That was the appropriate theme at the recent Consortium for Computing Sciences in Colleges’ (CCSC) Eastern Conference, since it took place October 30 and 31, 2009. Hosted at Villanova, most conference events took place at the Connelly Center. Besides the 160 conference attendees, 72 students in 24 teams competed in a programming contest held at the Mendel Science Center. The Eastern Region encompasses schools from New York State to Virginia, but presenters and attendees came as far away as San Diego, South Carolina, Georgia and Canterbury, U.K.

As you can see on the conference website, (http://ccsce09.villanova.edu), department members played key organizational roles, including Dr. Goelman (co-chair), Dr. Gehlot (registration), Dr. Way (local arrangements), Prof. Nadi (programming contest), Dr. Klassner (vendors) and Dr. Joyce (webmaster). Student Vicki Suwardiman was co-webmaster; former faculty member Dr. John Lewis was co-chair; adjunct faculty member Dr. Paula Matuszek was co-local arrangements honcho; and alumnus Dr. Pete DePasquale was papers chair.

Villanovans participated in virtually every aspect of the meeting. Dr. Way was the keynote entertainer at the conference banquet, at which, as a magician, he demonstrated “The Magic of Computer Science.” You can see him illustrate the “divide and conquer” approach to algorithms (above right), by sawing a colleague in half. Dr. Goelman, wearing traditional Groucho glasses (left) introduced Dr. Way. In the poster presentations, Professors Najib Nadi and Barbara Zimmerman presented their faculty poster, as did Dr. DePasquale. Graduate students presenting posters were: Sridhara Potluri; Siva Kumar Inguva and Vishwa Kishore Mannem; and Bharath Nadella. And Prof. Zimmerman offered a post-conference workshop on Fast Forward Classes. Also attending were: Dr. Beck, Dr. Levitin, Prof. Helwig, Prof. Bercich and Dr. Papalaskari. Many were involved in reviewing papers, judging posters and the programming contest, and preparing the award certificates.

Villanova teams had success in the programming contest (described elsewhere in this newsletter), and the graduate student poster award went to Villanova graduate students Inguva and Mannem.

As a result of this meeting, friends and colleagues returned to their home institutions more impressed than ever by our department, campus and students.

One of the posters from the Senior Projects class asks “Where Are the Girls?” Our answer is that they are becoming Technical Women. (Check out the YouTube video of the same name.) To help achieve this goal, three of our undergraduates participated in the Grace Hopper Celebration of Women in Computing at the beginning of October in Tucson, Arizona. Victoria Suwardiman connected strongly with presenters in the session “Women Researching Women – Gateways to Technology-Enabled Socio-Economic Development.” She is looking for ways to weave her skills as a Technical Woman with her study of sociology. Kristen O’Leary and Bianca Isidro chatted with representatives from Microsoft, Google and Intel about career paths in computing. They also heard the career path stories of the chief technology officers at Lockheed, Facebook, Intuit, Amazon, and Xerox. Other sessions dealt with the practice of systems development, security policy, and network analysis.

The students’ travel was supported by funds from the Villanova Computing Scholars program, and in Victoria’s case, a supplemental scholarship from the conference itself. This scholarship opened several paths to interacting with other scholarship winners. The students were accompanied by Dr. Robert Beck and Dr. Mirela Damian. The Celebration involved about 1600 attendees, mostly women and over half undergraduate and graduate students.
COMPUTING SCIENCES NEWSLETTER

COMPUTER SCIENCE MAJORS VIRTUALIZING VATICAN

Never before has the world had a view of Rome’s great basilicas like they do now, thanks to contributions by Computer Science majors on this year’s Vatican Internship team. Tom Carpenter ‘11 and Greg Doerfler ‘11 (both shown at right in Assisi) interned at the Vatican’s Internet Office in the Fall 2009 semester, and Cory Knoebler ‘11 interned in the Spring 2009 semester.

All three students worked with Dr. Frank Klassner and students and faculty of the Villanova Communication department to collect over three thousand digital photographs to create a virtual reality tour of the Basilica of St. John Lateran. The Basilica is the oldest of the four papal basilicas in Rome, and is the Pope’s cathedral as Bishop of Rome. The tour website was launched on Nov. 9th, the feast of the Basilica’s dedication 1685 years ago, and is located at www.vatican.va/various/basiliche/san_giovanni/vr_tour/index-en.html.

This tour is the second in a series of tours that Villanova Computer Science and Communication students will produce for the Vatican. The first was the tour of the Basilica of St. Paul Outside the Walls, launched in May 2009. Later tours will depict the Sistine Chapel, St. Peter’s Basilica, and the Basilica of St. Mary Major.

