Greetings from Sitterson Hall!

Our building is now in its 20th year of service and has performed admirably in the face of heavy use and some recent excitement, and we are gearing up for its expansion.

Last spring space was tight with one of our largest graduate student populations ever. Rooms were reshuffled and repurposed over the summer as significant space was lost in preparation for the building expansion, but we still managed to host two large meetings in the building. This fall torrential rains and a storm drain damaged during construction preparations resulted in a major flood that rendered the bottom floor unusable for the remainder of the semester!

Despite the space crunch, we still graduated 15 Ph.D.'s in 2006 – the largest ever annual Ph.D. production in this department. Moreover, by the end of the year things were looking up, as our bottom floor was restored to better than new, including a welcome update to our large classrooms.

The building also hosted two large meetings last summer. The Workshop on Edge Computing Using New Commodity Architectures (EDGE), organized by Professors Ming Lin and Dinesh Manocha, was held in May with over 200 attendees from academia, industry, and government, including many alumni of the department. The Third International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT) conference, organized in part by Associate Professor Marc Pollefeys, was attended by over 230 people and also brought back many familiar faces. Both conferences were a huge success, thanks to the excellent efforts of our staff, with many distinguished guests speaking at the conferences as well.

Speaking of distinguished, Dinesh Manocha was named the Phi Delta Theta/Matthew Mason Distinguished Professor earlier this fall. The new professorship in the College of Arts and Sciences is the second endowed chair to be funded by a fraternity at UNC. Congratulations, Dinesh!

Finally, although construction on Sitterson South is scheduled to start late spring 2007 next semester, we are still looking for ways to deal with overruns arising out of escalating materials costs. Please consider showing your support by making a donation to the department. Remember that all donations count toward the University’s Carolina First campaign.

Jan F. Prins

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Welcomes and Farewells

NEW FACULTY APPOINTMENTS
Rob Fowler, adjunct professor (Director of High Performance Computing Research, Renaissance Computing Institute), Ph.D., Computer Science, University of Washington.

Chris Healey, adjunct associate professor (associate professor, Computer Science, NC State), Ph.D., Computer Graphics, University of British Columbia.

Hye-Chung (Monica) Kun (Ph.D. 2004), adjunct assistant professor (assistant professor, School of Social Work, UNC-Chapel Hill).

NEW STAFF APPOINTMENTS
Marko Bertogna, short-term research scholar visiting Jim Anderson and Sanjoy Baruah.

Kim Jones, assistant to faculty, who joined the department in September.

Wilson Pires Gaviao Neto, short-term research scholar visiting Associate Professor Marc Pollefeys.

Avneesh Sud (Ph.D. 2006), postdoctoral researcher working with Professor Dinesh Manocha.

THANKS AND FAREWELL TO...
Delphine Bull, assistant to the MIDAG group, who left in May to accept a position with the Program in Molecular Biology and Biotechnology at UNC-Chapel Hill.

Naga Govindaraju (Ph.D. 2004), research assistant professor, who accepted a position with Microsoft Corporation in Washington.

Merkourios Karaliopoulos, postdoctoral researcher working with Adjunct Assistant Professor Maria Papadopouli, who left in October.
Family matters

Steve and Lyn Pizer have a new grandson, born on 26 March 2006 in San Diego. His name is Adrian Zihao Luo, and he, his mother Tonia, father Roger, and sister Carina are all doing well. (pizer@cs.unc.edu)

Spencer Lorenzen was born in Chapel Hill on 16 April 2006 to Peter Lorenzen (Ph.D. 2006) and his wife, Amy. (Peter.Lorenzen@ucsf.edu)

Edwin Ralph Luebke was born on 13 May 2006 to David Luebke (Ph.D. 1998) and his wife, Emily. Edwin joins big brother Owen. (dave@luebke.us)

Chloe Rose Pausch was born on 15 May 2006 to Jai Glasgow Pausch, former outreach coordinator, and her husband, Randy. Chloe joins big brothers Dylan and Logan. (jaipausch@mac.com)

Aaron Block, graduate student, was married to Nicole Ginsberg on 4 June 2006 in Chapel Hill. (block@cs.unc.edu)

Sebastián Daniel Aliaga Barreto was born on 7 June 2006 to Daniel Aliaga (Ph.D. 1999) and his wife, Varinia Barreto. (aliaga@cs.purdue.edu)

Julien Pollefeys was born on 7 June 2006 to Marc Pollefeys, associate professor, and his wife, Monika. (march@cs.unc.edu)

Hannah Jean Seeger was born on 13 July 2006, to Adam Seeger (Ph.D. 2004) and his wife, Sukyung. (seeger@cs.unc.edu)

Ryan Azuma was born in August 2006 to Ronald Azuma (Ph.D. 1995) and his wife, Sun Chang. (azuma@HRL.com)

Adrian Dumitru Ilie, graduate student, was married to Barbara Jane Brewer on 30 September 2006 in Chapel Hill. (adyilie@cs.unc.edu)

Ishansh Kwatra was born on 7 October 2006 to Vivek Kwatra, postdoctoral researcher, and his wife, Aditi. (kwatra@cs.unc.edu)

FAREWELLS, continued...

