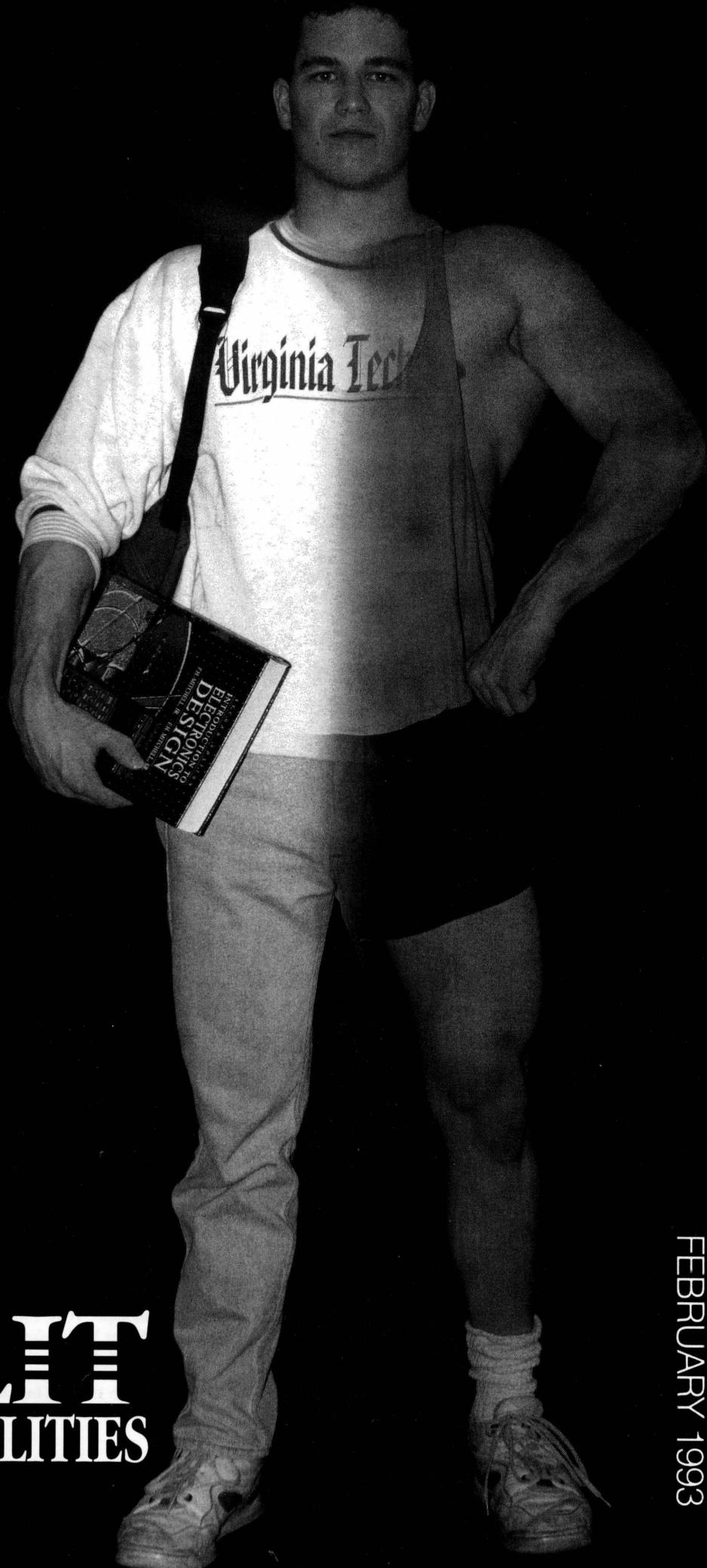


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VIRGINIA TECH
FEBRUARY 1993

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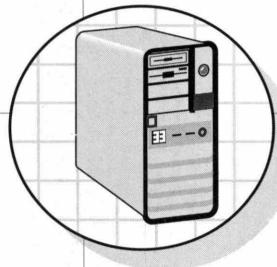
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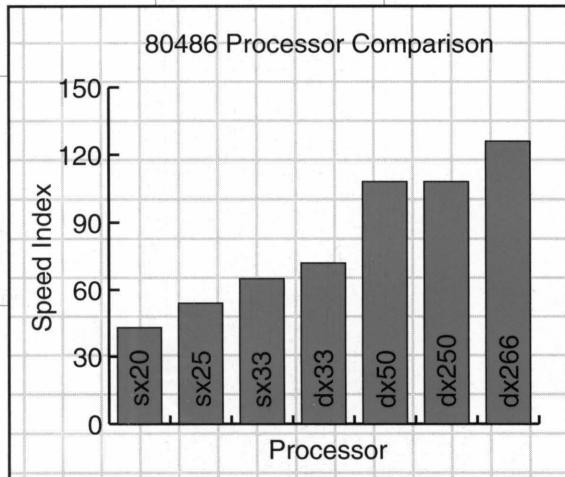
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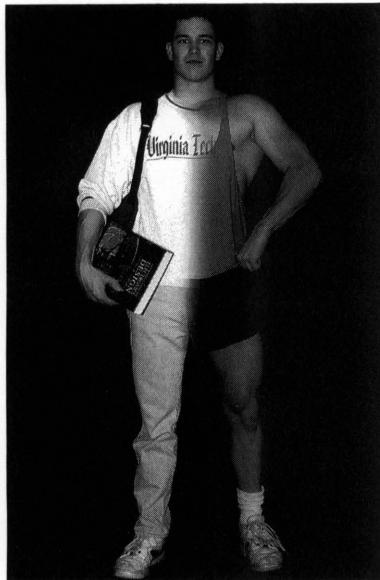
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**ON THE COVER:**

Electrical engineering student/bodybuilder Mark Maleski demonstrates his academic and athletic interests. Photography by Mark Cherbaka.

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Engineers' Forum

VIRGINIA TECH
FEBRUARY 1993

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EDITOR'S PAGE

Breaking the mold

Taped glasses, a pocket protector filled with pens and mechanical pencils, and a desk piled high with books and papers are some of the images many non-technical students have of those in engineering. However, the engineering students highlighted in this issue of the *Engineers' Forum*, shatter any stereotypical images of the "nerd" engineer.

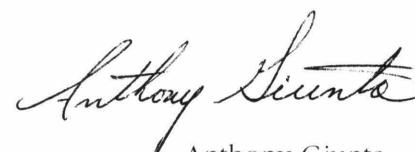
What makes these students special? Are they so brilliant that their classes seem as easy as elementary school, or, are they super-achievers who jump at the chance to join any and all organizations? Although their interests are diverse, what these engineering students have in common is the ability to balance their scholastic demands with involvement in extracurricular activities.

What these engineering students have in common is the ability to balance their scholastic demands with involvement in extracurricular activities.

almost any job hunting senior will confirm that employers are looking for more on a resume than grade point averages and course listings.