One of the highlights for this year’s student team was spending 5 nights in the Sistine Chapel to gather several thousand photos for the chapel’s tour.

AFTER THE JOB SEARCH, BEFORE THE MORTGAGE

As you’ve read elsewhere in this issue of our department Newsletter, computing careers remain a bright spot in today’s economy. This column regularly shines the spotlight on one of our illustrious alumni/ae. This time we report on Allison LeBlanc (BSCS, 2008), who writes:

I currently work at Hughes Network Systems, a company headquartered in Germantown, Maryland, which is the world’s leading provider of broadband satellite services, networks, and products. Since beginning my career at HNS in August, I have worked as a developer of software products and technologies which leverage benefits across the company. I work on a small team of other software engineers to support product lines which reduce company costs and to rapidly respond to the changing market requirements of internal engineering teams within the company. In a broad sense, it is my job to write software which enforces correct software engineering life cycle procedures, streamlining development efforts and optimizing resources.

One of the projects I work on is a web-based document management repository, and a file versioning tool for use by HNS software engineering teams to manage the lifecycle of their documents. The project has given me hands-on experience with web technologies such as Ajax and the Java Spring Framework.

I also have been able to work on other stages of the software lifecycle, such as writing requirements, testing, and code inspection. In the future, I will be provide internal training seminars for the deployed products. I feel fortunate to work in a multitude of software engineering areas, and for a company that is so successful and that fosters such cutting edge and creative thinking.

PROGRAMMING TEAMS COMPILE ANOTHER OUTSTANDING SEASON

On November 7th, two teams of computer science majors participated in the Association for Computing Machinery Mid-Atlantic Regional Programming Contest at Wilkes University. During the competition, teams are given five hours to solve as many of the eight challenging programming problems as possible. The “We’ll Do It Live” team, consisting of AJ Palkovic, Kory Kirk, and Casey Burkhardt, placed 2nd of 24 teams at the local site and 11th of 151 teams ranging geographically from North Carolina to northeastern Pennsylvania. Team “Villanova White”, with Kristin Raudonis, Tim Vincent, and Taylor Clifton, placed 7th on site and 44th regionally.

This outstanding performance comes just one week after the teams participated in the CCSC programming competition held at Villanova. Palkovic, Burkhardt, and junior Carmen Nigro took first place, and Raudonis and Clifton placed 6th of 24 participating teams.

“I’m impressed by the amount of dedication that these students have,” said Dr. Frank Klassner, the teams’ faculty adviser for the past 12 years. “There’s nothing like success to breed success, and the perseverance of the senior team members is clearly rubbing off on the underclassmen.”

“Even though I’ve only been in two competitions, being on the team is a great experience for me,” Clifton, a freshman, said.

“The upperclassmen are really supportive, and I’ve already learned a lot from the problems. I can tell that I’m getting better at programming.”

Although the traditional programming contests for this year are completed, during the spring semester, the teams will participate in a long-term competition called “BattleCode”, a strategy-game based programming challenge hosted by MIT.

Results can be found here: http://midatl.radford.edu/docs/scoreboard/
MESSAGE FROM THE CHAIR

We have always had a number of women as graduate students, many of whom have been very successful in their careers. We expect more as the graduate programs expand and diversify under the able leadership of the new Director of Graduate Programs, Dr. Vijay Gehlot. He has been on the job since June, taking over from Dr. Boots Casse, who is now leading two major NSF-funded projects at Villanova. Dr. Gehlot is developing contacts with leaders inside and outside the university with the goal of expanding the tracks in our graduate programs to include computing for health care, expanded offerings in knowledge-based systems such as the semantic web and formal ontologies, and technology management.

Our campaign for more Technical Women has led to us being designated a Pacesetter institution by the National Center for Women in Information Technology (NCWIT). We have also been recognized by NCWIT as one of the top five schools in the country (based on class percentages) for enrolling new female students in computer science. We are continuing our outreach to women and other underrepresented groups in computing. The Villanova Computing Scholars program helps with the $8000 scholarships. The support from alumni for extra student activities, travel to conferences, and connections to the profession is critical. Keep those phone calls, letters, emails, tweets, and gifts coming.

Summertime—and the student research projects flourished. On campus Victoria Suwardiman and Carmen Nigro (a sociology major and computer science minor) tackled areas of social network analysis including modeling, communities that people join and leave, supported by an NSF REU grant. Carmen Nigro and Tarun Kothuri worked with Colored Petri Net models and Drupal, eventually applying these to agent-based computational economics. Off campus, but linked through the wonders of the internet, Kory Kirk participated in the Google Summer of Code, AJ Palkovic worked at NASA JPL, Tim Vincent learned about iPhone app development, and Casey Burkhardt was a technical intern at Google in Silicon Valley.

