



Courtesy of jpl.nasa.gov

Helicopters meant to catch the Genesis sample probe in mid-air instead land at the crash site after the probe's parachute failed to deploy.

Cause of Genesis Failure Found; Researchers Clean Sample Disks

By SONIA TIKOO

On August 8, 2001, scientists researching the solar system's creation observed Genesis. The \$260 million dollar JPL project was launched on a Boeing Delta II rocket, with an array of collection wafers to obtain samples of solar matter and ions from solar winds over the course of its three-year mission.

When Genesis finally re-entered the Earth's atmosphere on September 8 and crashed to the ground in Utah, thus beginning a roller-coaster of retrieval operations, mishap investigations and questions for project scientist and

principal investigator, Caltech nuclear geochemist Dr. Burnett.

Burnett began studying solar system chemistry 14 years ago and began his leadership work with the Genesis project in 1998. Burnett described the goals of the project as being, "taking samples of solar wind and measuring relative amounts of isotopes of different elements. This will be used to find out what the composition of the solar nebula was, from which planetary materials and objects were formed."

Once in space, Genesis occupied its observational position at L-1, the Lagrange point between Earth and the Sun where the two

bodies' gravitational forces are balanced, located approximately a million miles from Earth along a direct line connecting the centers of both spheroids. The probe would then co-orbit with the same angular velocity as the Earth and was precessed daily by approximately one degree in order to keep the collection materials and observational equipment facing the sun.

An array of collection wafers, most of which were composed of silicon-based materials, would collect solar wind particles one atom at a time. Ions from solar wind can be readily collected because they possess a relatively high charge of +17. The Genesis project is primarily interested in collecting samples of oxygen nitrogen and noble gas isotopes to understand isotopic variations in lunar rocks, planetary atmospheres, comets and meteors.

For three years, the Genesis

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Admissions Director Increasing Awareness

By DAVID CHEN

The new Director of Admissions Rick Bischoff aims to better explain Caltech's unique personality to prospective undergraduates. Mr. Bischoff, former Director of Recruitment Strategy and Associate Director of Admissions at the University of Chicago, bubbles with excitement as he explains his role in the community.

Caltech is unique in its combination of world-class research and a small undergraduate body. The problem is how to convey this message to high school students. Mr. Bischoff notes that current high school students tend to develop short lists of colleges by the middle junior year and becomes "difficult to fight your way on the list at that point in time. So we want to make sure that we are in people's minds, that they're thinking about Caltech, building that awareness. We're figuring out how to tell the story of Caltech—which I find to be absolutely fascinating."

Comparing Caltech to MIT, he notes that Caltech is less ag-

gressive in the recruitment process. Since Caltech is smaller and therefore has less alumni, Caltech is already at a slight disadvantage compared to its peer universities. "MIT, for example, is a larger school. Someone is more likely to know somebody who went to MIT because there are more graduates. What we need is to have more touches with high school students," describes Mr. Bischoff. Essentially, the admissions committee plans to reach out to high school students more often.

Caltech's undergraduate community of only some 900 students provides numerous opportunities. "If you go out and say, 'Oh, we're a small college and we only have 900 undergraduates', what the typical high school student would think is wrong. We're a larger place with a smaller undergraduate student body and the challenge is to convey how the smallness of the undergraduate population translates into opportunities that students have." Mr. Bischoff emphasized that there is no school

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JPL Rose Parade Float 'A Family of Explorers'

By ZHIYUN GUAN

For the first time in eleven years, a float from Caltech will appear at Pasadena's world-renowned Rose Parade. The float, sponsored by JPL and Caltech, celebrates recent successes at JPL in space exploration. Its theme, "A Family of Explorers," extends the theme of the parade itself, "Celebrating Family." This particular theme holds a dual meaning; "the family is all the different spacecraft, but also the JPL-Caltech family as well," explained Richard O'Toole, lead of the float committee at JPL, which selected a design by Dave Pittman from Phoenix Decorating Co. for the float.

The design of the float incorporates nine space missions designed and run by JPL. Models of Cassini, Galex, Stardust, Jason, Genesis, the Mars Rovers Spirit and Opportunity, the Spitzer

Telescope and the Mars Global Surveyor combine into the towering figure of a space explorer. "Our goal was to try to represent as many of the missions that have been flying this past year [and] represent the work of as many of our employees as we could fit on," O'Toole said.

Standing at a height of 50 feet and width of 18 feet, the float will be covered in a colorful array of plants and flowers. Statice, carnation petals, silver leaf, eucalyptus leaf, onion seed, sesame seed and crushed rice will make up the spacecraft, while roses, orchids and gladiolas will cover the base of the float. Fresh flowers and petals will represent the flames issuing from the explorer's rockets. In addition to colorful presentation, the float will also be animated. The explorer's head will

Continued on Page 2, Column 1



Courtesy of R. O'Toole

The JPL float, shown here in an artist's rendition, incorporates models from nine different JPL missions.

Institute Receives High Marks In International University Ranking

By CHRISTINE CHANG

In a recent survey published by the London Times, The Times Higher Education Supplement (THES) placed Caltech among the top institutions internationally by ranking it the fourth best university in the world. "For a small school like Caltech, it is an honor to be ranked so high," said Professor of Mechanical Engineering and Applied Physics David Goodwin.

To compile the table, the THES asked 1,300 academics from around the world to list the top institutions within their fields. As a sign of intellectual vigor, the THES considered the volume of cited research by faculty. Other criteria included the ratio of faculty to students, the success of the

institution in capturing the attention of foreign students and established academics. These standards concentrated on the success of the university in the international competition of academia.

"This is considered a tiny plus," said Professor of Civil Engineering and Applied Mechanics Paul Jennings. However, Jennings stressed that the survey is very qualitative, and therefore while being pleased to be ranked so highly, he would not take the results so seriously.

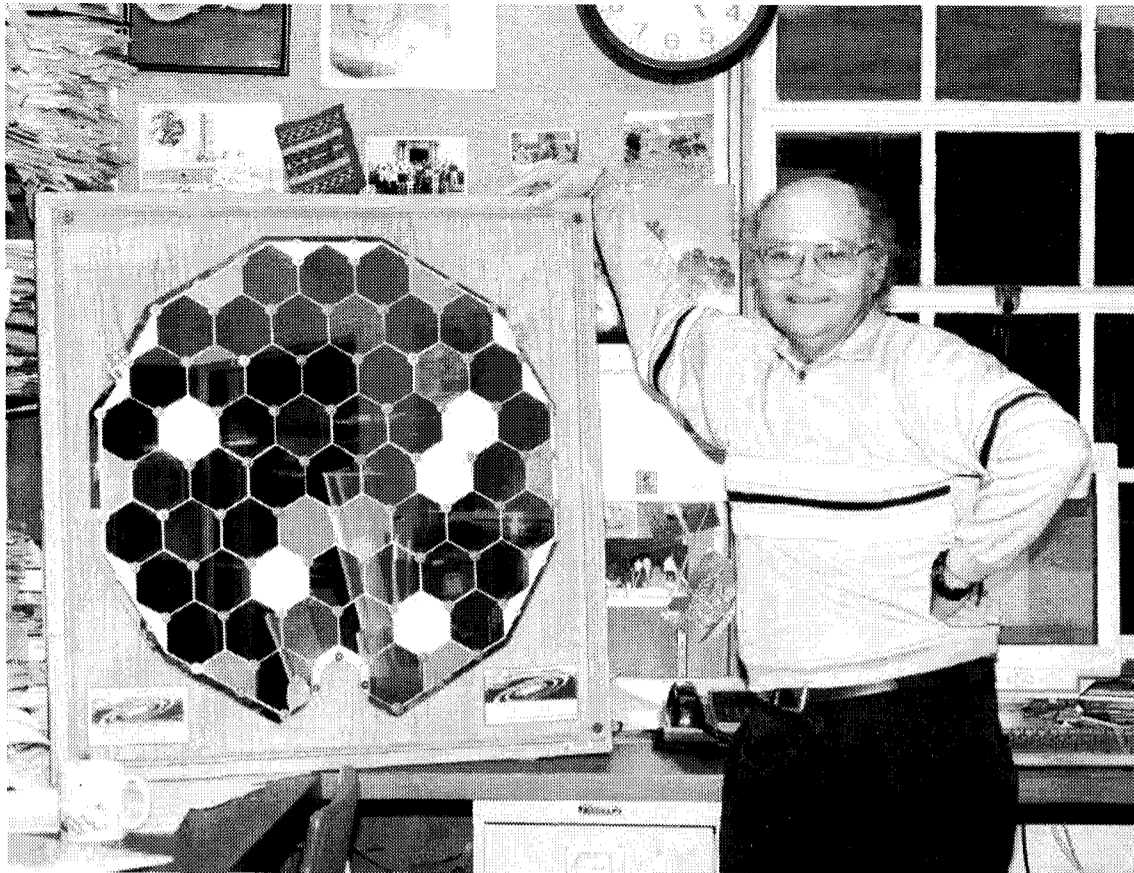
Because of the subjective quality inherent in this type of survey, Caltech does not intend to change in any significant way due to the results. "We just need to keep doing things that led to high ranking," said Goodwin.