With a large, diverse student body at Virginia Tech, there are almost an unlimited number of organizations in which a student can become involved. In addition to the approximately 35 student associations in the College of Engineering, there are a variety of social, service, and athletic activities to be found throughout the university.

Engineering students often grumble about their perceived heavy course workload as compared to that of students outside of engineering. Many times this is used as an excuse to remain uninvolved with other activities. The students featured in this magazine exemplify what can be attained with some personal initiative and a little time management. Further, their accomplishments challenge every engineering student to break free of the familiar "all work, no play" stereotype.



Anthony Giunta
Editor-in-Chief

The stereotypical engineer?

Commentary by Seth Cox

What are engineering students? And what do they do? Well, to some, we are one-sided, technically minded, efficiently compiling robots with computer brains. And in some cases, this may be true. But the vast majority of us are not. Most of us are well-rounded, well at least semi-rounded, hard-working students who are constantly contemplating a change of major. In many cases we eventually obtain well paying jobs, but engineering is not easy. The money we will enjoy will be earned through hard work and dedication to our profession.

As the articles in this magazine illustrate, the extracurricular activities of engineers cover a very diverse area of interests. There are athletic engineers, musically inclined engineers, engineers skilled in journalism, dancing engineers, and even engineers who are poets, like myself, just to name a few. There are also many engineers in the Corps of Cadets who must balance the two disciplines. Many engineers must work to help pay for their education. They may work for the university, or a private business. Some engineers even work or volunteer as firemen, medical technicians, and rescue squad personnel.

These things hold true for all majors, though. So, why are engineers sometimes portrayed as the unsociable students who toil away in a laboratory? Well, I'm not quite sure, because many of us do not fit that image. Many of us struggle with our work on the road to becoming a professional engineer. Also, engineering technology is constantly changing and we must keep up to the minute on new advances. I guess it is due to these facts that engineers are billed as we have been.

Despite the sometimes negative comments made about engineers, we face the same problems as other students. It is not uncommon to find an engineer struggling to balance 'business with pleasure.' We enjoy all the troubles of college life. The work, the little sleep, the tough decisions concerning what parties to go to on weekends, and the search for a mate are but a few of the problems facing engineering students.

This may have sounded like a plea for some respect, and I suppose it is. These words have not been written to appeal to the vanity of some engineers, though it may seem as such. They have been written to reveal the secret that we engineers are just as bad off as everyone else. The economic state of the world being what it is makes the future look a little bleak to us as well. Although there are many who will continue to regard engineering students as computer-brained, unsociable, soon-to-be-rich men and women, hopefully, this issue of the *Engineers' Forum* will show that engineering students are "real" people too. **EF**

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"Before joining New Virginians I felt I didn't know anyone, now wherever I go I see someone I know."

Dancing her way to success

By Jessica Smothers

Virginia Tech has a rigorous curriculum for the engineering student. Nearly every course and credit hour is planned out from freshman registration until graduation. With an average semester load of sev-

enteen credit hours, the engineering student doesn't have a lot of time for non-engineering related activities. Nevertheless, Tech engineers are involved in many campus organizations and activities. One of these students is Christina Richards.

Christina loves performing. During high school she was involved in school musicals and other performances. When she came to Tech, she decided not to give up performing. So, she joined the New Virginians, one of Virginia Tech's many musical groups. Now she juggles the demands and responsibilities of the New Virginians with those of her electrical engineering major.

The New Virginians is a stage group that puts on song-and-dance shows. There are about 80 to 90 members, musicians, and performers. The group frequently travels during the weekends to perform. Since joining the group last year, Christina has performed in Illinois, Kentucky, Minnesota, Tennessee, as well as in Virginia.

Christina enjoys being in the New Virginians; it gives her opportunities to perform in ways that the engineering department could not provide. It has also helped make Tech seem smaller and more personal. "Before joining New Virginians I felt I didn't know anyone, now wherever I go I see someone I know," says Christina. The New Virginians have one-and-a-half hour rehearsals three times a week with extra hours scheduled when getting ready for a performance. Christina says that the performance and rehearsal schedule rarely cause problems with her classes.

In addition to the New Virginians, Christina also belongs to the Kappa Kappa Gamma sorority and lives in the Kappa House. She likes the feeling of closeness and support living there gives her. Both the New Virginians and Kappa Kappa Gamma have opened up opportunities outside of the normal engineering activities. Through these groups Christina has met many people with a variety of interests outside of engineering. **EF**

