News & Notes from Sitterson Hall

Issue Twenty-Two, Fall 1998

Department of Computer Science
The University of North Carolina at Chapel Hill

In this issue

Chairman's corner

Summer is normally peaceful on the UNC-Chapel Hill campus and in the Department (aside from the flurry of second-floor activity as people prepare for SIGGRAPH). This past summer was anything but peaceful. UNC was host to the cast and crew of a movie who took up residence in the parking lot outside Sitterson Hall. The movie, *Patch Adams*, starring Robin Williams, is scheduled to be released this Christmas. Several people from the Department, including me, were extras in the movie. See the article **"UNC Goes to the Movies"** below for details.

As it did two years ago, the fall semester began with a hurricane. Luckily, Hurricane Bonnie caused little damage to the Triangle area, unlike Fran in 1995. Coastal North Carolina took a beating, however.

We welcome a number of new people to Sitterson Hall. **Guido Gerig**, Taylor Grandy professor of computer science and psychiatry, joined us in August. **Bert Dempsey** joined us as an adjunct assistant professor in April. More about Guido and Bert in our **welcome** section below. We also

welcome a large contingent of 39 new graduate students. We welcome back all returning graduate students, and undergraduates in Math Sciences and Applied and Materials Sciences, some of whom are receiving our newsletter for the first time.

We will say good-bye to **Jonathan Marshall**, research assistant professor, in December. Jonathan has joined Visionics Corp. in Jersey City, N.J. **Turner Whitted** has joined Microsoft Research, but remains an adjunct professor with us.

Congratulations to **Bill Mark**, this year's Alumni Fellowship recipient (see **"Research Highlights"** below). This fellowship, given to Ph.D. candidates in their final year of study to allow them to work full time on dissertation research, is supported by generous contributions from alumni and friends. You have been so generous in the past, and we hope that you will continue your support.

We congratulate **Prasun Dewan**, who becomes a full professor on 1 January 1999. Congratulations also to **Dinesh Manocha**, associate professor, winner of UNC's Hettleman Prize for Artistic and Scholarly Achievement.

Two of our faculty are on leave this academic year. **Siddhartha Chatterjee**, assistant professor, is on a research and study assignment this fall, working with collaborators at Duke University on the TUNE project (see **"Research Highlights"** below). **James Coggins**, associate professor, has been granted a Reynolds leave (a competitively-awarded, funded sabbatical) from UNC for the first six months of 1999. He will spend most of that time at the Wolfson Image Analysis Unit of the Department of Medical Biophysics at the University of Manchester, England.

We are extremely grateful to the **Smallwood Foundation** for its generous grant that allows us to begin much-needed renovations to the equipment in our teleclassroom. See **"Research Highlights"** below for more information.

We hope you enjoy our newsletter's new format. We will be adding one additional issue per year (in winter) to provide you with more information more often. Look for it around December or January.

As always, we hope you will visit us if you are in the Chapel Hill area. If you can't visit us in reality, please visit us virtually through our ever-expanding Web pages, for the latest news and information about us.

Stephen F. Weiss

Welcomes and farewells

New appointments

Bert Dempsey, adjunct assistant professor, Ph.D. 1994, Virginia. *Computer-supported cooperative work; computer networks, multimedia communications; digital library systems.*

Bert is an assistant professor in the School of Information and Library Science at UNC-Chapel Hill. An adjunct with us since April, Bert has already been collaborating for some time with Kevin Jeffay, associate professor, Don Smith, research professor, and students in the Multimedia Networking group.

Bert's research interests center on two broad areas: multimedia networking and digital library research. He is currently working on the evaluation of reliable multicast protocols and on multicast support for distributed caching. Bert is also developing tools to aid in the discovery and cataloging of Internet-based information resources.

Guido Gerig, Taylor Grandy professor of computer science and psychiatry, Ph.D. 1987, ETH Zurich, Switzerland. *Image analysis; shape-based object recognition; 3D object representation and quantitative analysis; medical image processing.*

Guido, who has a joint appointment in our Department and in the Department of Psychiatry, joined us in August from ETH Zurich in Switzerland, where he was an assistant professor and the temporary director of the Computer Vision Laboratory. Guido has been a longtime collaborator of Stephen M. Pizer, Kenan professor, and the Medical Image Display and Analysis Group.

Guido is motivated by a number of challenging problems in medical image analysis. One important issue he is researching is the segmentation and modeling of structures extracted from 3D image data and 3D time series obtained from radiology. His current focus is on shape-based 3D object representation and shape analysis of brain structures for studying neurodevelopmental and neurodegenerative changes in the human brain in depression, and in diseases such as schizophrenia, Alzheimer's, and multiple sclerosis.

Visiting researchers

Henri ter Hofte, a postdoctoral researcher, joined us in July for six months. He is working with Prasun Dewan, associate professor, on designing and implementing the Collaboration Bus. He earned his Ph.D. this year in computer science from the University of Twente, the Netherlands.

