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**Connection**

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large. It is also important because alumni are a valuable resource. Especially at a university like Bucknell, alumni play a substantial role as volunteers, helping with university events, admissions, etc.”

Alumni wishing to speak to Shannon can contact the Career Development Center at (570) 577-1238 or can email Shannon at sbradfor@bucknell.edu. Alumni are also encouraged to check the Alumni Career Services website at the following website for more information.

[http://www.departments.bucknell.edu/career\\_dev/alumni/index.shtml](http://www.departments.bucknell.edu/career_dev/alumni/index.shtml)

**The Bucknell Connection**

*Editor: Brienne Terril 2003*

*Staff: Dorothy Cleaver 2003*

*Jason Goelitz 2004*

*Cheryl Lee 2003*

*Tabitha Peck 2005*

*Scott Solomon 2003*

*Erin Zsolcsak 2003*

*Advisor: Jerry Mead*

*(ACS continued from front)*

In her new role Shannon is responsible for providing guidance to alumni who are in search of career advice. “The alumni career services program is not a recruiting or placement role; instead, I am a resource and a facilitator to help alumni learn how to think about career paths, identify immediate and lifelong career goals, evaluate possible careers, make career transitions, develop job search strategies and materials, succeed in the interview process, network effectively, etc.” The program will first focus on alumni who have graduated within the last five years. The second year of the program will expand to those alumni out between six and fifteen years and the third year will encompass those out fifteen plus years. Important and beneficial aspects of alumni career services program include individual career coaching, workshops, and a new alumni career services web site.

Maintaining a relationship with alumni is an important goal to the Career Development Center. “It is important for a university to maintain its relationships with alumni, because they represent the university, impacting its reputation and its brand in the world at

*(ACS continued in column to the left)*

### *Alumni Career Services*

*Brienne Terril 2003*

Bucknell is proud to welcome Shannon Bradford as Assistant Director of Alumni Career Services. As part of the Career Development Center Shannon will be in charge of creating and implementing a career development program for Bucknell alumni.

Shannon holds BA and MA degrees in human communication from Michigan State University. For the past six years, she has been a life, career and business coach and corporate trainer for her own firm Mind Capital. Prior to starting her own business, Shannon worked at Saatchi & Saatchi specializing in customer relationships. Last year Shannon’s first book, *Brain Power*, was published by John Wiley & Sons.

*(ACS continued on the back)*

### *Computer Science Academic Award Winners*

#### *Arts & Sciences*

*BS: Brienne Terril*

*BA: Jessica Kerper &  
Jeffrey Bolle*

#### *Engineering*

*Christopher Harm &  
Molley Campbell*

### *From the Chair*

*Gary Haggard*

Another successful year is winding down. Later this summer we expect to hear that we have received an additional six-year accreditation from both the Accreditation Board for Engineering and Technology (ABET) and the Computing Accreditation Commission. As part of the accreditation process we have added the Technical Writing course as a requirement to the Arts and Sciences BS degree. We feel this to be a very positive step for students who come into this degree program.

Most importantly we have hired Dr. Felipe Perrone, who will join our faculty as a new tenure track Assistant Professor this next Fall. Dr. Perrone comes to us after finishing his Ph.D. at William and Mary University and spending two years involved in the research and administration of the Institute for Security Technology Studies at Dartmouth College. He is bringing new expertise in computing security to our program and will be offering a Linux based course as an elective next year.

Two of our students deserve special mention. Tabitha Peck ‘05 will be involved this summer in the graphics research group at the University of Minnesota as part of the Distributed Mentor Program. Chris Harm ‘03 jointly authored a paper with Dr. Xiannong Meng and will present it at the International Conference on Internet Computing in Las Vegas this June. This trip was partially supported by our alums’ contribution to the department through the Engineering Fund drive.

The next year brings another challenge to try to hire a new faculty member to participate in and help us continue to develop the curriculum area of programming languages.

We all hope your careers are still exciting and full of challenges. Let us know what is going on in your world.

## Short Story (about algorithms?!)

Jason Goelitz 2004

*Ball Bearing Factory #3 has a complex layout with a number of corridors that meet at intersections. Unfortunately, from one intersection it is not possible to see further than the next intersection. The manager, Buster Kresl, has hired you to determine how to place cameras at intersections to monitor every corridor. Buster wants you to figure out the minimum number of cameras necessary. Why is this probably is not feasible. State the algorithm that will approximate the minimum number of cameras needed.*

**That's a question which appeared on an exam in Prof. Guattery's CS311 (Data Structures) course. My response emerged as the following story.**

Hmmm. After thinking for a moment, I turn to Buster. With stooped shoulders and thinning hair, not to mention his rumpled slacks and coffee-stained shirt, Buster has the look of a rundown college bum who never figured out how to clean up his room. Hoping to impress Buster with my massive amount of knowledge, I take a piece of chalk from my pocket. Turning to the wall I begin drawing feverishly while searching for words that are sure to be well outside of Buster's vocabulary. "This looks quite a bit like the Vertex Cover Problem," I say while twirling the chalk in my fingers. "And V-C is NP-C proved by clique." Watching Buster scratching his head in confusion, I gleefully continue. "This means that it is impossible to find a solution to your problem in polynomial time. I'm sorry, but that means we'll have to approximate."