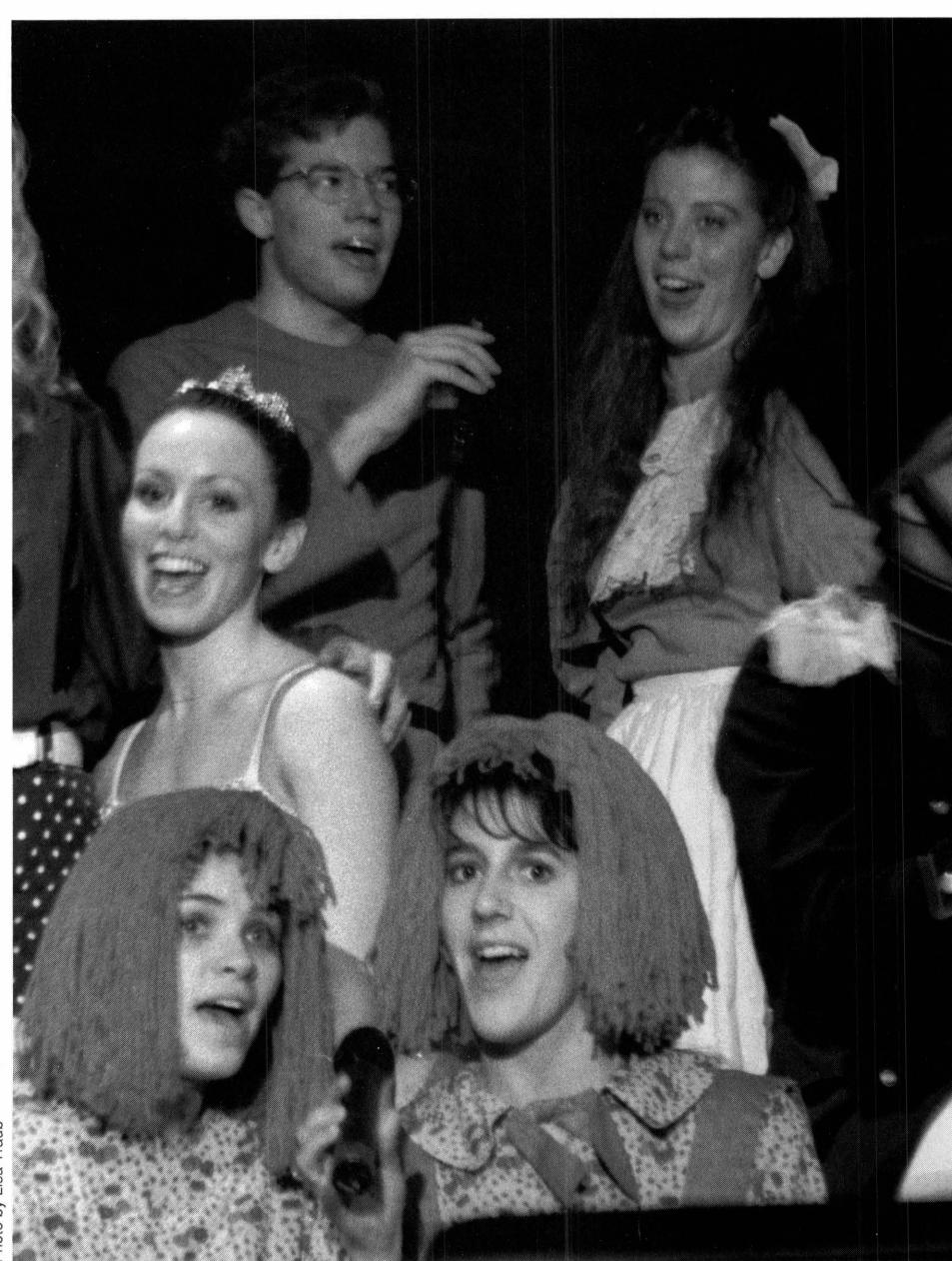


Photo by Lisa Traub

Christina Richards (upper right) in a recent New Virginians performance.

By Mike Reese

There are three basic values which are essential to surviving in an engineering curriculum: creativity, discipline, and intelligence. Mark Cooper and Aaron Snyder not only display these characteristics by their success in class, but also in their extra-curricular activities.

Mark Cooper is an electrical engineer who fills his free time with band practice, organizing and heading technical projects for the International Society for Hybrid Microelectronics (ISHM), and working as a chef in a local restaurant. His good friend, and fellow electrical engineer, Aaron Snyder deals with an equally busy schedule. Aaron drives a bus for the Blacksburg Transit, is co-section leader of the drum section in the Marching Virginians, participates in music department ensembles and is the first vice-president of the professional music fraternity, Delta Omicron. On top of managing his time, his responsibility as treasurer of ISHM is to manage the society's finances.

When first looking at this long list of activities, one may lose the quality in the quantity. Mark and Aaron are the epitome of renaissance men. They exhibit their technical and scientific knowledge through their involvement in ISHM and success in school. Their prowess in the field of science is mirrored by their experience in the band and music in general. For Aaron, choosing between music

MUSICAL



Photo by Mark Cherbaka

ENGINEERS

(Above) Drummer Aaron Snyder at a basketball game in Cassell Coliseum.

and engineering was difficult. "When I first came to Tech I spent many hours in Henderson Hall talking to advisors on which path I should take. It was a very tough decision, and made my beginnings at Tech very difficult," he comments. The compromise was to supplement his engineering degree with a minor in music.

One of the major advantages of being in the band is the seating. Not only do they get great seats for the game, they are placed behind the opposing team. Heckling... has become as much of an art as playing their instruments.

Neither have had regrets about pursuing an engineering degree and say they enjoy their classes, but when asked what is their favorite activity the immediate reply was "the band." Mark gave this reason, "I'm close to my classmates, but my section in the Marching Virginians is like a second family." They pointed out that after spending over one hour every day during the week, and all day on game days, it is inevitable that a close bond forms between band members.

There are also the bus trips. Long hours on the road with eight buses full of college students are bound to result in stories and tradition. Mark plays alto sax and his peers can be identified on the road with the words "group sax" taped in the windows. Another tradition is for the sax section to sing a modified version of the song "Feel Like Makin' Love," which mentions a graduate of this tight group.

Once off the bus, the care-free attitudes are brought onto the field. One of the major advantages of being in the band is the seating. Not only do they get great seats for the game, they are placed behind the opposing team. Heckling the players has become as much of an art as playing their instruments. "The rookies get especially charged up, and the more fired up they get, the louder we yell," joked Aaron. This part of game day is only a small part of their reward.

An audience of fifty to eighty thousand can easily become an emotional expe-

Most engineers are not known for their artistic ability. Mark and Aaron are two engineers who disprove this common misconception.



Photo by Mark Cherbaka

Mark Cooper demonstrates his musical talent.

rience. Said Aaron, "When you're standing on the fifty-yard line, all you can see is people, they're screaming, and they enjoy your performance; it's tough to match that with a calculator."

Mark added, "We've played at two NFL games..., this gives you the chance to be on national television. That's an experience you probably won't get as an engineer."

After graduation the two plan to continue playing, although in different forms. Mark said he would join a community jazz band or some other music group if the chance arose. Aaron said the same and added that he might even help teach a high school band. Mark explained that they had both talked about teaching. "Helping others learn is another way I gain satisfaction," Mark said, although he would lean more towards teaching a science or math class.

Both have a great love for music, but they do not allow it to hinder their success in engineering. Mark, as stated earlier, is the technical chair for ISHM. This position calls on him to create in a new way. He is responsible for coming up with new ideas for projects, and he utilizes leadership skills in their organization and production.

Aaron's work in his major was rewarded when he won the Power Research Scholarship in 1992. These two students have not only succeeded artistically, but also scientifically. They have pushed themselves to greater boundaries, but not to their limits. Talking with them gives one a sense of pride in what Virginia Tech students can do. Mark gave a four word description of the band, which is also an apt definition for himself and Aaron. The words are simply "The Spirit of Tech." **EF**

Beth Rexroad:

Much more than an average engineering student

By John Cole

She didn't really expect to win. After being on the prom court and the homecoming court all through high school and never winning, being nominated for the homecoming court as a senior this year seemed like just another contest.

Of course it's not like that would dampen her spirits. She is one of the most optimistic, cheerful and outgoing people you could expect to meet. Besides, running for the homecoming court was just one more event in a schedule that is filled with events and appointments. Just listening to her makes one wonder how she finds enough hours in the day.

Beth Rexroad grew up in the small town of Vienna, West Virginia. She has a brother and a sister, both of whom are in their mid thirties now. She was very active in her high school. She was a cheerleader, she was the student body president, and she sang in the choir. This was in addition to SADD (Students Against Drunk Driving) and all the other activities in which she was involved. In addition, she managed to make time to be with her friends, which is still one of her favorite activities.