Harvard ranked first in the sur-

vey, with was followed by the University of California, Berkeley and the Massachusetts Institute of Technology (MIT). Overall, the United States laid claim to 62 of the 200 schools on the list, while Britain had 30, Germany had seventeen, and Australia had fourteen. The rankings included a total of twenty-nine countries.

The survey awarded points to each university in the five areas and normalized the scores to the highest total points, which was listed as a total of 1000 points. Harvard, as first, gained 1000 points, with Berkeley trailing with 880.2 points. MIT earned 788.9, and Caltech followed closely with 738.9 points. Behind Caltech, both Oxford and Cambridge were listed as having 731.8 points.

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D. Korta/The California Tech

Dr. Burnett, principal investigator for the Genesis probe, poses with a model of an array of collection wafers. The 250 wafers that were onboard Genesis shattered into over 10,000 pieces in the crash.

Float Passes Function Test, Moved To Permanent Site for Decorating

Continued from Page 1, Column 5

turn to survey his surroundings and the figure will lean forward as the rockets fire for a visually impressive effect.



Courtesy of jpl.nasa.gov

Dr. Richard O'Toole is heading the organization committee for the float.

Ever since the project was first brought up in February, excitement and interest surrounding the float has been high, according to O'Toole. A "float day" at JPL in September introduced the design. "We served root beer floats and showed the design to our employees and everyone had a good time," O'Toole said. "That was a good first exposure." Since then, construction on the float has been extensive; only the decoration is yet to be done.

A recent safety and function test also brought more publicity to the float. The test, on November 20, was open to all those interested, according to Campus Life Assistant VP Tom Mannion, also on the float committee. The undecorated float was tested for its ability to stand up properly, speedy evacuation time and other functional aspects, according to O'Toole. "It all worked fine," he said and about 200 people from the community had arrived by 7 A.M. to watch. After the test, the float was moved to a permanent location for decoration.

Students may volunteer to work on the float and should get in touch with JPL as soon as possible, Mannion said. Dry decoration will proceed first and floral decoration will take place in late December. Those volunteering should expect to do so for about a week. Most of the work will be done on or before December 30 to ensure the readiness of the float on New Year's Day, Mannion projected. Volunteers can find a registration form online and will

receive a T-shirt for their effort. The progress of the decoration is also available for viewing on a 24-hour webcam online.

Many months of planning and work will culminate at parade, which many members of the Caltech-JPL community are expected to attend. Seeing the fully completed float should be a stunning experience, Mannion predicted. "You spend all this time and it's still going to wow you when you see it," he said.

Genesis Labs Rethink Data Analysis Details

Continued from Page 1, Column 3

mission operated flawlessly. During re-entry, however, the parachutes intended to slow the descent of the craft failed to execute and the probe impacted the soil at velocity. Apparently the cause of the malfunction was that the gravity switch accelerometer had been installed into the probe inverted. The gravity switch was unable to sense the deceleration of the craft upon re-entry properly and thus the parachutes were not deployed.

The 250 hexagonal collection wafers were shattered upon impact into over ten thousand recovered bits and pieces, the salvageable ones being a minimum of three millimeters in size. Among the pieces currently being gathered and cleaned at NASA facilities such as the Johnson Space Center in Houston, only 20 percent possess a diameter of greater than one centimeter.

As disastrous as the description of the crash sounds, a relatively unfazed Burnett detailed the current state of the Genesis project. Since the samples collected were so small in size in the first place, there is a high likelihood that they remained intact despite the shattering of their containers.

"There are three stages of recovery," Burnett stated. "The first is to collect the remaining intact pieces, the next is to clean them up from the dirt and the dust left from the crash and the third then is to figure out how to analyze them in smaller pieces than we were expecting."

Burnett cited a specific, yet drastic, example of one research lab that had initially wanted one 25 square centimeter tile for

study, when they will now receive somewhere around smaller pieces. Analytical methods will have to be adjusted in order to accommodate this factor.

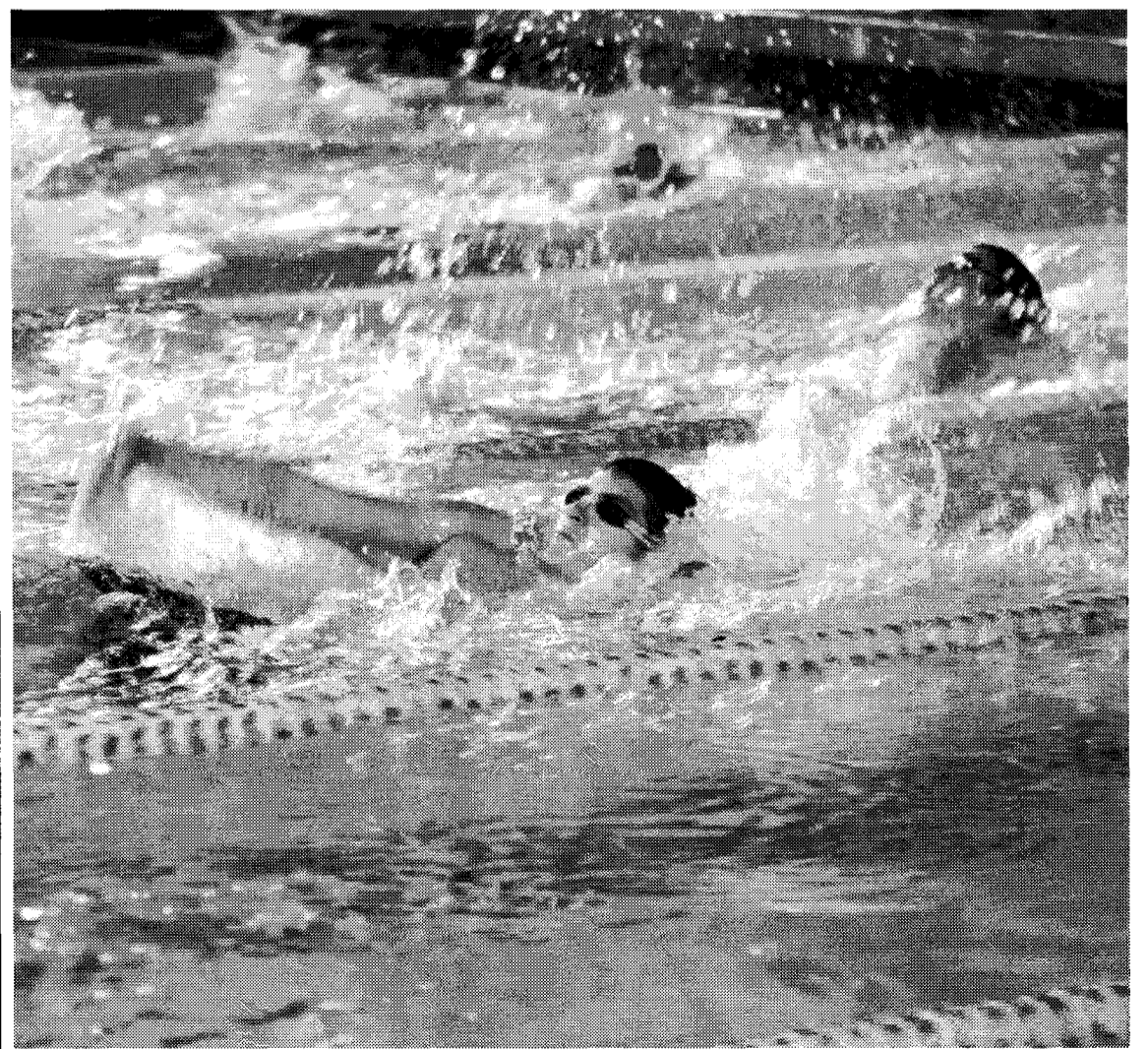
Referring back to the three stages of recovery, Burnett stated, "Stage One is complete. We have all the pieces. Cleaning them up is in progress. Analysis hasn't really begun, but we're close to sending out the first samples. We had some special samples, but most of these survived relatively intact. We're focusing on getting those out the door."

