FOCUS

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Leave the magic wand at home!

Penn and Teller perform at the Robert Ferst Center for the Arts on January 11 and 12. Magic, comedy, and chaos slam head-on into each other when these two get rolling. Page 23

Running through the records

One of the country's top women cross country runners is at Tech—and she's only a sophomore. Renee Metivier is one of four finalists for the Honda Sports Award Runner of the Year. Page 36



Out with the old, in with the new

As some of the older and more infamous traditions at Tech become obsolete or difficult to maintain, such as the stealing of the 'T,' students begin to usher in a new breed of history.

By Gray Gunter Assistant Focus Editor

By definition a tradition is something you keep and treasure and pass on from one generation to the next. But even the most beloved practices can use a little house cleaning from time to time. And what better time than now to review the traditions of Georgia Tech, to bring on some new ones and let go of the rituals that are past their time?

The Institute is growing, there's new blood coming in and we can still chalk up any drastic changes to the new millennium. So it's time to cut the antiquated fat.

As far as what's out there, three of the best known Tech customs have the most reason to be cut. First off we all need to be honest and realize no one off campus knows or cares about the myth of George P. Burdell anymore.

Sure it's funny to Tech people. This is a wonderful tradition that's lost its former luster because of its obscurity outside the school. It does make for a great story, but for the most part the name has just become a novel substitute for 'John Doe' in word problems on exams. So out of respect for a good prank that's had its day in the sun and brought enjoyment to many, it's time the Institute gave George the pension he's due and placed him in the nicest nursing home available.

The second, and possibly bestknown tradition that's past its prime is the stealing of the 'T' from Tech Tower. The idea is great. The act itself is as steeped in history, adventure and controversy as any other



By Robert Hill / STUDENT PUBLICATIONS

As the old traditions begin to become obsolete (or illegal), such as the stealing of the 'T,' Tech students bring to life a new line of popular and history-surviving fixtures. The "Shaft" is a recent addition to to Tech's icons.

campus practical joke in the country. It's still popular with the students. Pretty much anyone you ask would be willing to at least drive the getaway car, if not don some camouflage and scale the tower them-

However, in recent years the reality of stealing the 'T' has moved ever further away from the lives of students due to changing times and policies. One generation's celebrated prank is another generation's expellable offense. Now the ultimate act of petty vandalism seems too difficult, too dangerous or too illegal to be worth the effort.

But even though the 'T' itself

should be put out to pasture, it can live on in spirit. There are a number of other prestigious, less heavily guarded targets for abduction. Will Tate offered his own energetic solution, "I think we should steal our opponent's band instruments, every home football game. We should just send some people either during the game or the night before and take all their horns and stuff. You know we could pawn them and give the money to charity, or just give it back to them during basketball sea-

The final well known ritual at Tech that needs to be rethought is the Rat Caps for the incoming freshman. When was the last time you saw a student wearing their cap around campus (keeping in mind that members of the marching band do not count)? For that matter, if you're a student when was the last time you saw your own? Robert Busch is one of many students who've managed to misplace their caps, "I sat it on top my dresser most of freshman year. I'm pretty sure I took it home, but I really couldn't tell you where it is right now."

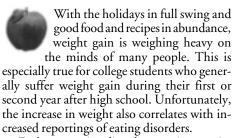
The caps go out of their way to be ugly, and likewise everyone goes out of their way to place them in the

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When weight gain weighs heavy on your mind

Eating disorders such as anorexia nervosa and bulimia plague thousands of college students every year and often the holidays can exacerbate an already harmful disease.

By Emily Cavender Focus Editor



Each year, eating disorders continue to rise among college students. High stress levels brought on from academics, peer pressure and insecurities about the future, compounded with the decrease in physical activity due to longer study hours and less time for physical exertion, leads to the "freshman 15," or in many instances, an increase of 10 to 20 percent of normal body weight.

When the pressure to lose weight becomes too much, students can develop any number or combination of eating disorders. Anorexia nervosa, bulimia and compulsive eating are only a few of the deadly ways thousands of college students quickly shed those excess hol-

In fact, there are more and more reports

about groups of college students taking part in what is commonly called a "binge and purge" party. At "binge and purge" parties, groups of friends gather to party, laugh and binge eat some of the most fattening foods lining the grocery store shelves. After a night of over indulgence, party-goers take turns purging the excesses of the night. Often, friends who share ally suffer weight gain during their first or these eating disorders, also share the breakdown of their kidneys, esophagus, and liver by sharing diet pills, laxatives and diuretics.