Brent Seales, a visiting associate professor, joined us in July for a year to work with Henry Fuchs, Federico Gil professor, and others on several projects of the NSF Science and Technology Center for Computer Graphics and Scientific Visualization. He is an associate professor of computer science at the University of Kentucky.

Martin Usoh, a postdoctoral researcher, joined us in July for three months from University College London (University of London), England, where he is a research fellow in the Department of Computer Science. He is conducting a collaborative experiment on virtual reality and the influence of walking methods on the sense of presence.

New students

William Baxter, Chandna Bhatnagar, Steven Boles, Wei-Chao Chen, Zhi Chen, Chris Dwyer, Stephen Ehmann, Ben Elgin, Mark Foskey, Bryan Fricke, Yonatan Fridman, Xiaohu Guan, Mark Harris, Zhu He, Amy Henderson, Sean Ho, Wesley Hunt, Vibhor Jain, Wynee Johnson, Yongjik Kim, Zach Kohn, Naveen Koorakula, Tanner Lovelace, Kok Lim Low, David Marshburn, Gregory Mattes, Chris McCue, Ramkumar Parameswaran, Praveen Patnala, Sharif Razzaque, Stefan Sain, Sriram Sellappa, Wendy Simons, Hui Song, Anand Srinivasan, Martin Styner, Matt Waibel, Zhiwei Xiao, Paul Zimmons.

Median credentials for our new students:

Quantitative GRE:	94th percentile
Verbal GRE:	84th percentile (87th percentile with non-native speakers excluded)
Analytical GRE:	90th percentile
GPA (undergraduate):	3.6/4.0

New staff

Robert Palmer, electronics technician, arrived in August to work with the Microelectronic Systems Laboratory. He earned a B.S. from the Physics and Astronomy Department at UNC in 1997. Prior to joining us he did research for Physics and Astronomy, helping to develop plasma processing equipment.

Herman Towles, senior research associate for hardware graphics projects, joined us in May. He worked previously at Hewlett-Packard's Chapel Hill Graphics Lab and at Division, Ltd.

Philip Winston, research engineer, began working with the GRIDS project in January. He earned a B.S. in Computer Science in 1995 from Harvey Mudd College.

We say thanks and farewell to . . .

Shelley Poovey, systems administrator, who left us in September. Shelley had worked with our Computer Services staff for a year as a full-time member and, prior to that, was a student assistant. She is moving to New York City to pursue her studies of Modern and African dance, Tai Chi, and yoga.

Research highlights

MIDAG begins 25th year

This year, the UNC Medical Image Display and Analysis Group (MIDAG) celebrates 24 years of multidisciplinary research into improving the quality of diagnosis and treatment doctors can provide for their patients via computers and medical images. MIDAG is led by **Stephen M. Pizer**, Kenan professor, and includes more than 90 faculty, staff, and graduate students in 12 departments at UNC, as well as colleagues at Duke University. Collaborators at UNC come from Computer Science, Radiology, Radiation Oncology, Psychiatry, Biomedical Engineering, Biostatistics, Mathematics, Surgery, Dental Radiology, Family Medicine, Ophthalmology, and Pathology.

MIDAG's accomplishments over the years have been in many areas: 3D display, biopsy and laparoscopy via augmented reality, 2D and 3D image registration, shape-based object extraction, contrast enhancement, and display techniques based on models of human vision. The group is currently focusing on the planning and delivery of interventional radiology, surgery, and radiotherapy, as well as the enhancement of diagnostic radiology. The techniques being developed are based on augmented reality and shape-based image analysis in 3D.

MIDAG's support includes a grant from the National Institutes of Health and a number of other sources. For more about MIDAG work, visit **www.cs.unc.edu/Research/Image/MIDAG/.**

1998-99 Alumni Fellow

Bill Mark is the recipient of the eighth annual Department Alumni Fellowship for the 1998-99 academic year. The award is supported by the Alumni Trust Fund and is given to Ph.D. candidates in their final year of study, allowing them to work full time on dissertation research.

Bill is working on his dissertation, "Post-Rendering 3D Image Warping," under the guidance of **Gary Bishop**, associate professor. Conventional real-time 3D graphics systems render each frame from scratch, even though adjacent frames are very similar to each other. Bill is developing an approach in which the graphics system only occasionally renders frames from scratch. Instead, the system generates most frames indirectly, by using image manipulation techniques to extrapolate from the frames that were rendered from scratch. Bill's research promises to accelerate the real-time display of complex 3D scenes, without substantially burdening the application programmer.

TUNE Project

Siddhartha Chatterjee, assistant professor, is on leave this fall at Duke University, to work with collaborators on the project, "TUNE: Mathematical Models, Transformations, and System Support for Memory-Friendly Programming," of which he is a co-principal investigator. The project's principal investigator is **Kishor S. Trivedi**, Duke professor of electrical and computer

engineering and of computer science. Students from both Duke and UNC are on the research team.