When analysis begins, it will be a combined effort between NASA and other research facilities. All the technical work regarding Genesis is being done at JPL and most analytical work will be split between a lab at the University of California-Los Angeles and Argonne Labs. Other smaller analysis projects will be worked on by other groups, in total comprising of 37 scientists representing 16 universities around the world.

Despite, all that has happened, Burnett remains optimistic about the science that the remaining shards of Genesis will provide, claiming that for the most part, the crash is simply, "slowing things down" and in regard to the research, "nothing fundamental will stop us with this, but it will take longer to do." All in all, the mission remains the same.

For more information regarding the Genesis space probe, the recovery mission, or the soon-to-become analysis of its recovered components, those interested should visit the project's official site at <http://genesismission.jpl.nasa.gov>.

Fleming Glides to Victory During Interhouse Swimming and Diving



Men's backstroke racers kick towards the finish during the Thursday finals of the Interhouse swimming meet.

A. Green/The California Tech

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Letter to the Editor: Que's Editorial Misses Part of Marriage Argument

Dear Editor,

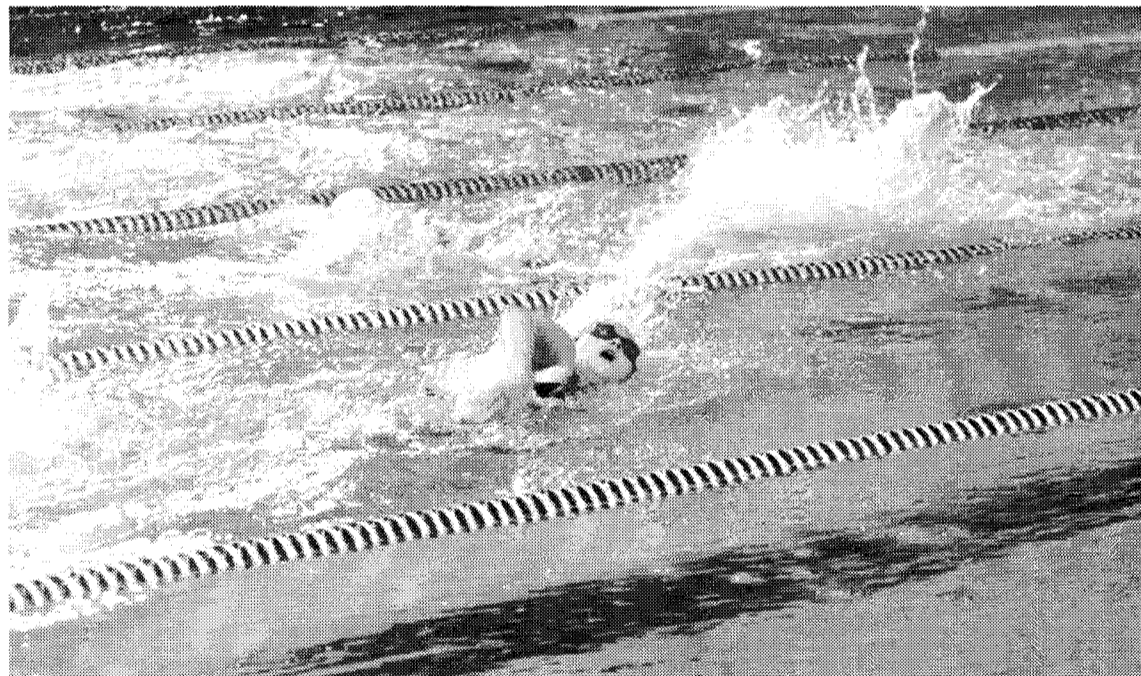
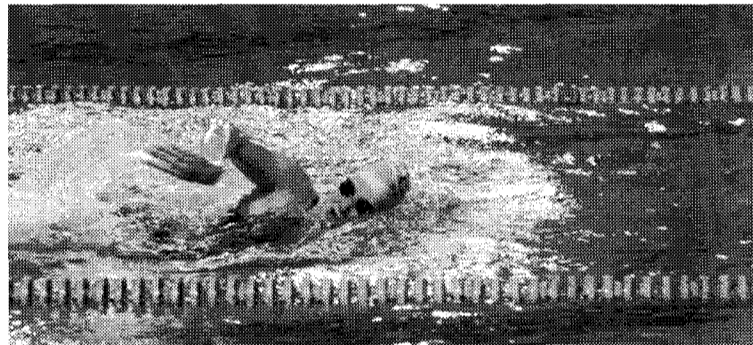
Simon Que's November 15th editorial "Rethinking Civil Marriage" neglects to consider the important issues involved in the legality of same-sex marriage. The author states that the denial of a marriage license is no violation of liberty or justice. However, in the minds of few if any Americans does the idea of justice not include some element of equity. If a state-issued marriage license granted no privileges then the fight would surely be symbolic (though I would contend even that doesn't diminish its importance). However, marriage licenses do grant privileges, and therefore to issue them with justice requires some level of equity.

In particular, married couples benefit from inheritance privileges, for example an individual can receive his or her spouse's Social Security and other retirement/pension benefits even after the spouse has died; also spouses benefit from automatic inheritance in the absence of a will. Marriage al-

lows for joint ownership of property and insurance, which often carries financial advantages. And, as ironic as it may seem, marriage also provides divorce protection in the form of both rights and legal arbitration.

Few licenses and privileges granted by government are granted blindly to anyone, for example a driver's license requires being over 16 and passing a test. However, the American ideal is that the granting of privileges should not be based on race, gender, or religion, for example. I have yet to see a logical argument that explains why opposite-sex unions should qualify for the above mentioned privileges while same-sex unions should not. In particular, all arguments I have heard either explicitly or implicitly refer to standards expressed by religious documents. The use of such sources in public decision making is banned by the first amendment to the constitution.

Michael Salem
Graduate Student



A. Green/The California Tech

Experienced and newer swimmers compete in last Thursday's Interhouse Swimming Finals. The meet was extremely close with Fleming, Page and Lloyd taking first, second and third, respectively.

Women's Basketball Breaks 41 Game Losing Streak, Swim Begins Season

By MIKE RUPP

Caltech Sports Information
Weekly Roundup
November 29, 2004

Athlete of the Week: Women's Basketball's Lindsay King

The Freshman Forward from Bedford, New Hampshire repeated as Caltech Athlete of the Week as she averaged 13.5 points, 8.0 rebounds and two assists at the 2004 Caltech Women's Basketball Thanksgiving Tournament this past weekend. King helped the team to its first win in 41 games. The 53-44 triumph over Southwestern College on Saturday led to a third place finish for Caltech. Afterward, King was named to the All-Tournament team.

For the season, King is second on the team in scoring at 12.8, and is first in rebounding (9.3).