Jane Stine, desktop systems manager, who left in November.

Karen Thigpen, undergraduate student services manager, who left in July.

David Tuft, research associate working with professors Ming Lin and Dinesh Manocha, who left in October.

Congratulations to...

CHARLIE BAUSERMAN, who has been promoted into the Desktop Systems Manager position.

KATRINA COBLE, who was one of two recipients of the 2006 University Excellence in Management award.

ANSELMO LASTRA, who was promoted to full professor, effective 1 July 2006.

DINESH MANOCHA, who was named Phi Delta Theta/Matthew Mason Distinguished Professor, effective 1 July 2006.

CATHARINE PERRY, accounting manager, on 30 years of service to the state of North Carolina. Catherine assures us that she is not yet ready to retire.


DANIEL STOTTS, who was promoted to full professor, effective 1 July 2006.

RUSSELL TAYLOR, who was promoted to Research Professor, effective 1 July 2006.

GRADUATE STUDENTS


December 2005 M.S. Recipients


May 2006 M.S. Recipients

Manoj Kumar Ampalam, Brian C. Begnaoche, Brian Stewart Eastwood, Xieng Fang, Qiong Han, Kevin M. Ivansen, Sava Januzovic, Vincent Andre Noel, Michael Andrew Noland, Claire Marie O’Shea, Rahul Prasad, Cory W. Quammen, Morten Sommervoll, Joshua V. Stough, Benjamin Gustav Wilde, Tynia C. Yang, Stefan Cosmin Zota.

August 2006 M.S. Recipients

Patrick Jacob Quirk, Rohit R. Saboo, Christopher M. Vanderknyff.

May 2006 Ph.D. Recipients


2006-2007 STUDENT FELLOWSHIPS AND SPECIAL AWARDS

<table>
<thead>
<tr>
<th>Name</th>
<th>Fellowship/Grant</th>
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<tbody>
<tr>
<td>Lavar Askew</td>
<td>Board of Governors Fellowship</td>
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<td>Aaron Block</td>
<td>National Science Foundation Fellowship - Year 3 of 3</td>
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<td>Bjorn Brandenburg</td>
<td>Fulbright Fellowship</td>
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<tr>
<td>Dinesh Manocha</td>
<td>Graduate School Merit Assistantship</td>
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<td>David Feng</td>
<td>Department of Energy - Year 3 of 4</td>
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<td>Ravi Gayle</td>
<td>AGEP Minority Fellowship</td>
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<tr>
<td>Stephen Guy</td>
<td>LINK Foundation Fellowship</td>
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<td>Jerald Jason</td>
<td>NVIDIA Fellowship</td>
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<td>Brandon Lloyd</td>
<td>UNC Royser Dissertation Completion Fellowship</td>
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<tr>
<td>Dorian Miller</td>
<td>Graduate School Merit Assistantship</td>
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<tr>
<td>Rahul Narain</td>
<td>Minority Presence Fellowship</td>
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<tr>
<td>Avery Smith</td>
<td>Paul Hardin Dissertation Completion Fellowship</td>
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<td>Josh Steinhurst</td>
<td>BCB Fellowship in Bioinformatics</td>
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<tr>
<td>Theo Walker</td>
<td>National Science Foundation Fellowship - Year 3 of 3</td>
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<td>Jeremy Wendt</td>
<td>National Science Foundation Fellowship - Year 1 of 3</td>
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<td>Kirstin Williams</td>
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Kok-Lim Low. View Planning for Range Acquisition of Indoor Environments. Advisor: Anselmo Lastra.


August 2006 Recipient
Sang-Uok Kum. Encoding of Multiple Depth Streams. Advisor: Ketan Mayer-Patel.