This is only the beginning of a long list of deadly characteristics that plaque those who suffer from abnormal eating habits.

Anorexia Nervosa, perhaps the most deadly of the eating disorders, is characterized by an intense fear of gaining weight, self-starvation and a severely abnormal perception of shape or size of the body. People suffering from this disease usually suffer a body weight 15 percent below normal. In addition, Anorexia has the highest rate of death of any psychiatric illness, with one in ten cases leading to death by cardiac arrest, starvation, or suicide.

Bulimia Nervosa is characterized by binging (consuming large amounts of food at one sitting while feeling out of control), purging (getting rid of food by using laxatives, vomiting and obsessive exercise), abnormal body perceptions and a severe fear of gaining weight. Binge Eating Disorder is characterized by recurrent episodes of binge eating without the purging behavior of bulimia.

Eating Disorders Awareness Week is February 10-16. Although only recently recognized as a disease of national proportions, the National Eating Disorders Screening Program (NEDSP) has brought awareness education of these diseases to college campuses across the U.S.

ing to the NEDSP, Accordthe onset of eating disorders ages 14 and 18, peaks at sponding to the correages of changes in an adolescent's body and the transition to college and or leaving the family home. In addition, almost 90 percent of

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It's not just a silicon world

By Benjamin Small Columnist

Some of the most expensive pieces of research equipment on campus are hidden underneath the Van Leer electrical engineering building. The reason these machines are so expensive is that they can do the seemingly impossible feat of growing crystallike materials one atomic layer

This process is termed Molecular Beam Epitaxy or MBE. It allows us to grow material films with atomic precision. Now why the heck would we want to do that anyway?

Well, let's examine your cell phone (sure you have one—everybody does). It operates at frequencies near 850 gigahertz (almost a trillion cycles per second, in the US anyway—in Europe, things are a bit different). That means little electronic components inside the phone have to send and receive signals at that tremendous rate. FM radio, on the other hand, only goes up to 108 megahertz.

So how do we clever electrical engineers make devices that work at these frequencies? We have to custommake the material from which the transistors and things are composed, since nothing in nature is fast enough.

Let me explain what I mean. Silicon, the most popular and ubiquitous semicon-ductor material, can be melted out of sand (silicon dioxide) and purified sorta easily. (There's this whole well established process for doing it that's thirty years old and named after some Czochral-ski guy.) But silicon sucks least for these high-frequency applications. See, electrons just can't fly through silicon fast enough. (Don't even make me talk about why—there's all kinds of quantum mechanics and stuff involved, and your head would probably explode.)

But we can grow materials—using MBE—that can indeed carry electrons at the speeds required. These are the so-called III-V or II-VI compound semiconductor families—named after the columns in the periodic table from which the elements are taken; gallium arsenide (GaAs), gallium nitride (GaN), and indium phosphide (InP) are the most popular. These materials don't readily occur in nature, so we grow them. (No, no, not like a tree or anything-"grow" to material engineers means to carefully deposit or assemble a particular crystal structure.)

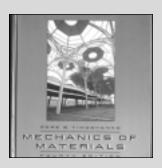
We mix the right combi-

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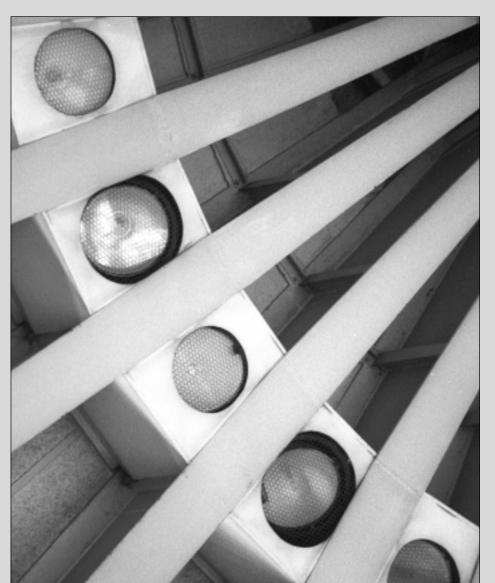
Tech Up Close

Hint: Working out and up email: focus@technique.gatech.edu

Last week's Tech Up Close: Yep, it was a book







By Scott Meuleners / STUDENT PUBLICATIONS

Last week's winner: UGA fans were stumped

The kid in all of us still loves Sanrio

By Kimberly Rieck Contributing Writer

Remember the days when you had a red Hello Kitty wallet and a pink Twin Stars bookbag? How about when you first placed your pencils in your adorable Pochacco pencil case?