Swimming & Diving opens season with split against Whittier

The Swimming & Diving program opened its season last Tuesday against Whittier College.

The Men's team triumphed over its Whittier opponents with a score of 170-43. The team dominated with wins by Sophomore Daniel Oliver in the 50 and 100 yard Freestyles, Freshman Tim Curran in the 200 yard Freestyle and 100 yard Backstroke, and Senior Jason Lee in the 100 yard Butterfly. All three were also members of the winning 200 yard

Free Relay.

The Women's Team lost a nail-biter to Whittier, 108-114. Victories in the Three Meter and One Meter Diving events by Junior Rebekah Eason, in the 100 yard Freestyle by Senior captain Beth Dorman and the 100 yard Breaststroke by Lisa Seeman kept Caltech in contention until the very end.

The team will swim next this Friday-Saturday at the Claremont Mudd-Scripps Invitational. Their next home meet will be Saturday, January 8th against Pomona-Pitzer as they kick off their SCI-AC schedule.

Men's Basketball beats Life Pacific; loses to West Coast Baptist

The Caltech Men's Basketball team opened its season with a thrilling 51-49 win over Life Pacific College.

The win snapped a 47-game losing streak that dated back to a 67-66 win over Cooper Union College at the start of the 2002-2003 season.

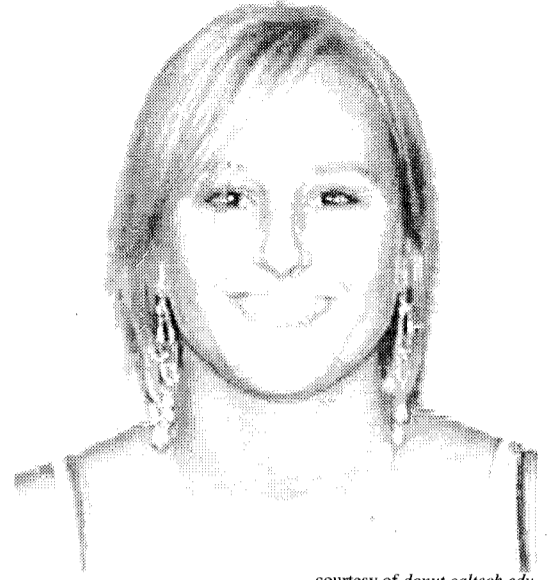
Freshman Tyler Drake came off the bench to score 17 points with three assists and two steals as Caltech held on for a one-point victory. Freshman Bryan Hires had 12 points.

The team took its first loss of the season on Saturday night against West Coast Baptist, losing 49-70. Junior Jordan Carlson led the team with 12 points, six rebounds and two steals.

Two games into the season, Carlson and Drake are tied for the team's lead in average scoring at 11 points a game. Carlson and Junior Day Ivy are tied in rebounding with an average of 5.5. Ivy also leads the team in steals with five.

The team plays its next game this Friday night at home against the University of Dallas. The game begins at 7:30 PM.

Women's Basketball hosts Thanksgiving Tournament; claims 3rd place



courtesy of donut.caltech.edu

Freshman Lindsay King wins her second Athlete of the Week honor for the year for her stellar performance in helping her basketball team to victory against Southwestern College.

Caltech's Women's Basketball team snapped a 41 game losing streak at their 2004 Thanksgiving Tournament this past weekend. The team defeated Southwestern College by a score of 53-44 in the Tournament's Consolation game on Saturday.

The win came after Friday night's 38-75 loss to Emerson College in the opening round. Emerson eventually made it to the Championship Game where they lost to Simpson University by just five points.

In addition to Freshman Lindsay King repeating as Caltech Athlete of the Week, several players had standout performances. Freshman Jessica Roberts tied for the team lead in scoring with a 13.5 average despite missing all but 16 minutes of the Southwestern game with an injury. Freshman Rene Davis averaged 10.5 points and 3.0 rebounds with seven assists and six steals. Junior Shelby Montague averaged 5.5 rebounds and three steals.

The program's last win dates back to January 8th, 2003 and was also against Southwestern College.

Women's Basketball plays next Wednesday night at Chapman University. Their next home game is Saturday, December 4th at home against La Sierra University. The game begins at 7:30 PM.

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Religious Freedom According to the ACLU

By SIMON QUE

It's Christmastime again. That means you can expect certain groups such as the American Civil Liberties Union to launch another round of legal attacks against public religious displays.

One of the latest was a case they brought against the city of Cranston, Rhode Island, for allowing privately owned Christmas displays to be placed on the Cranston city hall's front lawn. Their reasoning? The religious displays constituted a violation of the so-called doctrine of "separation of church and state" from the First Amendment of the U.S. Constitution. In this particular case, a federal judge ruled that such displays were in fact constitutional. But the mindset and reasoning of the ACLU and its ideological cousin groups deserve some examination.

The ACLU states on its website (www.aclu.org) that it is indeed motivated by the First Amendment. "The free exercise clause of the First Amendment guarantees the right to practice one's religion free of government interference. The establishment clause requires the separation of church and state. Combined, they ensure religious liberty. Yet assaults on the freedom to believe continue, both in Washington and in state legislatures around the country."

But the First Amendment actually says, "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof." Note the first word: Congress. This restriction applies to only Congress, not to any state or local legislative body. The ACLU has no First Amendment grounds for challenging decisions by state and local governments to erect religious displays.

The ACLU also uses the phrase "separation of church and state" to justify their stance. Surprise! This phrase is found nowhere in the Constitution. It is actually derived from a letter that Thomas Jefferson wrote to a group of Baptist pastors in early America. Jefferson wrote, "Believing with you that religion is a matter which lies solely between man and his God; that he owes account to none other for his faith or his worship; that the legislative powers of the government reach actions only, and not opinions, I contemplate with sovereign reverence that act of the whole American people which declared that their legislature should 'make no law respecting an establishment of religion, or prohibiting the free exercise thereof,' thus building a wall of separation between church and State."

We see that Jefferson used the expression "wall of separation between church and state," which has since been distorted into "separation of church and state." The phrase is used by groups such as the ACLU today in a very absolute sense, that there should be no contact whatsoever between government and religion. But this is actually not the case in Jefferson's writing: "I contemplate with sovereign reverence that act of the whole American people which declared that their legislature [emphasis added] should 'make no law....'" Jefferson made it clear that the First Amendment ("the act of the whole American people") restricts only Ameri-

cans' common national legislature, Congress. The laws of state legislatures did not face such a legal restriction from the Constitution. Jefferson called this particular restriction on Congress a "wall of separation between church and state." This is a far cry from the absolute separatism endorsed by the ACLU. Indeed, it is a very limited restriction, separating only a particular part of the state, Congress, from legislating against religious freedom.

But constitutionality aside, the ACLU and other similar groups seem to believe that their absolute separation is a good idea. They do this in the name of religious freedom and liberty. "The ACLU will continue working to ensure that religious liberty is protected by keeping the government out

is the definition of religious freedom that seems to be espoused by many separationists, judging from their actions. Instead of defining it as the freedom to express one's religious beliefs, they define it as both that and freedom from feeling marginalized by the government about one's religion.

That is ridiculous. When someone becomes a government official, he doesn't suddenly stop becoming a private individual in addition to being a state official, so that everything he does is considered an official act of government. If he only spoke English, does that make English an official state language? Of course not! Does he make non-English speakers feel like second-class citizens? Maybe he does and maybe he doesn't. It depends on how much

non-English speakers care. It is unreasonable to expect a government official to avoid intimidating the lowest common denominator, which is determined by personal whims that might change from day to day.

The same is true when it comes to religion. It is no violation of religious freedom if people feel uncomfortable with a government official's religion. Some people are less comfortable with public officials' religions than others are. To expect government officials keep down personal religious expression for fear of offending someone is asking for too much. Individuals are free to ignore his personal practices and go about their daily activities.