December 2006 Recipients

Huan, Jun (Luke). Graph-based Pattern Discovery in Protein Structures. Advisors: Jan Prins and Wei Wang


UNDERGRADUATE STUDENTS December 2005
Donald Brett Clippingdale, John Ryan Crouch, Lisa Lang Fowler, Mahmood Ali Qureshi, Tadeau A. Sakoda, Michael Thomas Thorp, Jaime Xavier Vega, Benjamin Allen Wagner

May 2006

August 2006
Daniel Watson.

*With Honors **With Highest Honors

Grants and Patents

NEW GRANTS


Jack Snoeyink (PI). MolProbity Service and Related 3D-Analysis Resources. Duke University Medical Center.


Henry Fuchs (PI), Marc Pollefeys (Co-PI) and Greg Welch (Co-PI). Transportable Computing Clusters for Real World Acquisition, Display, and Immersive Training Office of Naval Research.

Dinesh Manocha (PI) and Ming Lin (Co-PI). Conference Support for Edge Computing Workshop. National Science Foundation.

NEW PATENTS


ALUMNI FELLOWSHIP RECIPIENT

David Borland (M.S. 2003) was the recipient of the Fall 2006 Computer Science Alumni Fellowship. The fellowship is awarded annually to a Ph.D. candidate in his or her final year of study, allowing the student to work full time on dissertation research. Generous contributions by alumni and friends help to make this fellowship possible.

David is pursuing a dissertation under his advisor Russell M. Taylor, collaborating with Dr. John P. Clarke from UNC Radiology. His research involves producing 3D renderings of medical images to aid in diagnosis. 3D viewing is more natural and intuitive than viewing the hundreds of 2D slices generated by MRI and CT scanners. However, occluding objects can make optimal views impossible using standard 3D volume rendering. David’s research is aimed at automatically removing occluding material in the volume without performing segmentation, enabling views that are more useful for radiologists performing diagnosis. His approach is being applied to virtual arthroscopy of joints from MRI data, virtual ureteroscopy from CT data, and knee-fracture visualization from CT data.


The Real-Time Systems Team poses for a picture in Dresden, Germany, where they were attending the 18th Euromicro Conference on Real-Time Systems. Pictured clockwise from far left are: Nathan Fisher, Jim Anderson, Bjoern Brandenburg, John Calandrino, Sanjoy Baruah, Aaron Block and Hennadiy Leontyev.
UrbanScape

Led by Associate Professor Marc Pollefeys, UrbanScape is a three year program funded by the Defense Advanced Research Projects Agency (DARPA) that is aimed at the 3D reconstruction of buildings and landscapes using a camera-equipped vehicle. The University of Kentucky, Science Applications International Corporation (SAIC), and UrbanScan Inc. are partnering with UNC-Chapel Hill on this project.

The research at UNC and Kentucky focuses on the computer vision aspect of the program. There are eight video-cameras mounted on the vehicle, four on each side, which capture videos at 30 frames per second. Herman Towles, senior research associate, with assistance from undergraduate students Brad Talton and Christina Salmi, has been working on the development of the acquisition software that ensures that no data are lost and everything is stored in the right place. A few hours of recording can produce several terabytes of data.

Processing begins by estimating the position and orientation of the vehicle at the time each frame was taken. Pollefeys, along with Greg Welch, research associate professor, Jan-Michael Frahm, postdoctoral research associate, and graduate students Brian Clipp and Sudipta Sinha, combine image measurements with GPS signals and information from inertia sensors to estimate accurately where each image was taken.

Given the camera poses, 3D textured models are then made from the videos. Pollefeys, Frahm, Postdoctoral Research Associate Philippos Mordohai, and graduate students David Gallup and Paul Merrell have developed very fast reconstruction algorithms to generate the models in the pictures. The software can perform all processing steps and reconstruct the scene at a few frames per second. This rate is a lot faster than typical video-based reconstruction.

In July 2006, the team drove around Chapel Hill and collected 3 hours of video, or 2.5 million frames that take 3 terabytes of storage. The goal of the project is a detailed 3D model of most of the UNC campus and downtown Chapel Hill. This is the first time a 3D model of an urban area of this size will have been captured at such a level of detail and realism, and the results should attract much attention. Our 3D models will allow on-line exploration of the campus through virtual 3D exploration tools, the most popular of which is currently GoogleEarth, which provides the ability to visualize 3D computer graphic models. Today, GoogleEarth’s database is largely limited to aerial images and simple untextured buildings, but our project will create models with ground-level realism. We plan to provide our 3D models to the community once our reconstruction process delivers high-quality visual 3D models. We expected to release our 3D models of campus within a year.