Those were the days when life was simple and school supplies were merely for fashion purposes, not for actual work. Has Hello Kitty captivated you since its conception but you have no idea why? Or have you always wondered about the lives of your favorite characters?

Here's how it all began. In 1960, a visionary named Shintaro Tsuji formed a company designed to bring big smiles through little gifts to youngsters worldwide. Tsuji created a line designed around gift-giving occasions. 41 years later, Tsuji is the Chairman of the Sanrio Company, Ltd. based in Tokyo.

In 1976, the Sanrio craze spread to the U.S. when the first American boutique opened in the Eastridge Mall in San Jose, California. Today there are over 4,000 locations in North and South America that proudly display Sanrio character information, and over 200 Sanrio boutique stores. Sanrio now distributes their products throughout Japan, Southeast Asia, the Americas and Europe.

In the early days, Sanrio had two main characters—Hello Kitty and Little Stars. Sanrio introduced Hello Kitty on November 1, 1974. She resides in London with her parents and her twin sister, Mimmy. They are in third grade and have close friendships with Tracey, a boy raccoon, and Joey, Hello Kitty likes to travel, listen to music, read and eat Mimmy's cookies.

Sanrio developed Hello Kitty to serve as a friendly companion to people of all ages. And for everyone who wants to know, she does not have a mouth because she is San-



By Alisa Hawkins / STUDENT PUBLICATION

Oddly enough, Sanrio products have developed a following among college students even though they were originally developed for children.

rio's ambassador to the world and therefore speaks from the heart, not constrained by language.

In 1975, Kiki and Lala, Little Twin Stars, became a part of the family. They were born on the Star of Compassion. During their early years, they passed the time wondering about life on Earth. After Mother-Star and Father-Star gave them permission, they traveled to Earth. Lala's wand led them while they were on their journey and ever since they came to Earth, their purpose has been to spread happiness to everyone they meet.

In an effort to appeal to more children, Sanrio created the gender-neutral character Keroppi. Keroppi was born on July 1st. He lives in a big house on the edge of Donut Pond with his brother, sister, and parents. Keroppi and his friends spend their days playing games; their favorites are baseball and boomerangs. He also was the first character introduced with a love life. He has a girlfriend, Keroleen, that he spends a lot of time with. Also he has his own sidekick, his snail friend Den Den, that always tags along behind

im.

Sanrio introduced the lovable Pochacco in 1989. Pochacco's birthday is February 29th—yep he's a leap year pup. Pochacco is the popular purebred in the neighborhood because he is the best basketball player and goalie on the playground. What's cool about Pochacco is that he's a vegetarian. Instead of doggie bones, he prefers carrots and banana ice cream.

Another great character is Pekkle, the duck, introduced in 1989. Pekkle's birthday is July 27th. He's a funny, wannabe lifeguard from Australia who can't swim. He is a very loyal and devoted to his girlfriend Ruby and his aquatic companion, Pich the fish. He also has a talent for dancing and body surfing. He prefers to spend his time at the beach with Ruby and Pich.

The rebel in the Sanrio family is Badtz Maru, the mischievous penguin. His birthday is April 1st and he celebrates the spirit of his birthday all year by constantly telling jokes and pulling pranks. He re-

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Hello Kitty & Friends



Hello Kitty
Realname: Kitty
Birthday: November 1
Birthplace:
Suburban London, England
Weight: The

same as 3 apples *Likes*: Small, cute things. Candy, stars, goldfish, etc.

Kitty is a cheerful, warmhearted little girl. Baking cookies is her forte, but what she enjoys most is eating a slice of Mama's apple pie! Kitty and her twin sister Mimmy are the best of friends.

Little Twin Stars



Real names: Kiki, Lala Birthday: December 24 Birthplace:

Compassion Planet in Dream Galaxy

Family: their father was an inventor, and their mother, a poetess Friends: the sun, the moon, the stars, the clouds, and a host of sprites, faeries, and animals

Favorite season: Kiki likes spring and summer best. (He likes to look down on fields of dandelions from his cloud-top perch.) Lala likes fall and winter best. (She loves to write letters to her mother and father while floating in a local season.)

ing in the clear winter sky.)



