Ferner with M. Wood, and J. Brown published "Toward a Graphical User Interface for Grid Services" in the Proceedings of the IEEE SoutheastCon 2004 Conference.

On October 28-29, 2003, Dr.

Ferner with Jeff Brown, **Ron Vetter,** and Michael Wood presented "A Demonstration of Grid Services" at the NC Grid Computing Forum in Chapel Hill.

Thomas Hudson, successfully defended his Ph.D. dissertation, "Adapting a Collaborative, Force-Feedback, Graphical User Interface to Best-Effort Networks" (advised by Russell M Taylor II and Kevin Jeffay). In addition, "Managing Collaboration in the nanoManipulator," was published in the journal *Presence: Teleoperators and Virtual Environments*. Other authors on this article include Aron Helser (3rd Tech Inc), Diane Sonnenwald (Goteborg University and University College of Boras, Sweden), and Mary Whitton (UNC Chapel Hill).

Sridhar Narayan and **Jack Tompkins** published "Using Robotics to Enhance Learning in Introductory Computer Science Courses" in

Proceedings of the 41st ACM Southeast Regional Conference (ACMSE'03), Savannah, GA, pp. 412-415, March 2003.

Laurie Patterson's paper "Evaluation of Compliance to the Directive to Retain Female Students in the Computer Science Program at the University of North Carolina at Wilmington" was nominated for an Outstanding Research Paper by Nova Southeastern University in North Miami Beach, FL. She, along with student Jennifer Trasti, presented a paper based on this research at the Mid Atlantic Conference on the Scholarship of Diversity at Virginia Tech. In addition, she was invited to participate in a Women in Leadership panel on Women in Underrepresented Fields.

Karl Ricanek, Eric Patterson, and Midori Albert presented "Age Related Morphological Changes: Effects on Facial Recognition Technologies," to the Department of Defense. .

Ricanek, **E. Patterson**, and Albert also received a grant from the Department of Defense for "Age Related Morphological Changes: 3D Models of the Face and Head."

A. Abdelbar, D. Hassan, **Gene A. Tagliarini, Sridhar Narayan** published "Three heuristics for receptive field optimization for ensemble encoding," in Proceedings of the International Joint Conference on Neural Networks (IJCNN 2003), Portland, OR, July 2003.

Ron Vetter's article, "Metadata Lessons Learned from the iLumina Digital Library," was accepted for publication in *Communications of the ACM*. The article was co-authored by Barbara Heath, East Main Consulting; and David McArthur and Marilyn McClelland, both of North Carolina Central University.

Staff Appreciation

In August 2003, UNCW held its 28th Annual Services Awards Program. One of the 13 nominees for the Board of Trustees Staff Award for Excellence was **Emma Kay Thornton** from the Computer Science Department.

Hundreds of staff and faculty received a buffet lunch while supporting their colleagues at the ceremony. UNCW Chancellor **Rosemary DePaolo** presented each nominee with a certificate.

The University of North Carolina at Wilmington

Award of Excellence Nominee

Emma Kay Thornton

is hereby recognized as a UNCW Award of Excellence Nominee for outstanding service, accomplishment, and contribution to the University of North Carolina at Wilmington, the community, and the State of North Carolina.

Given this 7th day of August, 2003   Chancellor

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      Street/PO Box   City   State   ZIP + 4

Home Phone: _____   Work Phone:_____   E-Mail _____

Graduation date: _____   Degree/Major: _____   Spouse UNCW Graduate? Yes/No

Employer: _____   Position_____   Matching Gift Company? Yes/No

Business Address:_____

Spouse: _____
     Dr./Mr./Mrs./Ms.   First   Middle   Maiden Last   Suffix

Spouse's Employer: _____ _Position_____   Matching Gift Company? Yes/No

Enclosed is my gift of $_____ for the Computer Science Department Trust Fund (*make checks payable to UNCW)* or

charge my ___Visa or ___Mastercard   Number: _____   Expiration Date (mm/yyyy)_____

Name as appears on card: _____

Signature: _____

Return to: Advancement Services, University of North Carolina at Wilmington, 601 South College Road, Wilmington NC 28403

This gift qualifies as a charitable donation. THANK YOU for your consideration and generosity!

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