More information about the project and more pictures can be found at http://www.cs.unc.edu/Research/urbanscape/
M.S. AND PH.D. ALUMNI

Ronald Azuma (Ph.D. 1995) recently published the following paper:


For the past five years, Ken Bell (M.S. 1972) has been working for Orbital Sciences Corporation in Dulles, Va., where he is responsible for corporate IT services. The company manufactures orbital and suborbital launch vehicles and communication and science satellites.

Bell.Ken@orbital.com

Steven M. Bellovin (Ph.D. 1982) will be presented with the 2007 National Computer Systems Security Award by the National Institute of Standards and Technology (NIST) and the National Security Agency (NSA) in a ceremony during the 22nd Annual Computer Security Applications Conference (ACSAC) in Miami Beach, Fla., on December 11-15, 2006. The prestigious honor, first awarded in 1988, recognizes individuals for scientific or technological breakthroughs, outstanding leadership, highly distinguished authorship or significant long-term contributions in the computer security field. Also, in May 2006, Bellovin was interviewed by Robert Siegel on National Public Radio’s All Things Considered about the National Security Agency’s efforts to analyze the phone call databases turned over to the agency by phone companies. smb@cs.columbia.edu

Kathryn Britton (M.S. 1977) was a member of the first class of the Master of Applied Positive Psychology degree program at the University of Pennsylvania and has just graduated. She is focusing on ways to use positive psychology with groups and individuals. She still works part-time at IBM on ways to increase employee engagement and satisfaction. She has also starting a professional coaching business, Theano Coaching, to help clients work on increasing personal well-being, flow, and meaning in their lives. She specializes in coaching technical people who are wondering whether they are doing what they really want to do with their lives.

britton.kathy@gmail.com

Dr. Michael V. Capps (B.S. 1994, M.S. 1996) is still working as President of Epic Games in Cary, NC. He was recently elected to the Board of Directors of the International Game Developers Association, and is serving as its Treasurer. He also reports that Epic’s game Gears of War won dozens of best of show awards at the annual E3 tradeshow, and was released in November 2006 on the Xbox 360.

Ritu Chadha (Ph.D. 1991) recently published the following papers:


Joel Dunn (M.S. 1995) was named Director of IT and Data Center Services for MCNC in Research Triangle Park in March 2006.

Gopal Gupta (Ph.D. 1992) has assumed the position of Associate Department Head of Computer Science at the University of Texas at Dallas. The CS department at UT Dallas is a rapidly growing department and currently has 54 faculty members. Gopal continues to work in the area of computational logic and programming languages. A paper that he co-authored with his students recently received the best paper award at the European Conference on Web Services. His recent publications include:


gupta@ntdallas.edu
Kenny Hoff (M.S. 2001) is working on Playstation 3 graphics at Sony R&D in Foster City, Calif. kehoff@gmail.com

John Keyser (Ph.D. 2000) was recently promoted to Associate Professor with tenure at the Department of Computer Science at Texas A&M University. keyser@cs.tamu.edu

Benjamin Lok (Ph.D. 2002) received a 2006 NSF Career Award, titled “Studying Diversity Issues with Immersive Virtual Humans.” lok@iiste.ufod.edu

Peter Lorenzen (Ph.D. 2006) is working as a postdoctoral researcher at the Center for Imaging of Neurodegenerative Disease at the San Francisco Veterans Medical Center. Peter.Lorenzen@ucsf.edu

After 8 years at the University of Virginia, David Luebke (Ph. D. 1998) has left academia to help form a research group at NVIDIA Corporation. He says they are on the lookout for brilliant interns and full-time researchers! He and his family have moved out to San Jose for a year while the research group bootsstraps, and they plan to return to the east coast afterwards. dunit@davibeke.us

William (Bill) Mark (Ph.D. 1999) has been named assistant professor at the University of Texas at Austin. He was also awarded an NSF CAREER award, titled “A systems approach to real-time graphics on single-chip highly-programmable hardware,” in February 2006. billmark@billmark.com

Vince Noel (M.S. 2006) works for Google in New York City.

Michael Noland (M.S. 2006) works for Emergent Game Technologies in Chapel Hill.