In the case of the Nebraska high school, it is also no violation of religious liberty for the same reason: if everyone present is okay with the prayer, then there is no problem; if a few people in the ceremony are offended or upset by the prayer, they are still free to ignore it, and free to complain to the school or to boycott the graduation. There is no need to bring in litigation against a majority when the minority's rights aren't at stake -- and they aren't in this case. Plus, restricting students from publicly praying is inherently anti-freedom.

Thomas Jefferson also wrote, "The legitimate powers of government extend to such acts only as are injurious to others. But it does me no injury for my neighbor to say there are twenty gods, or no God. It neither picks my pocket nor breaks my leg." Great insight. Freedom means one can choose to do something without threat of force from the state or other individuals. It doesn't mean one must be protected from all emotional and psychological discomfort that comes witnessing someone else's religious expression. It is freedom to do something, not "freedom from something."

Groups like the ACLU should keep this in mind and stop spreading false information about the First Amendment and about the meaning of freedom and liberty. It obscures people's understanding of freedom, especially that of youths brought up in public schools, where restrictions on their religious expression in the name of freedom gives them the wrong idea about what liberty really means. And it dampens the holiday spirit, too.

In the meantime, have a merry Christmas, everyone.

"Freedom means an individual can choose to do something without threat of force from the state or other individuals. It doesn't mean they have to be protected from all emotional and psychological discomfort that comes witnessing someone else's religious expression."

of the religion business," says its website.

What exactly is their definition of freedom and liberty?

An episode in 2000 might provide an answer. That year, the ACLU threatened to litigate against a Nebraska public high school for permitting some of its students from leading benediction and prayer at graduation. Then a school board member decided to stick it to the ACLU by reciting the Lord's Prayer during the ceremony, without asking anyone else to follow him.

The ACLU filed a lawsuit against the school board as a result. Can you believe that? The ACLU wasn't opposing policies that forced students and teachers to teach religion or to take part in religious activities. Instead, it opposed the high school's granting of permission for students to publicly pray and the school board member for publicly praying.

From a financial perspective, even though this was a public school, funded by the state, it was individuals who were engaging in public prayer. Prayer doesn't cost anyone a cent. This was not an issue of government funding of religious activities, then.

Another organization, Americans United for the Separation of Church and State, also has something to say about this. AU's executive director Barry Lynn stated in an interview in October, "When [Attorney General] John Ashcroft has prayer sessions at the start of every day in the Justice Department, it is not, in my view, a free exercise of religion question. It is a question of whether he has given the appearance, in his official capacity as Attorney General, that he is promoting Christianity and making others feel like second-class religious citizens if they do not participate." So there



courtesy of Reuters

To avoid the rush of Christmas shopping, stay home and make your own presents instead.

Holiday Shopping Advice From the Guru of Advice

By HAMILTONY FALK

The Christmas season is getting here (or has gotten here, depending on how much your perceptions are decided by commercialism) and many people I have been asking me: "Hamiltony, I need a gift for my friend or loved one, but I don't know what to get them. What should I do?" (1) I usually suggest waiting til just after Chanukah, but before Christmas, and converting to Judaism. Since many people find this suggestion both offensive and not very practical, I've decided to share with everyone my suggestions for actual gifts to give people you may or may not like during the holiday season.

For the cheap people out there (like myself) you might want to avoid spending any cash, and just give someone a home-made present. These are great, because they're free for you, and are, um, meaningful, because of the thought. Or something like that. I'd recommend things like burning a CD with music you've legally acquired without using some sort of internet piracy program, making a gift of souvenirs you don't want anymore, or writing a poem or story. Plagiarism works there too, assuming the person receiving the gift will never find out. Other free things you can give are things to "remember you" with. A lock of hair, a wallet sized photo, or even a pulled tooth can help someone you don't see all the time to keep you in their thoughts, even if they don't want to. There's always the option of just passing on gifts you don't want, a convenient way to both satisfy someone else, and get rid of that useless solar powered electric tooth brush your cousin got you last year.

If you think you're ready to take the next step to something that costs money, but no thought, there are plenty of gifts here too. If you're shopping for a child, what they really want is a Pony.

And Ponies are expensive, so I'd recommend a videogame, the more violent the better, since this will teach the child about the real world. For adults, things are trickier, unless you're rich. If you're rich, everyone enjoys a car, most women will find expensive jewelry "thoughtful" and most men don't like you anyway, you rich snob. However, for those of us who are a little more pinched for cash, Art is always a safe gift, since no one can admit to not liking it without seeming uncultured, and it's often very hard to tell the difference between a 10 dollar painting and one that you stole from the Metropolitan Museum of Art. Then of course there is one of the best ways to give someone a gift without having to spend any thought on it at all. What you do is find an item they want, and then donate the cost of it to Charity. When you tell the person this, you get the pleasure of depriving them of what they want, but also knowing that it was for a (tax deductible) good cause, and if they're unhappy with it they're a fundamentally bad person to be pitied. If you're a complete sleaze, or very poor, you can also just lie about the donation, and keep the money.

If you're looking for a gift and willing to spend money, and put thought into it, then I guess you don't need me to suggest any. But I will give you an idea to get you on your way. Space pants.

Now that your holiday shopping is all planned out you can enjoy the holidays, and if you're feeling up to it, leave a little something for me.

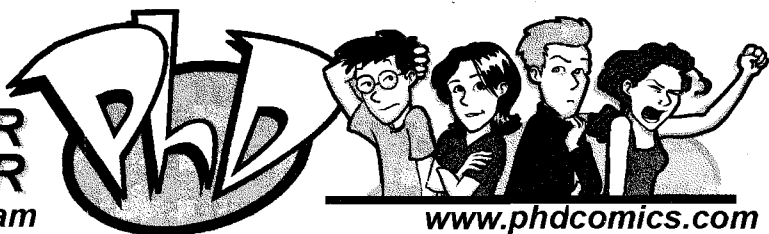
(1.) No one actually asked me this, but I bet some people wanted to.

(Comments or requests? E-mail HamilTony at HamilTony@gmail.com)



