

# NEWS BYTES

## From the Chair...

### Student Outcomes Assessment

UNCW has been undergoing an extensive self-study over the past two years in preparation for re-affirmation of accreditation by the Southern Association of Colleges and Schools (SACS). All administrative and academic units on campus have been actively involved in this effort, including the Department of Computer Science.

One of the criteria used by SACS is an implicit requirement that each program will establish goals that derive from and support the purpose of the institution, evaluate its success in achieving these goals, and demonstrate the use of evaluation in making appropriate modifications in resources, programs, and services. Generally, this involves answering questions like *“How do you assess that your program is teaching students what*



Bear Hall

*they need to learn?” and “How is assessment data being used to improve the curriculum?”*

One way that we can perform student outcome assessment is to present a list of examples and demonstrate how those examples are used to effect change. For example, the Department of Computer Science collects and analyzes a variety of data about student achievement: honor society memberships, honors theses completed, job placement and salary data, numbers of students accepted to

graduate school, student performance in capstone courses, employer satisfaction with student interns, graduating senior surveys, and alumni news. Many of you have sent faculty in the department email reporting on your job experiences after graduation. This information is vitally important to the department as it helps us in the evaluation of our program, determine what we are doing right, and what areas require further improvements.

In the past few years the Computer Science curriculum has changed considerably. The department has migrated to Java as our primary programming language, requires all students to complete a course in software engineering, offers several new courses in exciting areas such as Artificial Intelligence, Advanced Web Programming and Computer Animation, and has an active for credit student internship program.

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## ALUMNUS: Carla Hunt '99

Computer Science alumna, **Carla Hunt** recently resigned her position with IBM to begin graduate school in January 2002. Carla is planning to attend North Carolina Central University (NCCU) to study for a master's in project management with a concentration on computer networking.

After graduating, Carla felt that the education she received from UNCW was “at least as good as, if not higher quality than” what she could have received elsewhere. She was also impressed with the “overall caliber of

dedication” of the professors here in the computer science department.

While at IBM, Carla worked in Global Services and specialized in AIX/DNS/DHCP support. Shortly after starting at IBM, Carla was working as a consultant in remote locations for their commercial customers. She was also the lead worker for setting up a LAN for GMAC. It involved working with six remote sites. The NY site was the most difficult to setup because there were two geographical office locations and IP/IPX routing at the LAN level.

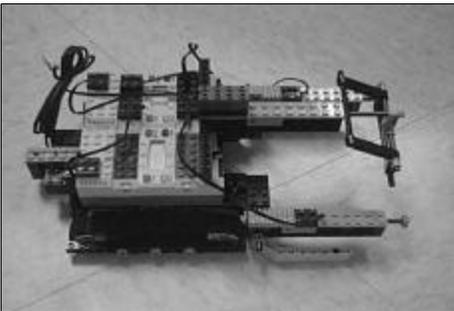
## Update: Fletcher Norris Scholarship Endowment Fund

Approximately \$12,000 of the \$25,000 goal is in hand! A reminder: Dr. Norris and alumnus **Kit Cospser** have pledged a matching gift for your gift! Consider making an end-of-year gift to the Fletcher Norris Endowment.

## Curriculum Highlights: CSC 415

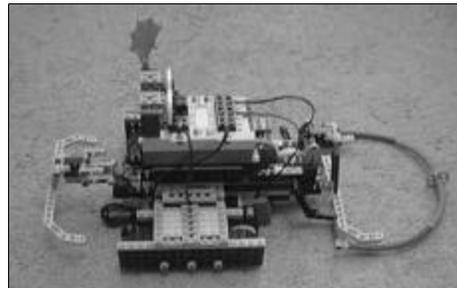
Artificial Intelligence (AI) took an interesting turn this semester when a robotics component was added to the course. With the generous support of the Friends of UNCW and the Computer Science Department, Drs. **Narayan** and **Tagliarini** acquired eight Lego RCX robot systems.

The robots use a Hitachi 83xx central processor unit and have about 32KB of available memory in a system that is enclosed in a plastic block (1.5" x 2.5" x 3.75") that can easily be mechanically connected to other Lego blocks. In addition, the RCX robots have three input ports that can be used to monitor the status of binary or analog sensors and three output ports that can control the magnitude and polarity of a DC voltage.



The robots also have an infrared transceiver port that is used for downloading programs to the robots. The IR port can be used for general-purpose communications either between robots or between a robot and a PC.

The RCX robots are programmed using NQC (not quite C), a language similar to C but including many robot-



specific extensions and not including familiar capabilities such as floating point arithmetic, pointers, or arrays. Students in the AI class have used sensors that measure rotation, light levels, and switch settings in order to build robots, which can execute programmed motion and follow a marked path. Additional sensors permit atmospheric measurements including

barometric pressure, temperature, and relative humidity.

The capstone project for the semester will be to design and implement collaborating robots that perform search-and-recovery tasks. One robot will be designed to seek desirable objects and then communicate their locations to another. The cooperating robot must retrieve only the desirable objects. Some of the robots for the search-and-recovery project can be seen on this page.

In addition, the class has focused attention on the problem of automatic object recognition. Students have implemented conventional algorithms for image filtering and edge detection. They have also developed neural network algorithms for object recognition so that they could automatically identify key features, such as faces or eyes, in images. This type of processing is crucial to activities such as airport terminal surveillance that is needed to maintain security. Students exclaim, "I never worked so hard but this stuff is really cool!"