Even when Beth came to college and started studying electrical engineering, it still didn't dampen her involvement with student activities, or even her time spent with friends. She joined the Kappa Delta sorority. She became involved in student government which led to her election as President of the Class of 1993, a position to which a student is elected in their sophomore year and holds throughout their college career. Being elected to president automatically involved her in the University Council, chaired by President McComas, and



Photo by Mark Cherbka

From President of the class of 1993 to Homecoming Queen, electrical engineering major Beth Rexroad does it all.

the Commission of Student Affairs, chaired by Dr. Goodale. Additionally, she is an honorary member of the Student Alumni Association.

Being involved with all of these activities means lots of meetings. "I'm in meetings a lot longer than I am in classes," explained Beth. However, be-

ing involved in student government also provides opportunities such as being a hostess at parties given by President McComas. As hostess she helped to entertain such organizations as the Preston Society, which is comprised of past members of the Board of Visitors.

Beth also had the opportunity to travel to Japan with the College of Engineering last year. The group of approximately thirty students and faculty advisors, observed the design and construction of the Kansai International Airport. They toured the actual site of the airport, and they visited the research institute that did all the planning for the airport. They also received technical tours at Sharp Electronics and the Tokyo Electric Power Company to get a feel for Japanese industry.

The students also experienced Japanese culture. Each of the students stayed in a Japanese family's home, they visited Japanese shrines and temples, and they saw a play "which was in Japanese so we didn't really understand any of it," laughed Beth.

Engineering was the natural choice for Beth after graduating from high school. Her brother graduated from Tech with a degree in mechanical engineering, and her sister graduated from West Virginia University with a degree in industrial engineering.

Beth also has spent the last four summers gaining experience in the working world as an employee for Consolidated Natural Gas, which awarded her a scholarship. Also, she has already received some job offers for after graduation.

All of her qualities make for a great Homecoming Queen representative of Virginia Tech and the College of Engineering. With genuine modesty Beth says, "It was really exciting when I won, because I wasn't expecting it." **EF**

Bugle editor makes

By Beth Mader

The theme (of the 1992-93 Bugle) is 'Look Again.' Basically a lot of it is because I'm an engineering student. We're looked upon as a technical university, but there's a whole world of people [here] who don't fit the engineering type. Also, college really makes you look at yourself and look at other people. There's always more than meets the eye — like

there's more to me than a civil engineering student."

Courtney Beamon, a sophomore in civil engineering, was elected last spring as the editor of the *Bugle*, Virginia Tech's yearbook. She spends on average five to ten hours a week in the *Bugle* office and devotes more time to the *Bugle* when at home. Add that time to the 18 hours of engineering courses she takes and the time she devotes to

her sorority, Delta Gamma, and the picture of a challenging schedule emerges. Courtney is not daunted, however. "I'm kind of spreading myself out [but] I'd be bored if I just sat around and studied. I wouldn't know what to do with myself," she says.

Such a busy schedule is not new to her. Courtney worked on her high school year book, serving as editor her senior year. Maybe that is why her choice of major has sometimes elicited surprised comments. Courtney adds, "The most common question is: 'You're an engineering student?' That's so common up here because [in Tech's media organizations] there's no one who's anything other than communications... and if they are, they're business."

Yet engineering was not out of character for her. "I've always been good in the math and sciences, but I've always been really well rounded." After last year with the *Bugle*, Courtney is thinking of working on a minor in communications. "I'm kind of hooked," she says with a chuckle.

Working in such widely separate fields has had immediate rewards. After commenting on the different types of work required by engineering and communications, Courtney adds, "I have the 'comm' friends and the engineering friends."

Her relationships with these friends and her experiences in the two different areas have also helped clarify career goals. She talks about her hopes: "What I really would like to do is have a team of engineers that is in charge of the technical work and take their technical work and turn it into a presentation. Whether I'm trying to get a bid for my company or sell something, [I would] be in charge of giving that presentation to someone who maybe doesn't understand all the engineering lingo, present it in common language that they would understand, yet still have the technical knowledge to answer their questions



Photo by Mark Cheibaka

Courtney Beamon is the most recent in a long line of *Bugle* editors.

a real difference

thoroughly and correctly."

However, she adds a cautionary disclaimer: "There's no such [combination] major — sometimes companies hire communications majors or marketing majors. I've been thinking about it for a few years; I definitely want to go for a 'comm' minor."

Her excitement about the possibilities ahead of her is obvious. She knew she "always wanted to do something more with people instead of just sitting behind a computer." Of course, there are possibilities outside of sales. Management is another option. In fact, Courtney is mainly interested in a career that offers opportunities for "more interaction."

Her present position with the *Bugle* will certainly help prepare her for the challenges of such a career. She laughs at the "phenomenal amount of negotiating that goes on." She is lucky this year that she is able to delegate a lot of responsibilities: "I've got really good section editors."

A brief outline of the *Bugle*'s structuring indicates how much practice in dealing with people this job has given Courtney. Ideas and reporting go from the staff, to the section editors, to the layout and managing editors before "it lands in my lap." She must also handle communications between the *Bugle* staff and the photography staff that the *Bugle* hires. A lot of her time is spent on the telephone. These interactions with the various staff members is for Courtney, however, the main benefit of her position. "The best thing about the *Bugle* is the people. I'll definitely remember the people 20 years from now."

One of Courtney's immediate goals

for the *Bugle* is to "keep the staff happy." She tries to keep everyone interested in the yearbook and the process of compiling it by giving the various section editors and staff workers more input and less direct supervision. Al-

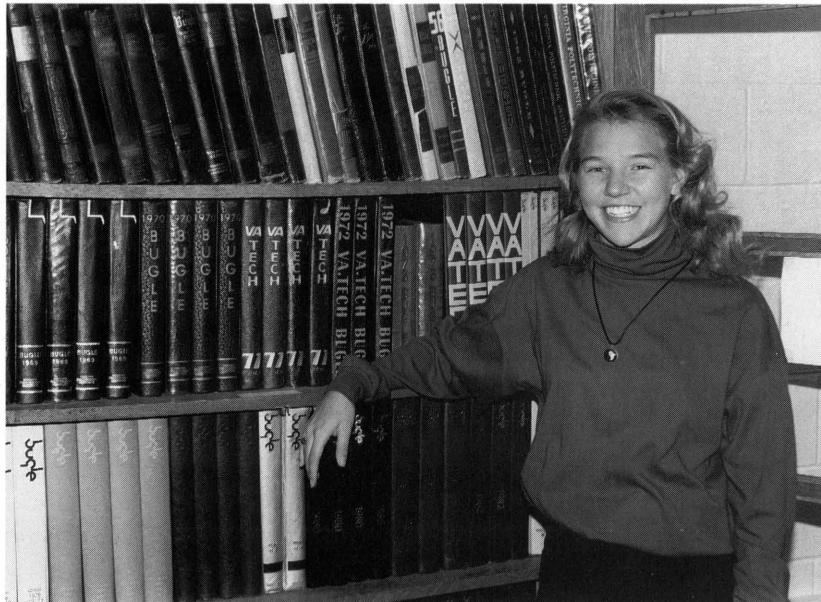


Photo by Mark Cherbaka

though the editorship is an "awesome responsibility," she doesn't want to spend too much time looking over shoulders. Courtney describes herself as a "very laid back person," and her approach seems to be working well. She reports only a few "minor hitches."