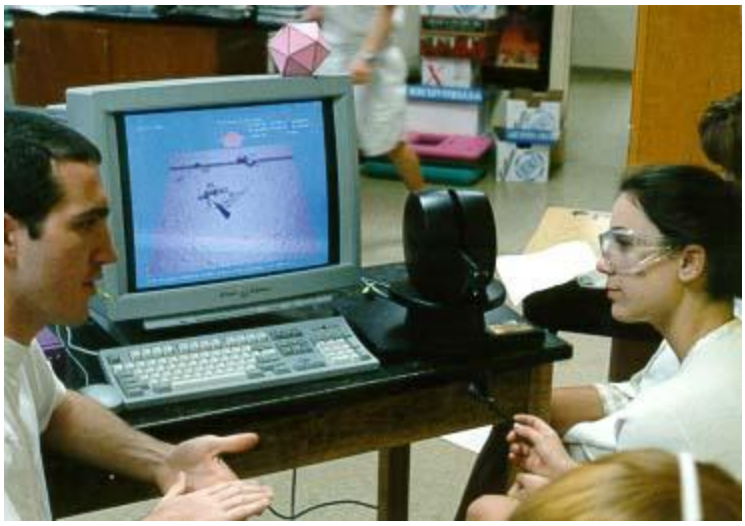
The researchers are working to develop a suite of tools that will aid programmers in developing memory-friendly programs. The problem many programmers face is that the pervasive use of multi-level memory hierarchies in microprocessor-based machines makes the performance of an application primarily determined by its memory hierarchy mapping. Good performance requires memory-friendly programs, in which data structures are carefully arranged, and in which code and/or data use patterns are restructured to improve data locality. Currently, there is a lack of automatic tools for enhancing data locality, forcing many programmers to manually restructure their code, which is difficult and time-consuming if the programs are of significant complexity and/or size. The researchers are looking at a specific class of problems called hierarchical tree-structured problems. They hope their toolkit will enable programmers to restructure their code with significantly less effort.

The project recently received funding from the National Science Foundation and from the Defense Advanced Research Projects Agency, and is also funded by Intel Corporation. For more information, see **www.cs.unc.edu/Research/TUNE/.**

High School Students Try out nanoManipulator

In June, students in an advanced placement biology class at Orange High School in Hillsborough, N.C., had the opportunity to use the nanoManipulator for some hands-on learning. Faculty and graduate students from our Department, and from the Department of Physics and Astronomy and the School of Education, spent four days with the class teaching them how to use the nanoManipulator to see, feel, and modify Adeno virus particles, and evaluating the students' response to the experience. The project was funded by a UNC Chancellor's Award for Instructional Technology.

Researchers were interested in what the students gained from the experience. **Gail Jones**, associate professor in the School of Education, who surveyed the students before and after the visit, reported that the project was successful in capturing students' interest and in motivating them to learn more about science. Her survey results indicated that students made gains in their understanding of scale, microscopy, three-dimensionality, computer technology, and the nature of science processes. Students were very interested in what the technology could be used to accomplish. Many were surprised by how interdisciplinary the research was--combining the work of biologists, computer scientists, and physicists--and reported new insight into the kinds of work these researchers do.



Mike Falvo, a postdoctoral research assistant in the UNC Department of Physics and Astronomy, talks with Megan Collins, Orange High School student, about how the nanoManipulator works. (Photo: Kevin Jeffay).

Smallwood Foundation gives $50,000 for new equipment

The Frances C. and William P. Smallwood Foundation has awarded the Department of Computer Science a $50,000 grant to upgrade the equipment in the Hugh Holman Teleclassroom (room 011). The first phase of the upgrade will equip the room with new cameras and projectors, and a new sound system. Although the classroom is equipped for teleconferencing, the age and deteriorating condition of the equipment has, for some time, made it difficult to use. The new equipment will benefit many. We can continue to participate in the many research group seminars and colloquia that we conduct in collaboration with other universities. We will expand the services we can provide to others by giving students elsewhere the opportunity to take our courses. See **www.cs.unc.edu/Info/Events/News/Smallwood.html** for more details. We'll report on progress in our winter issue.

GRIDS Project

On 18 June, researchers participated in the "Warfighter Visualization Year One Demo" at the Webster Field annex to the Pax River Naval Air Station in St. Mary's, Md. The team--**Gary Bishop** (Ph.D. 1984), associate professor, **Stephen Brumback**, research associate and electrical engineer, **Vernon Chi**, director of the Microelectronic Systems Laboratory, **Kurtis Keller**, research associate and engineer, **Gregory F. Welch** (Ph.D. 1997), research assistant professor, and **Philip Winston**, research engineer--presented a poster on their current work and the fundamental ideas behind their research. They pointed out the deficiencies of currently available head-tracking technologies for augmented-reality displays in an urban battle zone context, and showed how their work could improve this performance to acceptable levels.

Recent Conferences

LCPC '98

The 11th International Workshop on Languages and Compilers for Parallel Computing (LCPC '98) took place at UNC from 7-9 August. Approximately 50 people from eight countries attended

and presented papers. **Charles E. Leiserson** of MIT's Laboratory for Computer Science gave a keynote speech on "Algorithmic Multithreaded Programming in Cilk." Other events included a Friday evening banquet at the Carolina Inn and a Saturday evening reception and demos of graphics, imaging, multimedia networking, and collaborative research in Sitterson Hall.