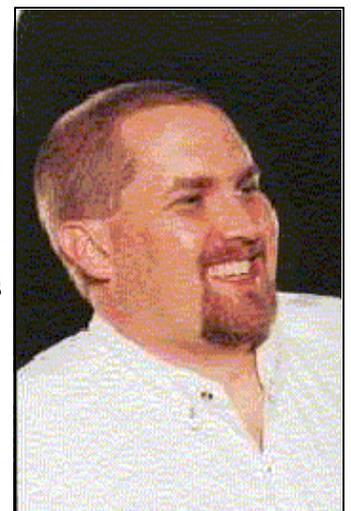
*Student Outcomes Assessment, cont'd page 1*

The department is continually evaluating and revising its guidelines and procedures to evaluate its educational effectiveness but we need your help! Please consider writing us and tell us about your life-after-UNCW experiences. We enjoy hearing from you and need your input. Our goal is to make the computer science program at UNCW one of the best programs in the country. You can also logon to our website to provide us with this information. Please visit: <http://www.uncwil.edu/csc/alumni.htm>.

## Thank You, Kit Cospers

CSC alumna, **Kit Cospers** recently donated a variety of computer hardware, software, manuals, and other miscellaneous supplies to the department. In receiving the gift, Dr. **Ron Vetter** acknowledged how this gift will impact our students. "Students can learn so much more about computer science from direct hands-on experiences. Your gift will directly impact students in this way," Vetter said.

Students will use the equipment and supplies to configure and build their own computer systems. Thank you, Kit for supporting the UNCW Department of Computer Science and its students!





## Welcome New Faculty



Although considered a “new hire,” **Marni Ferner** isn’t completely new to the computer science department – she has been teaching here part-time for two years. Prior to moving to Wilmington in 1999, Mrs. Ferner was the chair of the technology department at Kent Denver School in Colorado. Her responsibilities there included network administration, faculty computer training and support, and curriculum coordination for grades six through twelve. In addition, she taught courses for both the computer science and the mathematics departments. Born and raised in Denver, CO, Mrs. Ferner completed her bachelor’s degree at the University of Colorado in Boulder and then spent five years teaching math and computer science at the Bolles School in Jacksonville, FL. She returned to Denver to complete her master’s degree at the University of Denver. “I love being in the classroom. Helping students learn about computer science is the perfect job for me!”

Instructor **Thomas C. Hudson** is currently completing his Ph.D. in computer science at UNC Chapel Hill. He is a West coast transplant, having grown up in Silicon Valley and received his B.S. in computer science from the University of California at San Diego.



At Chapel Hill, Mr. Hudson worked with groups in distributed computing, virtual reality, and computational science, publishing eight research papers; his dissertation combines these three fields, and they will be the focus of his research at UNC Wilmington. He is interested in collaborative scientific visualization: several scientists working simultaneously to conduct an experiment or analyze a dataset.

### Contact the Department at:

<http://www.uncwil.edu/csc/>

### Alumni and Friends:

Name: \_\_\_\_\_  
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Phone: Home (    ) \_\_\_\_\_ Work (    ) \_\_\_\_\_ E-Mail \_\_\_\_\_

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## Faculty Publications, Presentations, and Awards

Instructor **Thomas C. Hudson** was a coauthor of the paper "VRPN: A Device-Independent, Network-Transparent VR Peripheral System," presented at the ACM Conference on Virtual Reality, Science, and Technology (VRST) 2001, in Banff, Alberta, Canada. Tom was also a coauthor on "Beyond Audio and Video: Multimedia Networking Support for Distributed, Immersive Virtual Environments," presented at EUROMICRO 2001, in Warsaw, Poland.

Drs. **S. Narayan** and **G.A. Tagliarini's**, "Java RMI-Based Approach for Web-Enabling the ArcView GIS RPC Server," was published in Proceedings of the 21st Annual ESRI User Conference, July 9-13, 2001, San Diego, CA.

Mr. **Allen Randall** and **Dr. Gene Tagliarini** traveled to the Sigma Xi conference in Raleigh in November for a poster presentation of their paper Using Feed Forward Neural Networks to Model the Effect of Precipitation on the Water Levels of the Northeast Cape Fear River. Their research was based on using artificial neural networks to

better predict a rise in river and the consequent flooding that accompanies it. The paper was inspired by the catastrophic flooding that occurred during Hurricane Floyd in 1999. Neural networks provide a data-driven modeling tool capable of capturing the relationship between rainfall and river flow which could result in the early forecasting of flooding events.

Ms. **Laurie Patterson** received funding from the College of Arts and Sciences to purchase software skill assessment testing software. The software tests the skill level of students in excel, access, word, and powerpoint.

Dr. **Ron Vetter**, with P. Juell and D. Brekke, had "A Multicast Tree Construction Algorithm for Large Multiparty Conferences," published in the Journal of Telecommunication Systems, Vol. 17, No. 3, July 2001. In addition, Dr. **Vetter** with S. Sologuk and R. Stammen, published "A Collaborative Approach for Creating Curriculum and Instructional Materials," in the Journal of Technology and Teacher Education (JTATE), Vol. 9, No. 2, June 2001, pp. 199-210.

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