With the global economy struggling, the financial industry reeling, and the job market in peril, all 17 graduating seniors in Computing Sciences are reporting success as they take the next step into their futures. Ten students are starting their careers immediately, often at companies where they held summer internships. They are taking high tech positions at Lockheed Martin, Banc of America Securities, JPMorgan Chase, MITRE, Premier Global Services, Aspect Consulting, and others.

Jonathan Bruno will be working on software systems for Banc of America Securities, Armin Mobassari will be a systems engineer for MITRE, and Andrew Chickadel will serve as a technology analyst for JPMorgan Chase, while John McCoey, Joseph Charpentier and Joseph Bruno will have positions with Lockheed Martin. At least five students, including Patrick Cesarz, Elliot Whaley, Kory Kirk, Dan Priece and John McCoey are pursuing graduate degrees. A popular choice among our graduates is to continue their studies in Villanova’s five-year BS/MS program in Computer Science or Software Engineering.

Others will be giving back to the community before entering a technology career.

Richard Banister will teach English to children in Japan and Xavier Halloran will build homes for Habitat for Humanity.

Several students actively interviewing with companies in their chosen field are finding no shortage of opportunities as they seek the perfect fit from among the many opportunities. The job market continues to be very positive for our graduates and others seeking a career in computing and technology.

DEPARTMENT AWARDED $600,000 NSF SCHOLARSHIP GRANT

The Department of Computing Sciences has been awarded a $600,000 scholarship grant from the NSF’s Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program. This NSF program has a Congressional mandate to support undergraduate educational initiatives to increase the quality, quantity, and diversity of STEM majors. The department grant will support the Villanova Computing Scholars (ViCS) community.

Current and incoming Computer Science majors in ViCS will be eligible to receive up to $8,000 in financial aid per year over the next four years, and will participate in a learning community advised by faculty members from the Department's Center of Excellence in Enterprise Technology (CEET).

The award is one of 85 new S-STEM awards made by NSF this year nationally, across all STEM disciplines. These awards are a result of the evaluation of 277 proposals submitted in August 2008.

Students interested in applying for the scholarship should visit the online application at http://csc.villanova.edu/vics.
STUDENTS EXPLORE SCIENCE AND PRACTICE OF GAME DESIGN

Students from eleven different majors are learning the science, theory and practice of video game design in Villanova’s new “Computer Game Development” course, taught by Dr. Tom Way. In addition to lectures and reading assignments, students work in teams to develop a number of high quality computer games using professional design tools and techniques.

The multi-disciplinary nature of the course is very challenging, including a 9-day prototype design challenge, two phases of game design and improvement, interactive game testing labs, and individualized assignments that are customised to each student’s major. The course is being taught simultaneously with a course at The College of New Jersey (TCNJ), with students finding ways to collaborate on cross-institution game projects via frequent videoconferences and a shared wiki. The course is supported by a CPATH grant from the National Science Foundation with the goal of exploring distributed expertise and collaborative teaching among disciplines and institutions.

This semester, students majoring in Accounting, Comprehensive Science, Computer Science, Computer Engineering, Economics, Electrical Engineering, English, Finance, Marketing, and Psychology are developing games using Game Maker, Torque, Processing, Java, Flash, Scratch, and Photoshop. Villanova student teams develop and refine their own sophisticated games and also collaborate on game projects with students at TCNJ. In lectures, students learn about the theory, science and process of designing computer games and then apply that knowledge to accomplish the significantly challenging technical task of implementing their games.

The course involves intense work at times, but students are enjoying the opportunity to explore interdisciplinary collaboration and the lucrative field of computer game design. The department plans to offer the course again in the future.

CEET AWARDED RESEARCH GRANT FROM DEPARTMENT OF DEFENSE

Villanova’s Center of Excellence in Enterprise Technology (CEET), through efforts by Drs. Frank Klassner and Robert Beck, was recently awarded a research and development subcontract with Colorado Engineering, Inc.

Drs. Vijay Gehlot and Tom Way are technical leads on this effort, which involves designing a system architecture that incorporates participatory and asset-based community development methodologies in a “Systems Thinking” project called SHAPE (Stakeholder Asset-based Planning Environment). This is a two-year US DoD SBIR Phase II subcontract to Villanova valued at $225,000.

The key objective of the SHAPE system is to evolve an existing open-source distributed processing SOA (Service Oriented Architecture) into an integration platform for dynamic information interchange on heterogeneous systems.

In addition to faculty research, the project provides financial support as well as research and education opportunities for Computing Sciences students.

GREEN COMPUTING TALK BENEFITS SYMPOSIUM ENVIRONMENT

Thanks to a talk by recent Villanova Computing Sciences graduate Mujtaba Talebi (MSCS ’08), attendees at the 40th ACM Technical Symposium on Computer Science Education (SIGCSE 2009) were reminded of the importance of adopting Green Computing technologies and approaches. Talebi presented his paper, “Methods, Metrics and Motivation for a Green Computer Science Program,” which he co-authored with Dr. Tom Way, in a regular session on Departmental Issues.

In his talk, Talebi presented the results of his research into Green Computing, along with experimental results and a variety of concrete tips and ideas on creating a more environmentally-friendly academic department, to an exceptionally enthusiastic and receptive audience.