Watching Buster's eyes fall to the floor in consternation and defeat, I can't help but feel pity. "Well," I mumble quietly, "there is another way." His eyes lift from the floor, rising inch by inch as I speak each word. "We can get a pretty good approximation, guaranteed to be within a factor of 2." Stunned to find myself disclosing so much, I find that I can't stop, almost as if I'm being pulled on by fate itself. "So we might even be able to get a really good solution; it's only the worst case that's off from the optimal by a factor of 2."

Pausing for breath, my eyes wander over the peeling plaster and the mil-dewy carpet which surrounds me. A sign above his cheap desk reads "We keep you rolling when everyone else is bowling."

"It's actually simple to solve. First create a graph of the corridors and intersections, like so. Then pick a corridor." As I draw the diagram on the wall, he brightens up visibly. "That one!" he exclaims, his arm shooting forward to indicate the corridor. I reach up and mark both intersections. "OK. Then you choose both adjacent vertices, select them for cameras, and cross off all the corridors which they touch. Now, choose another edge that isn't crossed off and repeat the process." Handing him the chalk, I continue. "Continue until all the edges are crossed off, then put cameras at the selected vertices!"

Ten weeks had passed since I last saw Buster Kresl. This was a visit to check up on his progress with the security system. As I stepped into his office, I stumbled in surprise. Gone was the moldy carpet, gone was the peeling plaster, gone was the dingy desk. In front of me stood Buster, but he was well dressed and well groomed. Behind him stood a beautiful wood desk and under him was a new shag carpet.

"You!" he cried. "you've made me a new man!" Rushing forward to shake my hand, he told me of the transformation which had occurred in his life. "Vertex-Cover - it worked for me!" He shouted in glee. "I'm a new man now! A free man!" With that, he shot out the door, wildly yelling "FREE!" over and over again. And there ends the story of Buster Kresl, manager of ball bearing factory #3.

## New Faculty: Jeff Gum '78

Erin Zsolcsak 2003



Returning to his alma mater to teach this past year, Professor Jeffrey Gum was the first to receive a degree in what eventually became the computer science & engineering program [1978]. Before coming to teach at Bucknell, he did systems engineering for the cellular industry. His academic research interest involves fault-tolerant transparency using real-time operating systems.

Next year Professor Gum will be a visiting professor in the Electrical Engineering Department at rival Lafayette College. Given the right opportunity, a return to industry is also a possibility. In his spare time, Professor Gum likes to fly, having obtained both a pilot's license and an airplane. Asked for advice about the "real" world, Professor Gum stated "Projects, projects, projects!!! Most of our learning and experience comes from doing projects. Get used to them. I thrive on them."



It has been a very exciting year for the students and faculty who call Dana Engineering home. The first present this year was the beautiful Dana/Olin quad that leaves no remnants of its former life as a parking lot. Always willing to one-up themselves, Bucknell's upcoming addition will be of special interest to the engineering inclined portion of the school. Plans have been finalized for the Breakiron Engineering building - a facility that may even make you wish you had more work to do. Named Breakiron after Lauren P. Breakiron '52 for his \$5 million commitment, the building will be a significant enhancement to

Dana Engineering.

The building will be located behind Dana, on the lawn next to the Phi Kappa Psi Fraternity, and house faculty offices, six classrooms, labs, and interactive spaces. Entry to the building will be through every floor of Dana and through the main entrance (pictured) which will face Lambda Chi Alpha. Due to the placement of the facility, another major campus change will appear - the segmentation of Fraternity Road. The connector between Breakiron and Dana will contain an archway for foot traffic to pass through, but that portion of the road will be closed to vehicles.

I had the opportunity to speak about the new facility with Professor Meng, the CS department representative for the building committee. Professor Meng explained that the labs in Dana 350 and 314 will be enlarged and relocated to the new building. When I asked Professor Meng about his favorite feature of the building, he replied, "I think students will really like the Interactive spaces which are similar to the common area in the Dana lobby."

The building will feature one free-form collaborative space on each floor, which students seem to find comfortable as a work environment. Each learning space will be comparably equipped to the Dana classrooms and the entire building will feature wireless Internet access. It is no secret in Lewisburg that Bucknell is always building or bettering the campus in some way.

*A New Building For Engineering*

Scott Solomon 2003