Chris Schleter (M.S. 1981) finished with the 2006 Winter Olympic Games in Torino, Italy, in April 2006 and has moved to St. George, Utah, where he is currently playing a lot of golf and just enjoying the views! Chris will be going to Beijing several times in the next couple of years to prepare the baseball and softball result systems for the 2008 Summer Olympics, and then will be moving to Vancouver, BC, in September, 2007, to be the Onsite Project Manager for Swiss Timing for the 2010 Winter Olympics. He will return to Utah in 2010 and says he doesn’t know for sure what will happen then. sprtria@ic.netcom.com

Yen-Ping Shan (Ph.D. 1990), who moved to Ohio in January 2006, is currently the CIO and SVP of Engineering & Development at Reynolds & Reynolds and Chairman of Reynolds China. He reports that the company recently sold for $2.8B and is representing a 50% share price increase from a year ago when he joined the company. ypsian@bizwhoi.rr.com

Joshua Steinhurst (Ph.D. 2006) is a visiting instructor of computer science for this academic year at St. Mary’s College of Maryland. jsteinhu@cs.unc.edu

Ray Van Dyke (M.S. 1989) coordinated and lead a delegation to China to speak with officials and companies about intellectual property enforcement. He continues as DC Chapter Chair of the Licensing Executives Society, and has spoken at various conferences over the last year on intellectual property, trade and nanotechnology issues. He was recently interviewed on CNBC on the Blackberry controversy (about which he wrote a song available on the Internet), and is speaking at an Intellectual Property Summit in Malaysia later this year. He continues teaching technology law in the Engineering Department of Southern Methodist University, and taught international trade law at American University. vandyke@aim.org

Amitabh Varshney (Ph.D. 1994) was promoted to full professor in the Department of Computer Science at the University of Maryland, College Park. varshney@cs.umd.edu

UNDERGRADUATE ALUMNI

Aaron R. Fulkerson (B.S. 2004) co-founded MindTouch, Inc., with his business partner, Steve Bjorg, in 2004, based on an idea they began developing while Fulkerson was still attending UNC. MindTouch, Inc., a vendor of business wiki solutions for small and medium businesses, large enterprises and Web communities, has been featured in many local and regional publications, including the NY Times, Wall Street Journal, Information Week and C|Net. In September the company launched their flagship product, the DekiBox, at DemoFall 2006 in San Diego, Calif. aaron@MindTouch.com

Phil Herold (B.S.M.Sci. 1981) has recently gone full-time with a software company that he co-founded in early 2005. The company is called PocketScience (www.pocketscience.biz), and is located in RTP. His title is Vice President and Chief Technology Officer, which he says simply means that he can give himself pretty much any title he wants. He says that PocketScience will soon be releasing a one-of-a-kind reference application for desktop and PDAs dealing with the diagnosis and treatment of osteopathic dysfunctions. Longer term, the company is working on a state of the art electronic medical records system targeted at individual, group and hospital-based clinics. Phil also reports that he recently completed the Council for Entrepreneurial Development (CED) FastTrac class, and that he had four articles published in Java Developer’s Journal in 2005 concerning Java desktop application development: (java.sys-con.com/author/ herold.htm) phil.herold@pocketscience.biz

Courtney McCarthy (B.S.M.Sci. 2002) is a Senior Certified Consultant with IBM’s Strategy and Architecture group. In April 2006, she authored a whitepaper titled, “Demand-driven IT service management through enterprise resource planning for IT,” which can be found on the IBM website (www-1.ibm.com/services/us/ indecwss/whitepaper/ince/a1024180t.txtc r=a1000449). In other news, Courtney is engaged to John Ramey, and will marry him in Chapel Hill on New Year’s Eve. courtneym77@hotmail.com

Michael W. Trinh (B.S. 2002) is an attorney working as an associate at Orrick, Herrington & Sutcliffe LLP in Menlo Park, Calif. He specializes in software intellectual property litigation. Mike also represents persons detained in Guantanamo Bay Naval Base, Cuba, and has written several amicus briefs on constitutional law issues before the U.S. Supreme Court. mtrinhb@orrick.com

Jaime Vega (B.S. 2005) works as a software engineer at Transoft International, Inc., in Cary, N.C. xavier.vega@transoftinc.com
The sculpture pictured on the right, which hangs above the entrance to the Institute for Computing, Information and Cognitive Systems/Computing Science at the University of British Columbia, was designed and built by Professor Jack Snoeyink, who was a member of the UBC Department of Computer Science from 1991-1999, prior to joining the faculty at UNC-Chapel Hill. The sculpture represents his research result on the number of distinct motions needed to assemble collections of simple geometric objects. The sculpture is made from 30 identical aluminum tubes, grouped and colored as five twisted tetrahedra. It has the symmetries of a dodecahedron – from different views you can see two-fold, three-fold, and five-fold symmetries.

Left: Tim Quigg, associate chair of administration and finance, visited UBC and Jack’s sculpture in July 2006. Jack will be designing and building a new sculpture for the Sitterson lobby at some point in the future. (pictures taken by Lawrie Robertson, University of Washington)