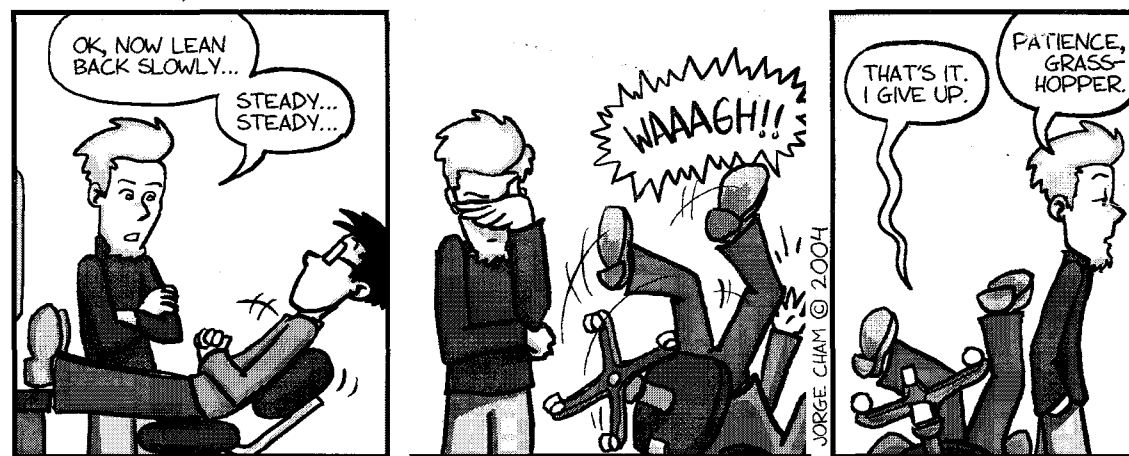
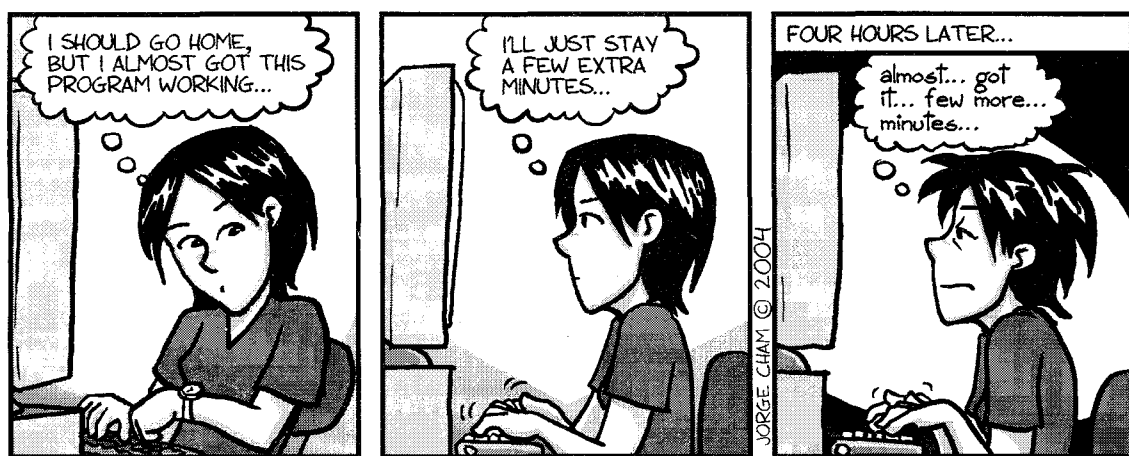
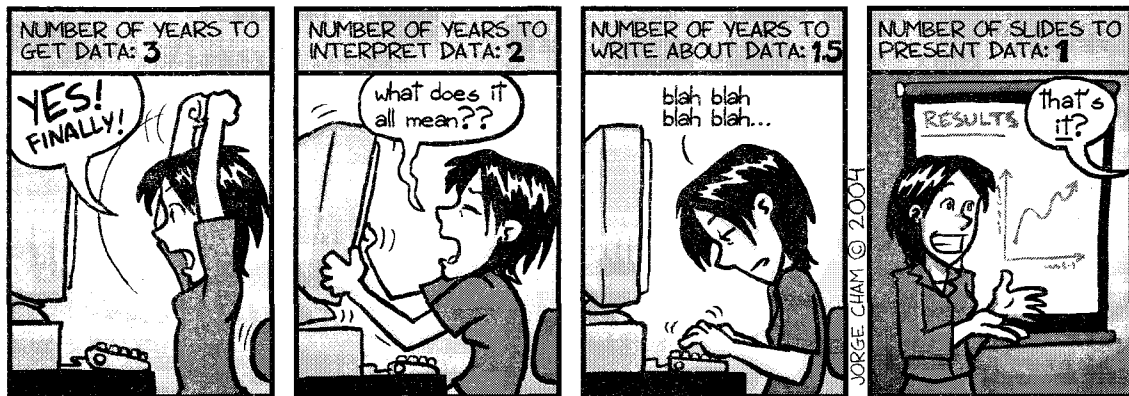
courtesy of www.themccallions.com

PILED HIGHER AND DEEPER
by Jorge Cham



www.phdcomics.com JORGE CHAM © 2004

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ASCIT Minutes: Funding for House Pranks, Bagels

November 23, 2004

Present: Meng-meng Fu, Galen Loram, Shaun Lee, Kelly Lin, Kim Popendorf, Corinna Zygourakis

Absent: Ann Bendfeldt, Ryan Farmer (out of town), Claire Walton

Introduction:
1. Call to Order, 12:15 PM
Other Business:

2. Galen Loram notes that Monday morning bagels were a huge success! All of the bagels were gone in under an hour. The amount of cream cheese and chocolate chip bagels will be increased in the future.

3. Galen also reports that the Honor Code Committee for the Student Faculty Conference will invite three graduate students to participate. If this goes well, graduate students may be invited to participate in additional committees of the Student Faculty Conference in the future.

4. Meng-meng Fu reports that the Student Faculty Conference is scheduled for April 12, 2005.

5. Kim Popendorf notes that Avery House will not have an official athletics (Ath) team this year. Avery will have unofficial scrimmages with the seven houses. Next year, however, Avery will have an official Ath team. The IHC is currently discussing whether graduate students will be allowed to play on Avery's teams.

Upcoming Social Events:

6. The next ASCIT midnight donuts will be on Wednesday, December 1. Hope to see you there!

Meeting adjourned 12:35 PM.

November 30, 2004

Present: Ryan Farmer, Meng-meng Fu, Galen Loram, Shaun Lee, Kelly Lin, Kim Popendorf, Corinna Zygourakis

Absent: Ann Bendfeldt, Claire Walton

Guests: Todd Gingrich, Tobey Huang

Introduction:

1. Call to Order, 12:13 PM

Money Requests:

2. Tobey Huang asks to take Professor Ken Binmore out to lunch at the Ath. Vote: 5-0-0 (ap-

proved).

3. Todd Gingrich requests \$100 to replace lights for the annual Lloyd House prank to transform Millikan Library into a giant Christmas tree. Vote: 4-0-1 (Shaun abstains because he feels that this event is a house-based one that should not be funded by ASCIT).

Other Business:

4. The BoD discusses whether ASCIT should fund house pranks, such as the Lloyd House annual Christmas tree or a recent prank in which Scurves turned the apartment of the Ricketts RA into a mini disco. The issue remains open-ended, although several members express their desire for the Lloyd lights to be available to other houses that may need them for various occasions.

5. Galen Loram asks BoD members to look at the bylaws and consider whether any changes or updates need to be made. The BoD should bring suggestions to the next meeting.

6. Kim Popendorf and Corinna Zygourakis note that they attended a recent meeting on gender issues. The goal of the task force is to come up with an education plan for the Caltech campus centered on gender issues. Students with opinions or ideas about gender issues should email Kim at kimpop@caltech.edu.

7. Corinna notes that the search for an interim ASCIT secretary is underway. Three candidates will be interviewed this week, and a replacement secretary will be selected by the ASCIT ExComm before the end of the term.

8. Kim reminds everyone to take the Rotation Survey, which will be posted on the donut website until next Friday, December 10!

Upcoming Social Events:

9. Galen apologizes for the lack of bagels this past Monday and notes that he will provide bagels on Wednesday, December 1 instead. Monday morning bagels will resume again at the beginning of second term!

10. The next ASCIT meeting will be on Tuesday, December 7, at 1:30 pm, instead of noon.

Meeting adjourned 12:30 PM.

Respectfully submitted,
Corinna Zygourakis

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Applications for Fall 2005 are due by February 1, 2005. All admitted doctoral students are fully funded. To find out more visit us today at <http://www.cee.duke.edu>, call 919-660-5200, or write to: Department of Civil & Environmental Engineering, Duke University, Durham, NC 27708.



DECEMBER EVENTS AT THE WOMEN'S CENTER

Best of luck on your finals and best wishes for a fun and relaxing winter break! Hope to see you soon, The Women's Center

End of the Year Social with Lesbian, Bisexual, Trans, and Questioning Women and Allies group

Where: Restaurant Haile, 1030 E. Green St., www.restauranthaile.com

When: Friday December 10th from 5:00-7:00pm

Please RSVP to candacer@caltech.edu

Reel Women Series: Goddess Remembered

Date: Thursday, December 9
Time: 12-1pm

Where: Women's Center, Center for Student Services

Pizza lunch provided

Exploring pre-Christian goddess worship religions, this documentary incorporates archaeology, art-history, and religious scholarship into a discussion of the loss of respect for the earth and life, and the rise of patriarchal society. Each month, the Reel Women Series shows different movies covering a wide variety of issues from the accomplishments of women in history, women across the globe and from diverse backgrounds, the struggles and successes of women in science and engineering, and women overcoming negative stereotypes and barriers.

Women's Health and Wellness Series

December 16 - Feng Shui Your Way To Balance

Time: 12-1pm

Location: Women's Center, Center for Student Services.

Pizza lunch provided.