BITS & BYTES

During the week of May 4th to May 8th, 2009, associate professor of Computing Sciences Dr. Mirela Damian attended a special workshop on geometric graphs organized by Carleton University at the Econiche Conference Center in Ottawa, Canada. Thirty researchers from various universities had been invited to the workshop. Each day the workshop held a few invited talks targeted towards generating discussions on open problems. Then, participants broke into working groups and attacked the open problems. Each day ended with progress reports. The format of the workshop turned to be extremely effective and led to many interesting results, some of which resolved problems that had been open for decades.

Professor Catherine Helwig and her husband Carl Helwig were inducted into The Villanova 1842 Heritage Society, a gift society launched by the Office of University Advancement to honor alumni, parents, and friends who support the University through documented bequests in their wills or other planned gifts. See the computer science web site for scholarships available to incoming computer science students. http://csc.villanova.edu/opportunities/scholarships

Graduate computer science student Nawar Molla presented her recent research results on geometric spanners at the 25th European Workshop on Computational Geometry, held on March 16 – 18 at the Université Libre de Bruxelles, Brussels, Belgium, 2009. Under Dr. Mirela Damian’s guidance, Nawar made substantial progress on a long-standing open problem in computational geometry, asking to determine whether geometric Yao graphs were good approximations of complete Euclidean graphs. Geometric graphs with good spanning properties are important for routing in wireless networks, and Yao graphs in particular can be constructed and updated efficiently in a dynamic environment.

UPE INDUCTS SIX

The Villanova chapter of Upsilon Pi Epsilon conducted its 12th induction ceremony on Friday, September 18, 2009. With faculty, family and friends watching, six undergraduate students holding outstanding academic achievement were inducted into Upsilon Pi Epsilon: Casey J. Burkhardt, Kurt D. Lehmer, Carmen Nigro, Kristin Raudonis, Victoria Suwardiman and Timothy J. Vincent. Congratulations 2009 UPE Inductees! The speaker of the evening was AJ Palkovic, President of Upsilon Pi Epsilon, who shared with the audience his remarkable insight into clean, modular programming. A celebrating reception with light refreshments concluded the evening.
Are you a magician? Famed author and inventor Sir Arthur Clarke formulated three well-known laws during his lifetime that suggest that you are. These insightful axioms happen to sum up the magic of computer science as well. See if you agree.

**Law 1:** “When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.” I can recall sitting in Dr. Chan Park’s “Programming Languages” class in the Fall of 1981. Dr. Park is a brilliant computer scientist and his research and teaching are top notch. In class, in a flurry of chalk dust, he would think up a board full of 1s and 0s that also was a working program. It seemed impossible to me. Magical, really. Invariably, his programs worked as advertised. Until one day, a foolhardy student (I think it might’ve been me) said, “I think that your program is impossible. That second 1 should be a 0.” Dr. Park paused, examined the board, and then, to my utter surprise, changed the second 1 to a 0. He then grinned at us as he said, “Even a monkey sometimes falls out of a tree.” As computer scientists we deal with the impossible all the time. Like Dr. Park, sometimes we are wrong.

**Law 2:** “The only way of discovering the limits of the possible is to venture a little way past them into the impossible.” The Clint Eastwood version of this is “A man’s got to know his limitations.” Dirty Harry would’ve made a lousy programmer, though, because we know the fun really begins once you have purposely ignored your own limitations, and those of the machine, to produce an epic fail. For most people, the fear of failure can be overwhelming and paralytic. For the computer scientist, it is the mistakes, the unexpected and the unknown that we relish because we know when we deal with them we’ll be that much closer to an amazing solution. Magical, really.

**Law 3:** “Any sufficiently advanced technology is indistinguishable from magic.” Clarke definitely knew what he was talking about in what is his best known law. What other machine morphs into whatever its instructions declare? This universal machine of Alan Turing’s invention is, to most, a truly astonishing device. Magical, really. Perhaps it is the appearance of magic that draws each of us to computer science. In fact, I always feel a little pity for those scientists who are not computer scientists, who don’t get to live the magic each and every day like we do. It reminds me of Dr. Barry Gehm of Lyon College, who proposed this corollary: “Any technology distinguishable from magic is insufficiently advanced.” By this or any other measure, computer science surely is magic making us, as computer scientists, the magicians.