Courtney's long term goal for Virginia Tech's yearbook is "making it a student's book. I would like... every student to be able to pick up a *Bugle*, sit down and look at it and find somewhere in the 460 pages of our book, something they could relate to. I'm trying to let more people work on it; the more people involved the more complete it will be."

She is sometimes daunted by what a major challenge this goal has turned out to be. "It's hard to cover such a diverse university. Fifty student life spreads wouldn't cover everything that everyone does."

It would take a few such spreads to

cover everything in which Courtney is, or hopes to be, involved. After listing interests that hold promise for the coming years, she gives yet another reason, beyond active enthusiasm, for her work with the *Bugle*. "Everyone says you have to co-op to be marketable. I firmly believe that if I serve the school and am a well-rounded person when I get out of here, it's not going to matter if I co-op'd at the most wonderful company.... I still think that I'll have learned something from spending time here and I'll have learned how to manage people, how to talk to people and that'll help with what I want to do. There's so much more to college than just studying." She laughs and acknowledges that the concept is not original. She disagrees, however, at those who answer that college is just studying and partying. Her own activities are obvious disproof of such a claim.

It is obvious what topic is predominantly on her mind, because she pauses, then continues: "I guess that's part of my theme again, 'Look Again.' There's another reason that you're here. It's not just to party and it's not just to go to classes.... My advice is: Don't be timid as a freshman. College can teach you a whole lot and... it'll look good on the resume!"

What does Courtney Beamon want to get out of college? "I want to leave here knowing that I've made a difference; knowing that I've done more here than just go to school; knowing a little more about myself and a lot more about other people. Everyone that I've somehow affected — I want to leave them with a smile." **EF**

By Mike Reese

Long hours in front of a computer, reading late at night (or early morning) in dim light, and ingesting large amounts of highly concentrated caffeinated beverages is the unhealthy image most engineering students portray. Mark Maleski is disgusted with this stereotype, and is dedicated to working his body as hard as his mind. Mark's goal is to compete in the Mr. Virginia Tech bodybuilding contest on February 20.

He finds time in his busy electrical engineering schedule to work out two hours every weekday, working a different part of his body each day. "Muscle needs time to heal, so I push one part of my body to the max on a particular day, and then give it a week to heal," explained Mark on this unorthodox approach. His routine also includes a 30-minute aerobic workout followed by a 15-minute workout on either his calf or abdomen muscles.

show improvements in muscle size, and after talking to friends, he decided to train for the competition. "I also saw that I could probably get up there [on stage] and not be embarrassed," added Mark.

His workout involves more than just showing up at the gym. He talks continually with people in an effort to pick up new training suggestions and criticisms. He practices posing and is putting together a routine which he will perform to his own musical compilation. Then comes the difficult ingredient, his diet.

His diet has been low in fat and high in calories and protein to build muscle mass. Now that the contest is approaching, he is beginning a pre-contest diet which drops his calories, and lowers his fat intake even more. Surprisingly, breads and dairy products are completely removed from his new diet. Fruits are also eliminated because they cause

one's insulin level to rise, which Mark explained, "...is bad for muscle growth." What foods, or better yet, food groups are left in this diet? Mark,

for sixteen weeks, will eat nothing but fish, turkey, potatoes, and rice. He will wash his tasty meals down with water only.

"I hope to lose one to two pounds a week," says Mark. This will allow his form to become more "cut" and "rippling."

A few days before the contest, he will begin to dehydrate to get the water out from under his skin. This will improve his muscle definition even more.

Has engineering helped him? It will as he prepares his mind for the competition. Once on stage he must project confidence, and he must be totally focused.

Exuding confidence should not be hard for this successful student. Mark is also an executive member of the International Society of Hybrid Microelectronics (ISHM).

Reflecting on his work to date, Mark is happy with where he is at this point. The Virginia Tech Weight lifting Club (VTWC) Natural Bodybuilding Team, for which he had to tryout, has been a big asset to his workout. In addition to extensive weight training facilities, the VTWC also offers consultation and support. His partner William Goode also has been a tremendous help.

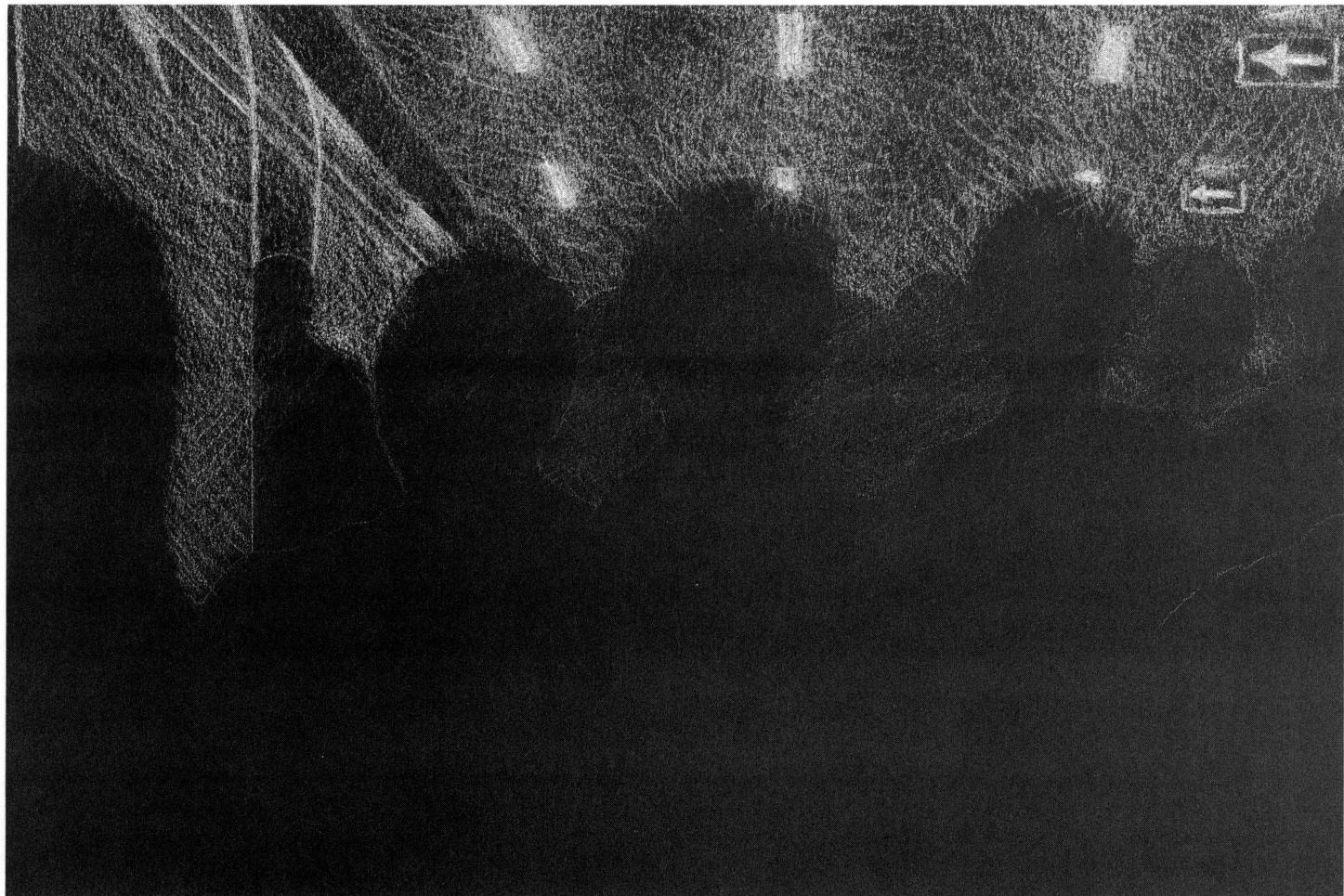
It has taken years of training and dieting to put Mark in his excellent physical condition. Mark is a true winner in academics, extra-curricular involvement, and hopefully in the Mr. Virginia Tech competition. **EF**