Siddhartha Chatterjee, assistant professor, was the workshop's general chair and program chair. He and **Jan Prins**, associate professor, served on the program committee. **Linda Houseman**, media and special projects coordinator, handled local arrangements. The Department sponsored the workshop. Springer-Verlag is publishing the proceedings as part of its *Lecture Notes in Computer Science* series. Three of the best papers will appear in a special issue of *ACM Transactions on Programming Languages and Systems,* of which Siddhartha Chatterjee is an associate editor.

SIGGRAPH '98

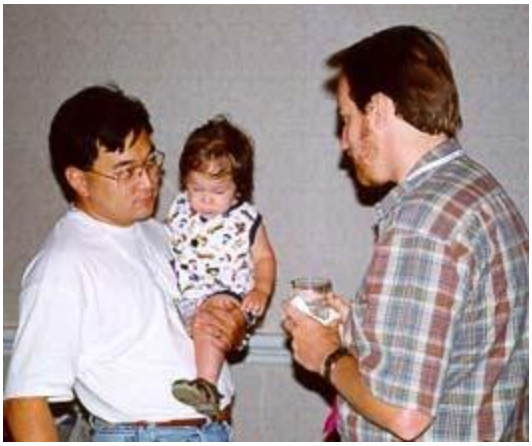
SIGGRAPH celebrated its 25th anniversary this year, in Orlando, Fla., from 19-24 July. As part of the anniversary celebration, SIGGRAPH held an exhibit of the 12 most significant research labs, of which UNC was one. The UNC exhibit featured a series of posters created by **Mary Whitton**, research assistant professor and project manager for virtual environments research, which highlighted our past and current computer graphics work. A portrait gallery honoring 80 pioneers of computer graphics included five current faculty members--**Frederick P. Brooks, Jr.**, Kenan professor, **Nick England**, research professor, **Henry Fuchs**, Federico Gil professor, **Turner Whitted**, adjunct professor, and **Mary Whitton**--along with alumnus **Marc Levoy** (Ph.D. 1989) and former faculty member **Jim Foley**. Nick and Mary exhibited a 1981 vintage Ikonas Graphics System as part of the 25th anniversary retrospective of graphics hardware. They founded Ikonas in 1978.

Gregory F. Welch (Ph.D. 1997), research assistant professor, and graduate students **Jonathan Cohen** (M.S. 1994), **Marc Olano** (Ph.D. 1998), **Paul Rademacher**, and **Ramesh Raskar** presented technical papers (see **"Recent Publications"** below). Course lecturers included **Gary Bishop** (Ph.D. 1984), associate professor, **Henry Fuchs**, **Anselmo Lastra**, research associate professor, **Andrei State**, senior research associate, **Russell M. Taylor, II** (Ph.D. 1994), research assistant professor, and several alumni.

Approximately 100 current and former faculty, staff, and students attended the Graphics Reunion Party on 22 July at the Clarion Plaza Hotel in Orlando.

SIGGRAPH '98 Graphics Reunion Party. (L-R) Phil Amburn (Ph.D. 1994), Sam Black (M.S. 1986), Dana Smith (M.S. 1985), and Eric Grant (Ph.D. 1991). (Photo: Jai Glasgow)

SIGGRAPH '98 Graphics Reunion Party. (L-R) Terry Yoo (Ph.D. 1996), his son Duncan, and Bill Garrett (M.S. 1995). (Photo: Jai Glasgow)



New contracts and grants

James Anderson, associate professor. "Lock-Free and Wait-Free Synchronization in Multi-programmed Systems," National Science Foundation (NSF).

Frederick P. Brooks, Jr. , Kenan professor. "State of the Art in Virtual Reality Research," Office of Naval Research.

Siddhartha Chatterjee, assistant professor. "TUNE: Mathematical Models and Transformations of Memory Friendly Programming," Duke University (Indirect: Defense Advanced Research Projects Agency).

Ming Lin, assistant professor. "University Faculty Research Grant," UNC-Chapel Hill, University Research Council.

Ming Lin and **Stephen F. Weiss**, professor and chairman. "Dynamic Simulation and Navigation for Virtual Environments," U.S. Army Research Office.

Stephen M. Pizer, Kenan professor. "Medical Image Presentation," National Institutes of Health.

David Stotts, associate professor. "Dynamic Reconfiguration of Distributed Systems via Virtual Environment Warping," NSF.

Recent publications

Aliaga, D. G., and A. A. Lastra. "Smooth Transitions in Texture-based Simplification," *Computers & Graphics,* 22(1), 1998, 71-81.

Cohen, J., M. Olano, and D. Manocha. "Appearance-Preserving Simplification," *Proc. ACM SIGGRAPH '98,* Orlando, Fla., 19-24 July 1998, 115-122.

Dally, W. J., and J. W. Poulton. *Digital Systems Engineering,* Cambridge University Press, 1998.