Join us as lifestyle coach, author, and feng shui consultant, Pat Sendejas, describes the Chinese wisdom of feng shui, and learn how space planning, color enhancement, and the use of positive energy enhance your environment and overall well-being! RSVP required! To sign-up please call ext. 3221 or email: wcenter@studaff.caltech.edu

THE MONTICELLO FOUNDATION AND ROBERT AND DELPHA NOLAND SUMMER INTERNSHIPS 2005

The Deans' Office is accepting proposals for the Monticello Foundation and the Robert and Delpha Noland Summer Internships. Three to five Caltech undergraduate women (current freshmen, sophomores and juniors) will be given an opportunity to participate in research projects outside the Caltech-JPL community for ten weeks during the summer. Each student will receive a \$5,000 stipend. Applicants are required to identify the projects in which they wish to participate. All arrangements with the principal researcher will be the responsibility of the student.

Interested? Identify a sponsor for your experience at a research facility for a ten-week period. In a short essay, describe your project, and submit it to the Deans' Office, 210 Center for Student Services, along with two faculty recommendations.

Proposals are due Tuesday, March 1, 2005.

Interested in Music?

Music Offerings in Winter Term
Mu27 - Fundamentals of Music Theory and Elementary Ear Training

Want to better understand how music works? Want some of the tools to help you write your own music? Want to improve your sight-singing ability? Want to be better at hearing intervals and chord quality (major, minor, diminished, augmented)?

Mu27 is the first of three music theory courses (the entire three-course series will be offered in 2005-2006 so students can take one or two terms this year and one or two next).

Classes consist of lecture/demonstration, in-class theory and listening exercises and sight-singing practice.

Concert field trips to hear the L.A. Phil at Disney Hall and the Pasadena Symphony

Students with some music performance or theory background may be excused from Weeks 1 - 4, depending on ability

M / W 10:00 - 11:30

Mu35 - Music of the Late Romantics

An exploration of the music of the late-19th century. Learn about the music of:

The Nationalists: Dvorak, Smetana, Mussorgsky, Borodin

The Progressives: Wagner, Liszt

The Conservatives: Brahms, Bruckner, Tchaikovsky, Verdi

Transitional Figures: Mahler, Strauss, Debussy

Class consists of lecture, demonstration, listening, video presentations

Concert field trips to hear the L.A. Phil at Disney Hall and the Pasadena Symphony

M / W 1:00 - 2:30

Music experience or background not required for either course

Inquiries: Professor Neenan: neenan@hss.caltech.edu

Trim-Trimming Contest

The Tech Express will be hosting its second annual Tree Trimming contest. The contest starts on November 29th, and judging will take place on December 8th. Last year's winners are on display. Wonderful prizes will be given out to the winner.

Ballroom Dance Club

Our intermediate international style class is taught Thursdays by Caltech's own Tudor Stoenescu and Gwyneth Card. Class begins at 8 pm in Winnett Lounge; the first hour will cover standard and the second will cover latin. The series runs 8 weeks and the cost is \$25 for Caltech students, \$40 for non-students.

The Ballroom Dance Team will also be offering Team Practice, held each Tuesday in the Braun Gym multipurpose room from 9 to 11 pm. The practice will feature the assistance of a professional coach so that team members can get advice and tips to improve their dancing. Team membership is required and there is a \$5 fee to enter the gym if you do not have Caltech/JPL issued ID.

Join the Ballroom Dance Club on Saturday, December 11 in Winnett Lounge for our end-of-term blow-out holiday dance party! We'll begin at 8:30 pm with a mini-lesson followed by general dancing from 9 pm until LATE. As always you can get in scot free, and no partner or experience is necessary! Although certainly not required, please feel free to get into the holiday spirit and bring along a new, unwrapped toy as we will be collecting donations for the "Toys for Tots" Foundation. Hope to see you there!

Scholarships

Citizens for Global Solutions is holding a FLASH Movie Contest "Global Solutions for a New Year." The top prize is \$1,000. Please visit: <http://advocacy.globalsolutions.org>

The Minerals, Metals & Materials Society "TMS" offers a variety of scholarships. To preview scholarship eligibility and deadline information visit:

www.tms.org/Students/Award-Programs/Scholarships.html

The Glamour Magazine's 2005


Top Ten College Women Competition has begun. The competition is open to all full-time female juniors regardless of major or GPA. Applications are available at: www.us.glamour.com/images/features/04011application.lo.pdf All entries must be postmarked by February 10, 2005.

The Mensa Education & Research Foundation Scholarship Essay Contest is available to students who will be or are enrolled in any accredited U.S. institution of post-secondary education for the

2005 fall term. Scholarships range from \$300 to \$4,000. Additional information and the entry form are available via the internet: www.ocmensa.org. The deadline to apply is December 31, 2004

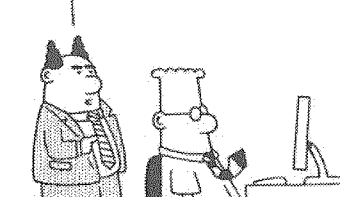
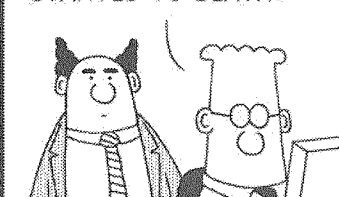
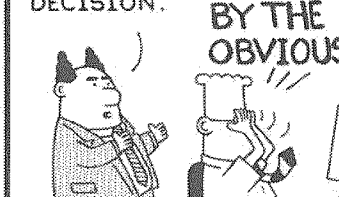
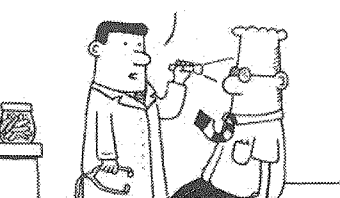
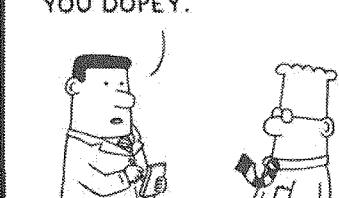

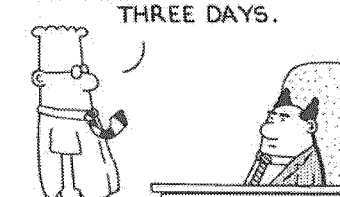
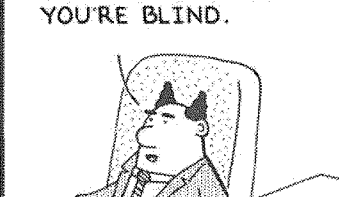

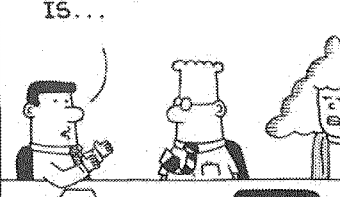
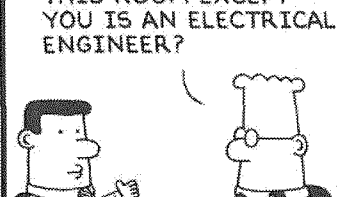
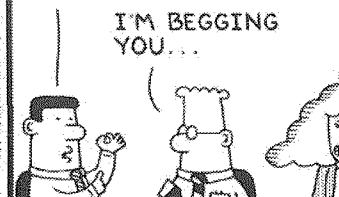
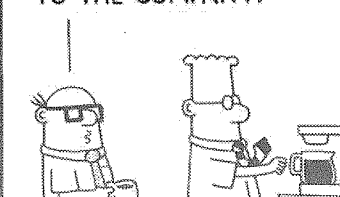
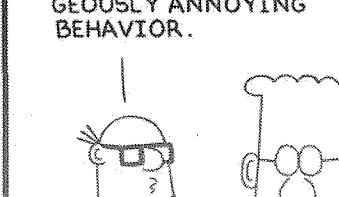
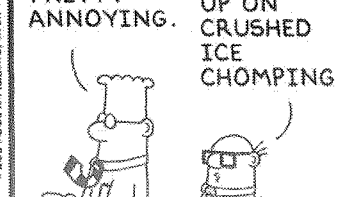
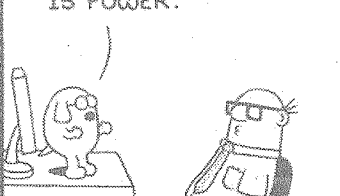
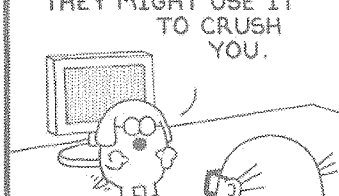
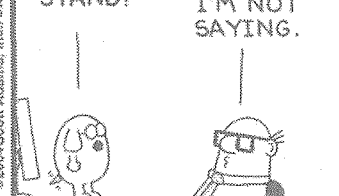
The Pauletta and Denzel Washington Family Gifted Scholars Program in Neuroscience is available to one undergraduate and one graduate or medical student. The primary purpose of this award is to mentor and encourage young, potential scientists and physicians to enter the field of neurological