Engineers come in all shapes and sizes. **Mark Maleski** fits into one of the larger categories.

Mark has been in this routine for the last two and one-half years, but he first got into weightlifting his senior year of high school. Mark began to

SCIENCE FICTION PAGE



Artwork by Aaron Golub

A VOLTAIC SURGE

by Shane Crofts

When we last checked in with Republican Intelligence Agents Orel and Keble, they had just been sent to the city of Thames to stop the criminal leader Areth Garins from obtaining the technology for a HD-4 bomb. They were to meet with Thames Security Officer Benzoate who would brief them on the current situation.

Suddenly, there was a tremendous explosion. The men jumped back ready to defend themselves from the unknown enemy. Seconds seemed like an eternity as they held their breath listening for any more sounds.

"Curses!" one of the men exclaimed, "My obsidian figurine from Iaum! Do you know how expensive

this was?!" Officer Benzoate glanced up at Agents Keble and Orel who were still recovering from the adrenaline rush. Benzoate gazed down at the thousands of black shards scattered on the cold stone floor. Sighing, he raised back up and solemnly returned to the desk.

"Alright men, let's get back to work," Officer Benzoate turned back to the screen above his desk.

Orel ribbed his cousin Keble, "I can't believe you knocked over his figurine!" he whispered.

"Me?!" Keble shrilly whispered back, "You were closer to the table than I was!"

"If you carefully study the map of the underground, you will notice the

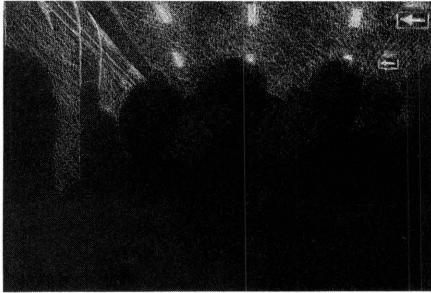
complex networking of the Blue Line," Benzoate continued, fully aware of the argument engaged behind him. "Now, we've received information that the rendezvous should take place on this line. All the other lines touch it at least twice. So the question is, which station? Any ideas men?" he asked turning around.

By this time Keble and Orel were intently studying the screen.

"Isn't the spaceport on the eastern border of the city?" Keble inquired.

"Well, yes. That's right," Benzoate frowned at him.

"Do you see that station, Kingsbridge?" Keble pointed at the screen, "All the lines run through that station, and if one of Garins' men



...suddenly an electric surge engulfed the train. The screams of the man echoed throughout the tunnel as he slid down the train.

wanted to get to the spaceport quickly, the best way would be on the Yellow Line."

"Oh, Good Lord! That's too obvious," Benzoate argue.

"Why is it obvious? Because it's logical? Garins wants you to think that he's shrewd and cunning. But all he knows how to do is play mind games. He hasn't the intelligence to actually think of a complex plan."

The force of the trains stopping created a terrible scream throughout the tunnel. Benzoate was still grumbling about how there was a better chance of marrying the queen's daughter than witnessing the exchange, and that maybe he should ask her out, because he wasn't going to have a job after today.

"Now remember men," Benzoate piped in, "We're looking for a key. They need it to access the information from the program. So keep on the look out for people making eye contact."

The three men positioned themselves around the terminal attempting to blend in with the crowd. The hours dragged by and Keble and Orel realized that they were suffering from hyperspeed lag. Not to mention the fact that they had been in the underground ever since the sun had started to peek over the horizon. Orel finally ended up sitting on a small bench in a corner trying to forget about the four cups of Saxon tea he had that morning. Sure, the caffeine woke him up, but it was causing his cells to release any extra water they were storing. On an important case like this there was no time for things like finding a little relief.

Trying to keep his mind occupied

and stay awake, Orel started pacing around the terminal. The crowd coming off the train engulfed him, and Orel was forced to flow with them. He didn't even notice the young boy standing in his way until he was on top of him. Orel was taken aback by the expression on the boy's face. It was one of fear, uncertainty, and a plea for help.

Orel moved out of the way, but he couldn't get that look out of his mind. It was an expression of all the emotions that he had felt during his old days on the black market. He had learned how to cover it up, but a boy wouldn't have that ability yet. Of course, why would anyone send a boy to do a man's job. Well, why not? Who would be looking for a boy. His suspicions were confirmed when a large, muscular man walked toward the boy. The boy turned a deathly white, then a pale green. They seemed like an odd couple.

"Excuse me," Orel could hear them now that the terminal had quieted down, "I've lost my watch. Do you have the time?"

Orel couldn't tell what the boy's response was, but his eye was caught by a bluish sparkle of light coming from an object in the boy's hand. It was one the qualities exclusive to a metal alloy made only on Itipsius. That alloy was used to make keys, keys that accessed programs.

The sharp whistle of the train coming into the terminal caused Keble and Benzoate to look towards the platform. They noticed Orel walking toward a boy and a man. The frightened boy was the first to notice Orel and he began to back up, which gave the

large man the perfect opportunity to grab the key. By that time the train had pulled into the terminal and the large man shoved through the opening doors. Orel struggled through the current of people and leapt onto the train.