Gregory, A., A. State, M. Lin, D. Manocha, and M. Livingston. "Feature-based Surface Decomposition for Correspondence and Morphing Between Polyhedra," *Proc. Computer Animation '98,* 1998, 64-71.

Keller, K. "Cast 3D Heatsink Design Advantages," *Proc. IEEE ITherm '98,* Seattle, Wash., May 1998, 112-117.

Keller, K., and D. Colucci. "Perception in HMDs. What Really Makes Them all so Terrible?" *Proc. SPIE Aerosense '98, Helmet and Head-Mounted Displays III,* Orlando, Fla., April 1998, 46-53.

Krishnan, S., A. Pattekar, M. Lin, and D. Manocha. "Spherical Shell: A Higher Order Bounding Volume for Fast Proximity Queries," *Proc. Third International Workshop on Algorithmic Foundations of Robotics,* 1998, 122-136.

Lin, M. C., and D. Manocha. "Applied Computational Geometry," *Encyclopedia on Computer Science and Technology,* A. Kent and J. Williams, eds., Marcel-Dekker, 1998, 17-28.

Olano, M., and A. Lastra. "A Shading Language on Graphics Hardware: The PixelFlow Shading System," *Proc. ACM SIGGRAPH '98,* Orlando, Fla., 19-24 July 1998, 159-168.

Rademacher, P., and G. Bishop. "Multiple-Center-of-Projection Images," *Proc. ACM SIGGRAPH '98,* Orlando, Fla., 19-24 July 1998, 199-206.

Rafferty, M. M., D. G. Aliaga, and A. A. Lastra. "3D Image Warping in Architectural Walkthroughs," *Proc. VRAIS '98,* 14-18 March 1998, 228-233.

Raskar, R., G. Welch, M. Cutts, A. Lake, L. Stesin, and H. Fuchs. "The Office of the Future: A Unified Approach to Image-Based Modeling and Spatially Immersive Displays," *Proc. ACM SIGGRAPH '98,* Orlando, Fla., 19-24 July 1998, 179-188.

Wallack, A., I. Emiris, and D. Manocha. "MARS: A Maple/Matlab Resultant-based Solver," *Proc. International Symposium on Symbolic and Algebraic Computation,* 1998, 244-251.

Wallack, A., and D. Manocha. "Robust Algorithms for Object Localization," *International Journal of Computer Vision,* 27(3), 1998, 243-262.

UNC goes to the movies

The UNC campus became a movie set this summer as the cast and crew of *Patch Adams,* a dramatic comedy starring **Robin Williams**, descended on Chapel Hill. Williams plays a doctor who takes an unconventional approach to healing his patients by using humor. His character is based on the life of a real-life doctor, **Hunter D. "Patch" Adams**, who runs the Gesundheit! Institute in Virginia.

Areas all over campus were transformed into the campus of the fictitious Virginia Medical University (the real Adams attended the Medical College of Virginia). Hundreds of locals, many of them from UNC, were hired as extras. The scenes filmed at UNC were set during fall in the early 1970s, so cast members perspired through the hot North Carolina summer wearing polyester, corduroys, and sweaters, most in shades of brown, green, and beige. Many male cast members donned fake sideburns.

Steve Weiss, professor and chairman, spent several days preparing for and filming a scene opposite Williams. He plays a professor, who has to react to Williams defending himself against charges of practicing medicine without a license. He reported that Williams was very funny both on and off camera, and was constantly improvising.

Graduate student **Paul Rademacher** was an extra for a day. He got to meet Williams, talked to him about virtual reality helmets, and told him about our Department. Paul invited him over for a tour, but Williams couldn't fit a visit into his schedule. Secretary **Marie Tarjan** was an extra in the graduation scene, in which Williams moons his fellow graduates while making a speech. She enjoyed participating in the filming and talking to the other extras.

Watch for *Patch Adams* this Christmas and see what people and parts of campus you recognize!

Alumni news

Graduate alumni: honors information requested

For our upcoming external review, we need information from our M.S. and Ph.D. graduates on their significant professional or intellectual contributions (either while here at UNC or since graduating). Please send information about awards, honors, notable publications, leadership roles, etc., to *pubs@cs.unc.edu* by 31 October 1998.

Updating your contact information online

You can now update your contact information online via the UNC General Alumni Association's Web site. If you recently changed your name, address, phone numbers, or business affiliation, visit **alumni.unc.edu/update/default.htm** and fill out the update form. Our Department obtains its alumni mailing list for *News & Notes* from the Alumni Records Department, so it's important to keep your address information up to date. As in the past, if you'd like to send your address changes directly to us, we'd be happy to forward them to Alumni Records.