Keroppi Real Name: HasuNoUeKeroppi(Keroppion the Lily Pad)

Birthday: July 10 Always off on an adventure, this fearless, fun-loving frog is the star of Donut Pond. Keroppi lives there with his siblings Koroppi and Pikki (They are triplets). Sing-



ing and swimming are his specialties.

Pochacco Birthday: February 29

Birthplace: Uguisu Yokocho (Nightingale Lane)
Personality: Curious, but a little scatterbrained.

Habit: Tries to walk in one direction, but somehow always ends up straying off the path in search of something new.

Hobby: Taking walks

Specialty: Walking on his hind legs, despite the fact that he's a dog. (But sometimes he trips on his own feet!)

Best Friend: Pochacco can make friends with anyone he meets on the road, but his true friend of

friends is Choppi the mouse.



Ahiru no Pekkle

Realname:Pekkle *Birthday*: July 27 Good-natured

and kindhearted, Pekkle can most often be found singing or dancing--two things he excels at. He is currently enrolled in a tap dance class.



Badtz-Maru Birthday: April 1 Birthplace: Oahu Island, Hawaii Personality: A

selfish,

Badtz-Maru tends to make fun of things he thinks are silly. This mischievous little penguin loves to fight for the wrong side. His hobby is collecting pictures of movie stars who play bad guys. *Dream*: to be boss, of everything in the world.

Flying off the shelf: The "IT" toys of 2001

By Kimberly Rieck Contributing Writer

Despite the fact that the economy is faltering in the aftermath of the September 11th attack, the holiday shopping season is still in full swing. In recent years, there has been one "it" toy that every child in America had to have. This year, however, it's a different story with a wide spectrum of popular items jumping off the shelf.

To begin, the terrorist attacks have spurred a high demand for rescue hero themed toys. One of the most popular series is the Rescue Hero action figures line from Fisher Price. The series includes Billy Blazes, a firefighter, Willy Stop, a police officer, Gil Gripper, a scuba diver and Bob Buoy, a Coast Guard officer. The action figures retail for around \$8 a piece. There are also several accessories available such as the voice tech fire truck, selling for \$34.99, and the aqua command center, selling for \$74.99.

Another popular item is a throwback from the 1970s. Every holiday season has a hit retro toy, and this year it is Shrinky Dinks made by Spin Master Toys. The Shrinky Dinks set includes a Shrinky Dinks oven and a number of accessories that children use to create ornaments and toys to wear, play with or use as decorations. Children make the toys by coloring outlined images on heat-sensitive plastic sheets, and then placing them in the oven for a few minutes to watch them shrink before your eyes. The set retails for \$34.99.



By Daniel Uhlig / STUDENT PUBLICATIONS

Although not as fresh as the Nintendo GameCube or the Microsoft XBox, the Sony Playstation 2 is still a high-demand Christmas present this year.

Barbie dolls, on the other hand, have become a thing of the past. Her successor is the new line of Bratz dolls from MGA Entertainment. The line appeals to the style-conscious, preteen, TRL audience. The Bratzpack is a set of four dolls that feature hip clothes and a diverse background. The set consists of Chloe, Sasha, Jade, and Yasmine, each complete with her own outfits and accessories. The price for one doll is \$14.99.

Robotic toys are also in style again. Trendmasters produces the brightly colored Rumble Robots. Rumble Robots is an innovative card game that combines card play with a battling electronic robot counterpart. The electronic toys use game cards won in card play to power

themselves, so kids can first play a card game together and then use a remote control to launch a battle against another person's robot. Each robot retails for \$29.99.

The fantasy that many youngsters have of becoming the next Britney Spears or N*Sync has made the newe-kara, a karaoke toy from Hasbro—extremely popular. The karaoke toy plugs into the television and comes with five song cartridges with selections from Britney Spears, Destiny's Child, Backstreet Boys and the Beatles. E-kara retails for \$59.99.

Inspired by Tony Hawk, the popular skateboarding star, Tech Deck has produced a line of skateboarding toys and accessories featuring the star. It gives youngsters a

chance to practice extreme stunts through the use of a remote controlled stunt boarder in the comfort of their living room. The figure performs stunts and tricks and has various steering and speed capabilities. The vertical ramp accessory costs \$19.99 while the actual skateboard and figure retail for \$59.99.