Meanwhile, Benzoate had grabbed the boy, who almost looked relieved, and Keble had to force open the doors to make it on the train before it took off.

The train continued to pick up speed as it pulled out of the station. Orel had already spotted his opponent and was rushing toward him, not stopping to think that this man was twice as big as him. He quickly found that out, when he tried jumping the man, who instantly threw him against the side of the train. The passengers dispersed quickly around him. The impact knocked the air out of Orel, but he wasn't going to let that discourage him. The consequences of him giving up were too great. He jumped back up only to be thrown against the large man by the force of inertia. The train had stopped deep in the tunnel, with the passengers sprawled on the floor.

Keble was the guilty party who had pulled the emergency stop cord. He didn't think well under pressure so he reacted to the first thing that came through his mind. He figured that the escape routes would be limited if the train were stopped. Getting out of the train through the emergency escape hatch above him, Keble climbed down to the narrow platform that ran along the inside of the tunnel. He was trying to find a good position so that he could prevent the large man from getting away.

Oddly enough, Keble was standing near a maintenance box. Quickly, he

opened the box and read the panel. The only pad that caught his attention was the one that read, "Buffer Rail Release". And when the bright red sign that ran across the floor, "Danger: High Voltage", attracted him, Keble's mind shifted into overdrive.

The appearance of the large man coming out of an escape hatch returned Keble to the scene. Keble could see Orel trying to follow the man, who had crawled on top of the train, and was now looking down at Orel. The man went for his gun, and Keble, who reacted without thinking, pushed the

pad that released the buffer rails. They crashed to the floor below, and suddenly an electric surge engulfed the train. The screams of the man echoed throughout the tunnel as he slid down the train.

"Well, sir, it's been a little cooked, but it's all in one piece," Keble said as he handed the key over to Republican Security Agent Petty.

"You did a great job men," Petty told Orel and Keble, "But tell me Agent Keble, how did you know that the other passengers wouldn't be hurt from the electricity?"

"Have you ever been in a ground craft during an electric storm? Well, if your craft gets struck by lightning you're not harmed, because you're inside. The buffer rails kept the train from being charged. When those were removed the electrons were free to charge the train, yet the passengers were not hurt. It's a very elementary concept."

"How come I didn't know about it?" Orel whispered to his cousin.

Keble slapped Orel on the shoulder, "That was the week the dancing girls from Ricarra were on campus." **EF**

A bit of Tech trivia

by Keith Piercy

1. How many books are in the Virginia Tech libraries?
2. How many Resident Advisors are there on campus?
3. What is the average age of a Virginia Tech student?
4. When were the New Virginians formed?

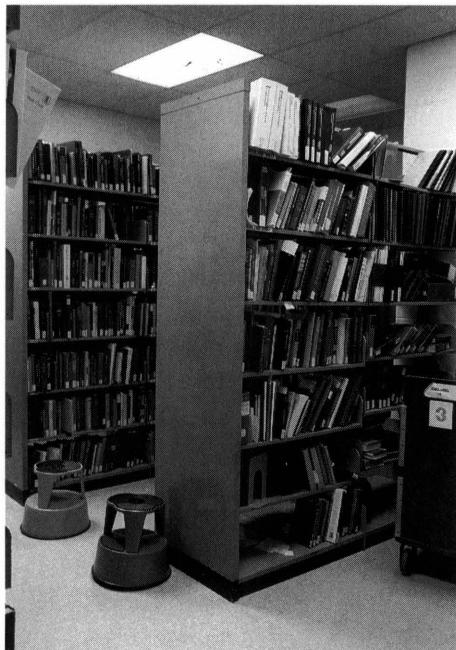


Photo by Lisa Traub



Photo by Mark Cherbaka

5. How large is the Virginia Tech campus?
6. Approximately how many uniformed police officers are there in the Virginia Tech Police Department?
7. Who wrote the Tech Alma Mater?
8. In which building is the largest classroom on campus?
9. When was the last time classes were cancelled at Virginia Tech due to inclement weather?
10. How many people can Dietrick Dining Hall seat?

Hugo 10. 1600
of 1940) 8. McBryde Hall (room 100) 9. Fall 1990 during Hurricane Hugo 10. 1600
Lyrics: L.G. Chase (class of 1941), composed by E.T. Sparks (class
ates) 4. 1972 5. Approximately 1000 acres (main campus) 6. 22 7.
1. Approximately 17 million 2. 225 3. 22 overall (20 for undergradu-

Answers:

Russian students spend year at Virginia Tech

by Lisa Schmeiser

Only crazy people don't come to America to study. Here you can get experience," said Vasily Pankratov, one of three Russian students in the aerospace engineering department.

Pankratov, Sergei Pevchin, and Valery Razgonyaev all came to Tech's aerospace engineering department for the opportunity to gain experience in their field and adjust to American culture.

"Our science and engineering are in trouble so we need to find some kind of work," Razgonyaev said. Pevchin added, "If you are a scientist, you have no money in Russia."

Pankratov is a sixth year student from Moscow Aviation Institute; Pevchin and Razgonyaev are students at Moscow Physical and Technical Institute. Like Pankratov, Pevchin is a sixth year student. Razgonyaev is on his fourth year of study.

Higher education in Russia is set up differently from the United States. "For the first three years you study all kinds of physics and mathematics," Pevchin said.

"You get a background," Pankratov added. "Background from all fields of physics. After three years you choose your supervisor and your specialty," Pevchin said.

"Specialty - is that right?" he asked. Razgonyaev nodded.

"You start some physical research. During the fifth and sixth year, you finish your research," Pevchin said.

Razgonyaev, who hopes to go to graduate school in the U.S., explained that the Russian system of higher education might be a disadvantage when applying. "We don't have bachelors or masters degrees and it can be a big problem. When you go to graduate school, they want that," he said.

Pankratov said, "The main feature

of our system is you spend five or six years studying."

English is also required in their college curriculum. "In Russian colleges, all students study English. We have only technical translation," Pevchin said. He added that most emphasis on English was in technical terms, not conversation.

Pankratov said there hasn't been a large language barrier. "I have a high

"Only crazy people don't come to America to study. Here you can get experience."

enough level of knowledge."

Although all three students speak English in the classroom, Pevchin said he and roommate Razgonyaev usually do not speak it in private. "We communicate with each other in Russian, so we don't get much practice."

"We speak a lot of Russian," Pankratov added.

Pevchin and Razgonyaev are both studying computational analysis. Razgonyaev's interest in aerospace stems from his parents, both of whom are engineers. He also said, "It was much easier to enter that department at the institute."

"The main reason is that aerospace as well as physics, nuclear physics, chemistry, and engineering are the only advanced sciences in our country right now. We can have success in the field."

Pankratov said, "I just like aviation."

"Likes to fly over the country, over the earth," Pevchin joked.