M.S. and Ph.D. alumni

David Banks (Ph.D. 1993), an assistant professor at Mississippi State, was named a Hearin-Hess Professor of Engineering for 1997-98. The honor is given annually to 10 to 12 faculty in the College of Engineering to recognize them for having established national reputations as engineering scholars. *(banks@cs.msstate.edu)*

Steve Bellovin (Ph.D. 1982) was recently named an AT&T Fellow. *(smb@research.att.com)*

Rodger Blair (M.S. 1969) recently left teaching undergraduates in computer science at the University of Pittsburgh to become a senior consultant with Keane, Inc., a national information technology consulting company. He and his wife, Charlene, are active at Northway Christian Community, a dynamic, cell-based nondenominational church in the North Hills area of Pittsburgh, Pa. Rodger also heads a 12-step ministry for individuals with alcohol, drug, and other serious addiction problems. *(rblair@cs.pitt.edu)*

Michael Capps (M.S. 1996) has accepted a research position with the faculty at the Naval Postgraduate School in Monterey, Calif., where he will work to finish his Ph.D. He recently became engaged to Laura Saurborn, a 1996 UNC graduate. Mike has a recent paper: Capps, M., S. Pekkola, and C. Greenhalgh. "System Aspects of Sharing a Virtual Reality," Workshop Report, *SIGGROUP Bulletin,* 19(2), 1998. *(capps@graphics.lcs.mit.edu)*

Stuart Faulk (Ph.D. 1989), a research associate on the faculty in the Department of Computer and Information Science at the University of Oregon, became director of the NSF's Software Engineering Research Center (SERC) for the Oregon Associated Universities earlier this year. SERC's objective is to foster collaborative research between universities and industry (see **http://hesperus.oboe.com/serc/**). This past year he has worked with state government, industry,

and other computer science departments to develop a state-wide Master of Software Engineering program (see **www.cs.pdx.edu/omse/**). The program begins officially accepting students this fall. *(faulk@cs.uoregon.edu)*

Hala Fauzi (M.S. 1987) changed careers earlier this year from software engineering to technical recruiting. With friends, she recently started a Middle Eastern music and dance band, Sikah, which plays in the San Francisco bay area. For those of you who remember her as Hala Abdalla: she changed her name in 1994 (due to different naming conventions between the USA and Egypt, she had previously used one name here and another in Egypt). *(thehala@usa.net)*

Susan Gauch (Ph.D. 1990) was recently promoted to associate professor with tenure in the Electrical Engineering and Computer Science Department at the University of Kansas. She also received the 1998 Miller Award for Research from the School of Engineering. *(sgauch@ittc.ukans.edu)*

James D. George, Jr. (M.S. 1979) received his M.S. from the Optical Sciences Center of the University of Arizona in December 1997. He is continuing in their Ph.D. program and is currently investigating the quantification of the performance of imaging spectrometers. *(georgej@U.Arizona.edu)*

Stephen Goddard (Ph.D. 1998) has joined the Department of Computer Science and Engineering at the University of Nebraska-Lincoln as an assistant professor. He has a new daughter (see **"Family Matters"**). *(goddard@cse.unl.edu)*

Chenwei Gu (M.S. 1996) was recently promoted to the position of senior business analyst at CapitalOne Financial. *(roger.gu@CapitalOne.com)*

Rich Holloway (Ph.D. 1995) is working at Volumetrics Medical Imaging in Durham, N.C., writing software for volume measurement, rendering, and visualization for the company's 3D ultrasound machine. *(rich.holloway@volumetrics-medical.com)*

Victoria Interrante (Ph.D. 1996) has joined the Computer Science and Engineering Department at the University of Minnesota as an assistant professor. *(interran@cs.umn.edu)*

David Luebke (Ph.D. to be awarded December 1998) has joined the University of Virginia as an assistant professor. He was also recently married (see **"Family Matters"**). *(luebke@cs.virginia.edu)*

Lee R. Nackman (Ph.D. 1982) recently became director of architecture for the area of IBM's software business that produces application development tools, Web application servers, and object middleware. He has a recent paper: "CodeStore and Incremental C++," *Dr. Dobb's Journal*, 22(12), December 1997, 92-95. Lee, his wife Ava, and their children, Joel (6), Samuel (10), and Rachel (13), live in White Plains, N.Y. He would love to hear from old friends. *(lrn@us.ibm.com)*

Manish Pandey (M.S. 1991) received his Ph.D. from Carnegie Mellon in 1997. Last fall, he joined IBM's Austin Research Lab in Austin, Texas, where he works in the Formal Hardware Verification area, developing new tools and techniques to help verify microprocessors and other complex hardware designs developed by the lab and the server groups. *(manish@austin.ibm.com)*

Dale Saville (M.S. 1973) manages technical support call centers for Sykes, an outsourcing company that supports computer hardware and software products for major manufacturers and publishers. Currently, Dale is based in Amsterdam, the Netherlands, where he manages Sykes's international call centers. *(dales@nl.sykes.com)*

Undergraduate Alumni

Tom Adams (B.S. MSci. 1980) published "Total Variance Approach to Software Reliability Estimation," *IEEE Transactions on Software Engineering*, 22(9), September 1996, 687-688. *(TAdamsmar@aol.com)*

Jay Blackburn (B.S. MSci. 1989) is a cofounder of TEKgroup International Inc. **(www.tekgroup.com)**, a new consulting company located in South Florida. The company specializes in corporate Internet consulting, including the development of e-commerce and intranet applications. *(jay@tekgroup.com)*