The mega success of Harry Potter: The Sorcerer's Stone at the box office has led to a huge demand for Harry Potter themed toys. Several companies produce a variety of Hogwarts accessories at different price levels. Lego has created a line of Harry Potter products that enable people to create actual scenes from the movies themselves. The Lego toys range from the large Hogwarts Castle, selling for \$89.99, to smaller ones such as Gryffindor House, for \$10.99. You can also make your own Hogwarts Express train for \$49.99. Mattel also has several items for the film that are selling like hotcakes. One of the coolest items is Professor Snape's Potion class, a kit that makes drinkable "potions" with ingredients that fizz, foam, smoke and change colors. There is a Levitating Challenge game that sells for \$34.99. Mattel also makes several action figures for each character that sell anywhere from \$8.99 to \$19.99. Plus, there are Harry Potter video games, clothing and books as well.

Another film that caused a splash at the box office and in the toy market is *Monsters Inc.* The lovable monsters from the film are available in several forms. There is Glowing Bed-

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Sanrio

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sides in Gorgeoustown with his mother and pinball-playing father. He is a first grade student at Gorgeous Academy. He takes his pet alligator Pochi everywhere. To bide his time before he can achieve greatness elsewhere, Badtz Maru rolls his eyes and makes fun of his life in Gorgeoustown.

Each character represents and symbolizes a different stage of childhood. The Little Twin Stars are perfect for young children and bring compassion, comfort and joy to the hearts of little kids. Hello Kitty, on the other hand, is an older child that has a life similar to many third graders. Kids can relate to the idea of seeking adventure and fun. Keroppi is at the stage when children begin to find out their individual abilities and want to seek their own identities.

Pochacco is the cool kid that everyone wanted to be on the playground while Badtz Maru is the rebel that many of us envied with his mischievous and cool pranks.

There are several reasons why, even as college students, Sanrio products still have a hold over us. They forever connect us to our childhood and bring back the days before we had to worry about differential equations.

In addition, the products are cool because they feature the best parts of Japanese animation and design. And as Kathryn Lyall, a first year Biology major, said, "It's just something that even though you get older, you never grow out of Hello Kitty. It just appeals to all ages because it's just so cute."

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nation of component gasses or vapors inside an extremely high-vacuum chamber (like billionths of an atmosphere) and heat a target substrate in order to attract the atoms we want. The problem with most of these gasses and vapors is—yup, you guessed it—they're deadly toxic. (Well, it makes the research more interesting anyway.) But if we control everything just right, we can "grow" layers of almost any crystalline material we want.

Professors April Brown and Alan Doolittle of the School of Electrical and Computer Engineering and their staff of research assistants are some of the most successful researchers in the world at growing semiconductors by MBE. They can grow material films and control quite precisely how the composition varies throughout the different strata.

Now, maybe I make it sound a bit too easy, like we can just make a sandwich of these odd materials, and everything will work out perfectly. Of course not—don't be silly. It actually takes quite a lot of careful planning to make sure that the individual strata of materials don't peal off of each other. Even though they can control which atoms are

laid down in which order doesn't mean that they can form the electron bonds necessary to make the layers stick—engineering isn't quite that advanced yet.

As Dr. Doolittle noted, it can be challenging "to integrate systems that aren't native to each other"-that is, to grow layers of materials that are "chemically dissimilar and structurally dissimilar." Crystals from different chemical families, like GaAs and silicon, are difficult to grow together; the atoms don't line up quite right and the bonds are not always compatible. (Imagine painting glass without primer.) But "MBE, because of its ability to control growth with such a high precision, allows us to do that," explained Dr. Doolittle; we can almost force materials to stick to each other.

The stratified compound material can then be used to construct crazy-fast transistors and other devices to be used in cell phones or elsewhere in the communications industry where high frequencies reign. Physicists' and engineers' wildest fantasies (OK, maybe not wildest) can be realized with the odd new materials grown by MBE and similar technologies. They envision designs for novel devices far before the material specialists invent ways to implement the designs.

"I have observed new material systems develop and offer promise of wondrous device performance...resulting in numerous new devices that could never have been dreamed of just a few short years ago," said Dr. Doolittle.

See, most contemporary devices (like the transistors in your cell phone or in your computer) operate on a fairly straightforward physical principle known as the "field effect" that is, a voltage causes some change in the material (a change in the conductivity, really), which allows a particular region to behave as a transistor. Carver's project envisions constructing novel types of devices based on other sorts of physical effects like the ferroelectric effect (electric field causes a polarization of the crystal) or the piezoelectric effect (electric field causes material strain); hopefully improved device performance will result from these new approaches.