The following day, at the concluding symposium luncheon, keynote speaker Gregory Abowd modified some of his talk to incorporate the ideas that Talebi had put forth in his earlier paper presentation. Abowd’s address entitled “Make IT Matter: How Computing Can Make a Difference” focused on how information technologies that are “woven into our everyday lives can address significant problems in the delivery of health care for vulnerable populations,” including helping people with various physical and developmental disabilities. Abowd amended his talk to also emphasize how important it is to employ environmentally-sound approaches to computing, and mentioned the impact that Talebi’s talk had on him.
MESSAGE FROM THE CHAIR

What do you need to know to succeed in the Knowledge Society? The recent NSF-sponsored workshop at Villanova answered the question: database concepts especially for areas that are drowning in data, network models to understand social network analysis and more practically the role of Facebook in our lives, and the social and political consequences of expanding computer systems. The keynote speaker, Candice Hoke from Cleveland State, focused on the decisions about sophisticated voting systems that need to be made by ordinary people who serve on election commissions and at polling sites.

An earlier workshop, which our Center of Excellence in Enterprise Technology sponsored, addressed the multifaceted area of wireless technology in healthcare. The attendees created a list of almost 40 different groups that had some stake in the discussions and system development. They form a complex “social” network that deals with massive databases; any decisions coming from this network have long-range social and political consequences.

AFTER THE JOB SEARCH, BEFORE THE MORTGAGE

As you’ve read elsewhere in this issue of our department Newsletter, computing careers remain one of the few bright spots in today’s economy. This column regularly shines the spotlight on one of our illustrious alumni/ae. This time we report on Colleen McInerney (BSCS, ’08), who writes:

After graduating from Villanova in May 2008, I had planned to move back home and work in the Philadelphia area, but then I was presented with the opportunity to work in Washington, DC. Although I was hesitant at first, I thought it would be a great experience. I started work with CareFirst BlueCross BlueShield in August as an Application Integration Specialist. In the beginning I did documentation and became more familiar with the Software Development Lifecycle as well as the business world. Little by little I was given more responsibility in software development and testing. Within the next year I plan to be DBA (database administrator) certified.

Villanova provided me with a great foundation for a fruitful career with computers and beyond.

BITS & BYTES

We always enjoy hearing from our graduates. Recently, several of our recent female grads filled us in on their careers:

Karla Castro-Granja ’05 is a systems programmer at University of the Sciences in Philadelphia. She has acted as the lead as well as a team member in the implementation of new software on campus including Astra Schedule, Sedona, and Maintenance Direct, and systems administration.

Lindsay Matteo ’07 currently works at Lockheed Martin, Information Systems & Global Services - Global Security Solutions on the IDMO / Symphony Program. As a Software Engineer, Lindsay has gained invaluable experience in every stage of the software development cycle. She began her Masters in Computer Science degree in Fall 2008

Amy Roberge ’08 is currently living outside of Boston in Brighton, MA and is working for Cisco Systems in Boxborough, MA. She reports that “My title at Cisco is ‘Software Engineer’, but my responsibilities mainly revolve around working with customers” and that she misses Villanova.

Kallie Nordengren ’06 has attained the position of Senior Software Systems Engineer for the MITRE Corporation. She works as a software consultant on multiple projects with teams of people across the United States.
In 1972, you’d probably spend your free time with friends at the arcade in the student center playing PONG. You’re more likely now to spend that same free time with friends on a quest inside the World of Warcraft, 2009’s hottest MMORPG (that’s “Massively Multi-player Online Role Playing Game”). Since the black and white days of Pong, computer scientists have been having fun with computer games, but they’ve accidentally been picking up valuable lessons as software engineers, and also as former kindergarteners. Indeed, if modern day philosopher Robert Fulghum was in Villanova’s first ever Computer Game Development this semester, he might pen something like:

All I really need to know I learned from programming computer games

- Play well with others - game development is a team sport, and so is playing many modern computer games. Being part of a team is how games are built and played. It is also how life is best lived.

- All subjects have value - To do the job, game developers need to know about all sorts of subjects, from math, physics, literature and history to writing, philosophy, art and engineering. No subject is unimportant. Same goes for our fellow citizens.

- Work hard, play hard - Creating computer games is hard work, and when “crunch time” comes, you’ll work harder than you thought you could. So, you’ll need to work just as hard at having fun, for as with life, so too with game development is balance important.

- Fun isn’t always easy - You’d think creating computer games would be easy, it is so fun. Yet, one of the most difficult software engineering jobs is that of game developer. Your program doesn’t just have to work, it must be easy to use, engaging, and most of all, fun. We computer scientists undertake game design not because it is easy, but because it is hard.

Of course, these are just a few of the things computer games can teach us, and Prof. James Paul Gee of Arizona State University has been studying the topic for years. He recognized the unique role that games play in learning, like constant challenge that’s not overwhelming, just-in-time learning where facts come with context, and the development of problem solving skills. Sounds like the perfect way to learn.

Because games are fun and don’t look like what people think of as “learning,” it is easy to dismiss their ability to engage and immerse a student’s mind, says Gee. If true, perhaps computer games are the next killer app for the classroom, and the next time you’re fighting monsters in Azeroth, you can rightly remind your roommate that actually, you are studying, thank you very much.