"When I chose [aerospace] it was the best thing in Russia. My brother was in the same department," Pevchin said.

There is very little difference

among departments at the scientific institutes, Pevchin said. Pankratov and Razgonyaev agreed, and attributed the ability to work in different departments to their broad background in physics and math.

Coming to America was difficult for all three students. Although both Pevchin and Pankratov were chosen by the heads of their departments, Razgonyaev had to compete with other

students for an exchange student position.

"There is a big problem in English. Not all well-doing students have English proper," Razgonyaev said.

"It's not so strange in Russia to have, on your scale, a 4.0,"

Razgonyaev explained. Students take 40 hours of classes a week and are expected to do outside work as well. There are no midterms, Razgonyaev said, only finals.

"It is more difficult here," Pankratov said in reference to tests. He was used to oral testing, which is widely practiced in Russia. Sometimes, a written exam will precede orals. "It's an invention of the institute," Razgonyaev said.

Another obstacle was obtaining visas from the American embassy. Razgonyaev came to Blacksburg on September 7, Pankratov on September 15, and Pevchin on September 19. They missed the first few weeks of school because of difficulties with their visas. "Even if you have an invitation, it doesn't mean you'll get a visa," Razgonyaev said.

"Bureaucracy," said Pankratov.

None of the students is doing formal research with the department yet, but Pevchin hopes to start, and Razgonyaev hopes to go to graduate school here.

"After I finish, I have great future of unemployment in Russia," Pevchin

See Russian, page 15

Engineers' Week: Engineering for the future

By William Henshaw, Matt Rutledge, and Eric Flint

The winter break is over and we must look forward to new classes and professors. Engineering freshmen are returning to their second semester of engineering fundamentals. Sophomores and juniors will find the familiar rigors of engineering academics. Seniors are focusing on job interviews, graduate school, and most of all, graduation. Ready or not, the academics are about to resume. Luckily, for all engineers there is relief on the way — Engineers' Week (E-Week) is coming.

E-Week is a nationally recognized event designed to promote unity between the many engineering professions and to inform the general public on developing engineering technologies. It is also a time to define and explore issues facing all engineers today. This year's National E-Week occurs on February 14-20.

In celebration of E-Week, there are events going on across the nation in colleges as well as in high schools. Engineers' Week activities at this campus includes discussions, symposiums, and showcases to recognize ongoing engineering projects and recent developments. This year's E-Week is packed with events, tours and contests. Engineering students must stay up to date on the E-Week schedule so as to not miss any of the special events that are planned. A general list of PreE-Week and E-Week activities is given below.

Contact William Henshaw, E-Week Chairman, or Matt Rutledge, Publicity Chairman, at 231-6036 for more information on E-Week.

PreE-Week Panel Discussion

The discussion will be held Wednesday, February 10, from 7:00 - 8:30 p.m. at Squires Colonial Hall. The PreE-Week panel discussion gives engineers a chance to discover how they will fit into the world of tomorrow. The panel members include: The Honorable James Olin, Former U.S. Congressman, 6th Congressional District, 1983-1992; Dr. Wayne Clough, Dean, College of Engineering; Dr. Paul Torgersen, Dean Emeritus; and Dr. Ron Kriz Professor of ESM/MSE. Presentations will be made on the following subjects: Scientific Visualization, Multimedia, Green Engineering, and The Recent Decline in U.S. Productivity. After the presentations, a discussion period will be open to all faculty and students.

Departmental Information Sessions

The sessions will be held each night during E-Week (see flyers for details); the location will vary with department. The information sessions during E-Week will focus on specific engineering departments. Each week night, two departments will hold presentations aimed at freshman engineering students. Highlights will include demonstrations of current departmental activities, lab tours, and interactions

with students and professors in a social atmosphere. This will be the students' first look at the individual departments within the College of Engineering.

Engineering Open House

The Open House will be held Friday, February 19, from 9:00 a.m. to 4:30 p.m. at the Hancock Atrium. As part of the E-Week celebration, Tau Beta Pi, the National Engineering Honor Society, is proud to sponsor Engineering Open House. This all-day event involves 36 professors from all of the engineering departments who have opened their labs for tours and technology demonstrations. Guided tours of labs will be given every half-hour and will leave from Hancock Atrium. Additionally, engineering society contests and student design projects like the solar car, formula cars, and the Phantom, a human powered submarine, will be on display. Anyone interested in technology should come by for one of the tours.

SEC Olympics

The Olympics will be held Sunday, February 21, from 9 a.m. to 12:30 p.m. at the Rector Field House. "SEC Olympics is a good time for students to relax after a long week of activities," said SEC Olympics Chairman Richard Sanders. For the last two years the SEC Olympics has been the highlight of E-Week for participating student societies. SEC Olympics involves student societies and faculty members in an enjoyable social atmosphere and is a time for students of different majors to interact. Volleyball, tug-o-war, and relay races are the main events. The teams will enjoy free food and take home complementary SEC t-shirts. Teams are organized by the student societies so if you would like to participate, enter through your society. Contact Richard Sanders, SEC Olympics Chairman, at 231-6036 for details. **EF**

Russian *Continued from page 15*

said. "If you work for some research or the government, you have maybe half the money you need for food, but no phone, no rooms."

"Only cheap physical labor," Pankratov said.

Despite the bleak economic situation in Russia, Razgonyaev said he missed "everything" in Russia. Pankratov and Pevchin said America was very different, so they did not suffer much homesickness after the first week.

Their stay in Blacksburg is the first trip to America any of them have had. "We left our friends and our mothers for the first time," Razgonyaev said.

"I just wanted to continue my education and learn English," Pankratov said.

All three students will be studying with the aerospace department until the summer. **EF**

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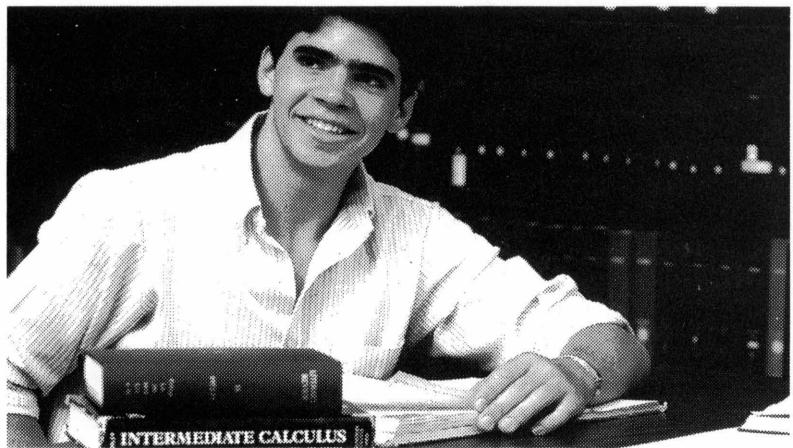


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