The future of electronics could very well be with different and interesting new materials, and it's likely that MBE will take us there. As Dr. Doolittle likes to exclaim, "it's not just a silicon world!"

If you're interested in exploring this groundbreaking field of electrical engineering, contact alan.doolittle@ece.gatech.edu.

By Benjamin Small / STUDENT PUBLICATIONS

Some of the most fascinating pieces of research equipment on campus are hidden underneath the Van Leer electrical engineering building. These machines can grow crystal-like materials one atomic layer at a time.

Food

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those suffering an eating disorder are adolescent young women while men constitute as many as 25 percent of those exhibiting binge eating disorders. Sadly, the NEDSP reports that bulimia is as high as 15 percent in college-aged women.

Statistics are not in favor of students with eating disorders either. For example, 95 percent of all dieters will regain their lost weight in one to five years. In addition, over 91 percent of women surveyed on college campuses attempted to control their weight through excessive dieting which ultimately contributed to the development of their eating disorder.

In essence, abnormal dieters progressed to pathological dieting or full-syndrome eating disorders after beginning an unhealthy diet.

Contributing to eating disorders is the fact that over 80 percent of Americans are dissatisfied with their appearance; most of them wanting to be thinner.

Luckily, Tech offers a wide range of private services to those who are sick. These include health and counseling services that provide students with information to help educate them about their disease.

The counseling services provide psychological, medical and nutritional counseling as well. Students can even make an appointment with a nutritionist that comes to campus a couple of times a month and learn to manage their weight in a healthy and reasonable manner. There are also private support groups where students can contact others who suffer from similar eating disorders.

It is extremely important that these students know that they are not alone. Help is available to combat these deadly psychological and physiological diseases and recovery is completely possible with the right support and treatment.

If you think you might suffer from an eating disorder contact the Student Health Center.

Toys

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time Sully, a fuzzy replica of the hairy blue monster. The doll not only talks and is extremely huggable, but it's also nightlight. The toy retails for \$29.99 from Hasbro. There are also interactive Mike Wazowski and Babblin' Boo toys available from Thinkway. Plus there's the Play Doh Mold-A-Monster kit from Hasbro that enables kids to use their imagination and create their own monsters to scare their friends. The kit sells for \$19.99.

Last year, Playstation 2 was the must-have game console of the Christmas season. This year, there are two new consoles entering the marketplace, Microsoft's Xbox, and Nintendo's Game Cube. Both game consoles are also competing with Playstation 2 which still remains a popular choice for consumers. The Xbox is a powerful machine with a 733 MHz CPU and 233 MHz graphics processor. On the other hand the Game Cube has an awesome feature where Game Boy Advance units will hook up to the remote controls to set plays in Game Cube games. All three systems have a wide variety of games available. Xbox retails for \$299.99, the Game Cube for \$199.99 and the Playstation 2 for \$299.99.

All of the aforementioned toys and products are available at a variety of retailers, and malls. But if you don't have the time or patience to hit the mad rush, check out the hundreds of online stores. You can buy books, toys, clothing, electronics and art online and have it directly shipped, wrapped and all, to your closest friend or relative—even if they live in Bocca Raton.

If you have trouble finding any of the products and still want to give a special gift, another popular option this year is to make a donation in someone's name to charity.

Or even better yet, put your heart into a gift for mom and stick to the old-fashioned way of making Christmas tidings—make a gift yourself.

Change

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darkest corner of their closet. Forcing obnoxious headgear on new students may have worked when this was still a military school, but short brimmed beanies aren't so popular when any other option is available, and so the tradition has become obsolete due to a lack of any reason to keep it up.

There are some practices at Tech that are as popular today as ever. Everyone knows the words to "Rambling Wreck", it's hard not to when it's played a dozen times at any sporting event.

But it's something for the student body to rally around. The steam whistle is still an innovative alternative to the old college clock tower and only slightly disturbing to visitors. Given the rising cost of tuition many students are probably unable to afford a watch, so the whistle remains functional as well as historic

The fact is, tradition has a place here but sometimes tradition has to be let go for the sake of tradition. Better to have none at all rather than spouting a handful that aren't even respected anymore. If the only time a tradition gets any attention is in a prospective student brochure or during an orientation speech, then it's time for the student body to reassess the situation and figure out what it truly believes in.



bag).