Jonathan Clark (B.S. MSci. 1987) was promoted in May to project manager of POS Development in Schlumberger's Retail Petroleum Systems Division. He has been a software engineer with Schlumberger in Chesapeake, Va., since 1991. *(clarkjon@chesapeake.rps.slb.com)*

Derrick Cole (B.S. MSci. 1988) joined Glaxo Wellcome as a senior consultant in August. *(dccole@mindspring.com)*

Howard Gross (B.S. MSci. 1984) received an M.S. in Watershed Science from Utah State University in 1995. Since 1994, he has worked at SWCA, Inc. Environmental Consultants in Salt Lake City, Utah, as a project manager and watershed ecologist. *(HGross96@aol.com)*

Cindy Hong (B.S. MSci. 1996) started graduate school this fall in the Department of Visualization Sciences at Texas A&M University in College Station, Texas. *(hong@cs.unc.edu)*

Patrice Schwegman Kerkoulas (B.S. MSci. 1984) received the Association for Information and Image Management (AIIM) Master of Information Technologies Award in April 1997. She has a new son (see **"Family Matters"**). *(Kerkoulas_Patrice/mskcc_PA@mskmail.mskcc.org)*

Sharon Davis Rogan (B.S. MSci. 1982) recently joined Innovative Business Solutions **(www.ibsiws.com)** as a GIS project leader. She and her husband John have a six-year-old daughter, Keegan. The Rogans reside in Steamboat Springs, Colo. *(srogan@steamboat.com)*

John L. Root, III (B.S. MSci. 1994) joined OpenSite Technologies in Durham, N.C., in June as a software engineer. OpenSite **(www.opensite.com)** produces Internet auction software. *(jroot3@worldnet.att.net)*

Michael D. Thomas (B.S. MSci. 1995), a software engineer with IBM's Tivoli division, received an Outstanding Technical Achievement Award in July for leading the Internet technologies integration for Tivoli IT Director, a systems management product. He has worked with Tivoli in Research Triangle Park, N.C., since June 1997. *(mdthomas@mindspring.com)*

Barbara Wilson (B.S. MSci. 1981) is at First Union National Bank, where she sources candidates for jobs in the Development Division of the Information Technology group. The group uses leading technologies including Web delivery, enterprise warehousing, client/server delivery, image technologies, and workflow. *(BARBARA.WILSON@firstunion.com)*

Ann Long Whitmeyer (B.S. MSci. 1984) is a vice president with Bricker & Associates, Inc., a management consulting firm that specializes in operational improvement. She has a Master's degree in Management from Northwestern University's Kellogg School. *(awhitmeyer@brickerinc.com)*

Maria Winslow, former Computer Services student assistant and Math Sciences major, was one of several Triangle area women featured in an article about women who have reached the top of high-tech companies (Park, Andrew, "What Silicon Ceiling?" *The News & Observer*, Raleigh, N.C., 12 July 1998, E1-E4). She runs her own company, Dexxtra, which creates Java training materials, and is the president of the Triangle Java Users Group in Raleigh, N.C. *(maria.winslow@dexxtra.com)*

Nelson Yount (B.S. MSci. 1986) and three others received the Chairman's Innovation Award from NCR in May in recognition of their technical contributions to LifeKeeper FRS Clusters for UNIX and Windows NT. *(nelson.yount@columbiasc.ncr.com)*

Family matters

Geoffrey Alexander (Ph.D. 1995) and **Hillary Lynn Shoaf** married on 25 July 1998 in Chapel Hill, N.C.

Elena Marie Bremer was born on 10 August 1998 in Wettingen, Switzerland, to Andreas Bremer and Pamela Bremer (nee Johnson) (M.S. 1991).

Anna Marie Goddard was born on 26 June 1998 (the day after her father defended his dissertation!) in Chapel Hill, N.C., to Stephen Goddard (Ph.D. 1998) and Anne Goddard. She has a brother, Jake, who is one-and-a-half years old.

Thomas Hudson (M.S. 1997) and **Challe Woosley** married on 9 August 1998 in Durham, N.C.

Kyle Kostas Kerkoulas was born on 18 November 1997 in New York City, N.Y., to Gus Kerkoulas and Patrice Schwegman Kerkoulas (B.S. MSci. 1984).

David Luebke (Ph.D. to be awarded December 1998) and **Emily Jean Larson** married on 7 June 1998 in Charlottesville, Va.

Glenn Odell Mitchell, IV ("Drew") was born on 7 July 1998 in Durham, N.C., to Glenn Mitchell and Mary Abdo Mitchell (B.S. MSci. 1988). He has an older sister, Kristin, who is two years old.

Emma Elizabeth O'Brien was born on 19 June 1998 in Winston-Salem, N.C., to Wesley F. O'Brien (B.S. MSci. 1982) and Kristen R. O'Brien.

Rishabh Ramsisaria was born on 28 February 1998 in Chandigarh, India, to Alok Ramsisaria (M.S. 1991) and Neeta Ramsisaria.

John Finnegan Weber, VI ("Finn") was born on 24 August 1998 in Durham, N.C., to Hans and Katie Weber.

Congratulations to . . .

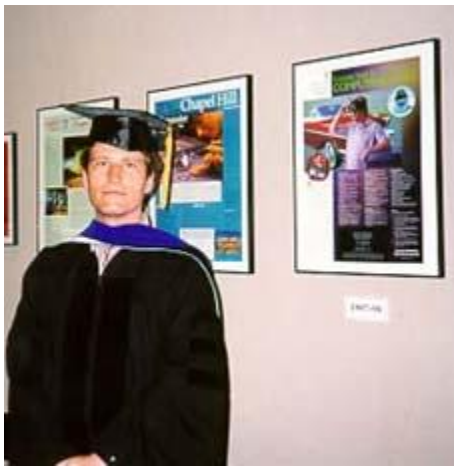
- **Prasun Dewan**, who becomes a full professor on 1 January 1999.
- **Nick England**, research professor, who has been elected Director-at-Large for the ACM SIGGRAPH Executive Committee.
- **Todd Gaul**, television producer director I, who became full-time on 27 July 1998.
- **Dinesh Manocha**, associate professor, winner of UNC's Hettleman Prize for Artistic and Scholarly Achievement.
- **John Poulton**, research professor, and **Jeannie M. Walsh**, lecturer, winners of the 1997-98 Computer Science Students Association teaching award.
- **David Stotts**, associate professor, who becomes associate chair for academics on 1 January 1999.

And to our May and August graduates:
Ph.D. May: David T. Chen, Rickard E. Faith, Alan V. Liu, Thomas M. Olano, Yunshan Zhu
August: Stephen M. Goddard

M.S.
May: Jan M. Borgersen, Dennis G. Brown, Jr., Michele A. Clark*, Matthew D. Cutts*, Aron T. Helser, Brent E. Insko*, Rohit Jain, Pawan Kumar, Luiz A. Lima, David P. Luebke*, Manuel M. de Oliveira Neto*, Amol V. Pattekar, Vassil R. Roussev*, Lev Stesin
August: Gopi Meenakshisundaram*
**On to Ph.D. at UNC-Chapel Hill*

B.S. Mathematical Sciences
May: Tanisha Albert, Joshua Bell, Matthew Blanchard, Blaine Blevins, III, Steven Boles*, Shameka Coleman, Joanna Curlee, Paul Dolan, Andres Echevarria, John Godehn, Lance Good*, Daniel Hines, III, Kristin Hudson, Wendy Hung, David Kennedy, Christopher Klose, Mark Koelsch, Mark Kucera, Jed Lau*, Leon Malahias, Terence McDevitt, Hollis Posey, Jr., David Prevette, Matthew Rafferty, Roger Rice, Ryan Schaeffer, Andrew Snell, Charlie Speight, Ellis Stanley, Daniel Tan, Michele Torian, Or Warshenbrot, Gary Wilhelm.
**With highest honors*

B.S. Applied and Materials Sciences
May: Brian Barnett, Joshua Bizzell, Matthew Lesesky, Charles Pollan, Jason Wicker, Shannon Wu.



May Ph.D. graduate Marc Olano at the Department's graduation ceremony. To his right is our 1997 recruiting poster on which he appeared. (Photo: Claire L. Stone)

Fellowships and Special Assistantships

These students received the following special awards during the 1998-99 academic year:

Brian Blount	Cray Research Fellowship
Matthew Cutts	LINK Fellowship
Ben Elgin	Graduate School, Competitive Merit Assistantship
Carl Eriksen	Intel Fellowship
Mark Harris	Graduate School, Competitive Merit Assistantship
Wynee Johnson	National Physical Sciences Consortium Fellowship
Bill Mark	Department Alumni Fellowship
David McAllister	Integrated Device Technology Fellowship
Ramesh Raskar	LINK Fellowship
Sharif Razzaque	Graduate School, Board of Governors Fellowship
Andrew Thall	LINK Fellowship
Andrew Wilson	National Science Foundation Fellowship

These awards were renewed for the 1998-99 academic year:

Eric Baker	National Physical Sciences Consortium Fellowship (3rd year)
Rui Bastos	Brazilian Government Fellowship (4th year)
Alexandra Bokinsky	National Science Foundation Fellowship (2nd year)
Michele Clark	National Science Foundation Fellowship (3rd year)
Jessica Crawford	Lucent Technologies Fellowship (2nd year)
Mave Houston	Lucent Technologies Grant (2nd year)/Office of Naval Research Graduate Fellowship
Benjamin Lok	National Science Foundation Fellowship (2nd year)
Manuel Oliveira Neto	Brazilian Government Fellowship (4th year)
David Ott	Graduate School, Board of Governors Fellowship (2nd year)
Paul Rademacher	National Science Foundation Fellowship (2nd year)
Anshu Sharma	Graduate School, Board of Governors Fellowship (3rd year)

About News & Notes

***News & Notes* is published during each fall and spring semester.**

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Claire L. Stone, ***stonec@cs.unc.edu***

Keep in touch!
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