research. Additional information regarding the program as well as the application may be viewed by going to www.cedars-sinai.edu. The deadline to apply is January 1, 2005



DILBERT®

BY SCOTT ADAMS

<p>TRY WORKING AROUND THE PROBLEM.</p> 	<p>THANK YOU FOR THAT VALUABLE ADVICE. I HAD PLANNED TO STARE AT MY SCREEN UNTIL I STARVED TO DEATH.</p> 	<p>GATHER DATA BEFORE MAKING A DECISION.</p> <p>GAAA!!! I'VE BEEN BLINDED BY THE OBVIOUS!</p> 
<p>IT'S TEMPORARY BLINDNESS CAUSED BY YOUR BOSS'S FLASHES OF THE OBVIOUS.</p> 	<p>LET DOGBERT GUIDE YOU FOR A FEW DAYS. AND HERE'S A PRESCRIPTION TO MAKE YOU DOPEY.</p> 	<p>NOW?</p> <p>WHATEVER.</p> 
<p>YOUR BLINDING FLASHES OF THE OBVIOUS MADE ME SIGHTLESS FOR THREE DAYS.</p> 	<p>I HOPE YOU DIDN'T DRIVE YOUR CAR. YOU'RE NOT SUPPOSED TO DO THAT WHEN YOU'RE BLIND.</p> 	<p>GAAA!!!</p> <p>I'M UPSETTING YOU.</p> 
<p>LET ME EXPLAIN WHAT VIDEO COMPRESSION IS...</p> 	<p>WOULD YOU STOP IF I POINTED OUT THAT EVERYONE IN THIS ROOM EXCEPT YOU IS AN ELECTRICAL ENGINEER?</p> 	<p>ZEROS ARE ROUND AND FAT COMPARED TO ONES...</p> <p>I'M BEGGING YOU...</p> 
<p>I'VE DECIDED TO BECOME INDISPENSIBLE TO THE COMPANY.</p> 	<p>INDISPENSIBLE EMPLOYEES CAN GET AWAY WITH OUTRAGEOUSLY ANNOYING BEHAVIOR.</p> 	<p>YOU'RE ALREADY PRETTY ANNOYING.</p> <p>I'VE BEEN READING UP ON CRUSHED ICE CHOMPING.</p> 
<p>REMEMBER: KNOWLEDGE IS POWER.</p> 	<p>SO NEVER TELL PEOPLE ANYTHING BECAUSE THEY MIGHT USE IT TO CRUSH YOU.</p> 	<p>DO YOU UNDERSTAND?</p> <p>I'M NOT SAYING.</p> 

Admissions Seeks To Improve Reputation

Continued from Page 1, Column 2

like Caltech.

The house system is also a special aspect of undergraduate life here. Describing a recent dinner he had during Lloyd House's fall term formal, Mr. Bischoff commented on the way people "know each other... there's something very special. People know everybody and call each other by name. It's a very different environment from a typical college."

Commenting on the admissions process, Mr. Bischoff emphasized that the Institute seeks to admit people based on what they will do. "Given the opportunities at Caltech, who will you be when you walk out the door into the world and become a Caltech alum? There's this mythology of admissions. Prospective students talk about admissions as if it's all about what they have done. But admissions is like the stock market: we don't care about what you've done. We care about what you will do. We're also like the stock market in that previous performance may indicate future performance."

Mr. Bischoff also mentioned

that 75% of the class of 2008 also applied to MIT. Although Mr. Bischoff noted that not as many high schools students are aware of Caltech as there should be, 80% of the current undergraduate came from a public high school.

"Admissions people are part-anthropologists, studying the culture of the place and thinking how to explain it. It's great to watch this interaction here. The students here are so bright and talented and focused on what they're doing," Mr. Bischoff observes.

The amazing research being conducted here also aids the admissions committee in attracting students. Describing his recent tour of the T-5, the 200-foot long super-sonic wind tunnel on the fifth floor of Guggenheim, Mr. Bischoff exhibits the excitement of the research process.

Mr. Bischoff emphasized that "we're one little piece of Caltech, which is a large enterprise. The continuing challenge is to explain this place to people who don't have much of an understanding of what an amazing place Caltech is."



K. Peng/The California Tech

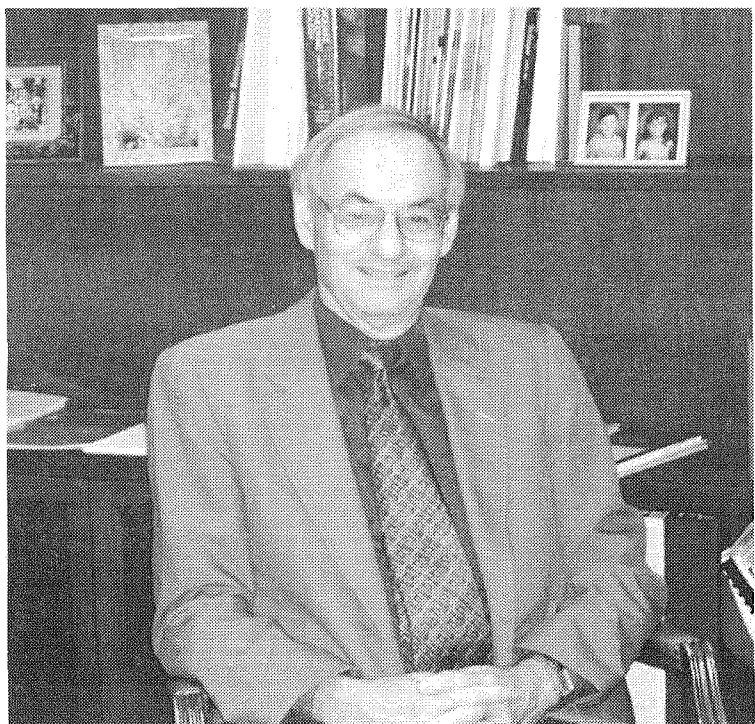
The Athenium is made into the Emerald City and the Olive Walk into the Yellow Brick Road as part of the annual Blacker Frosh Project.

AIDS Memorial Quilt Sections Displayed for World AIDS Day



K. Peng/The California Tech

Sections of the AIDS Memorial Quilt are designed to remember victims of AIDS. Sixty four panels, of over 45,000, were displayed in Brown Gym on December 1-3 in recognition of World AIDS Day.



L. Tran/The California Tech

Provost Paul Jennings says that good rankings confirm that Caltech is headed in a good direction.

Rankings Unlikely To Influence Any Change

Continued from Page 1, Column 5

"For a small school focused on science, it is not realistic to be listed number one worldwide," Goodwin said.

In another survey performed by scholars of the institute of higher education at Shanghai Jiao Tong University, Caltech was placed sixth. This survey was based on six criteria, such as the number of research citations by academic staff, the number of Nobel prize or Fields prize winners among the staff and alumni, and how well the institution performs academically relative to size.

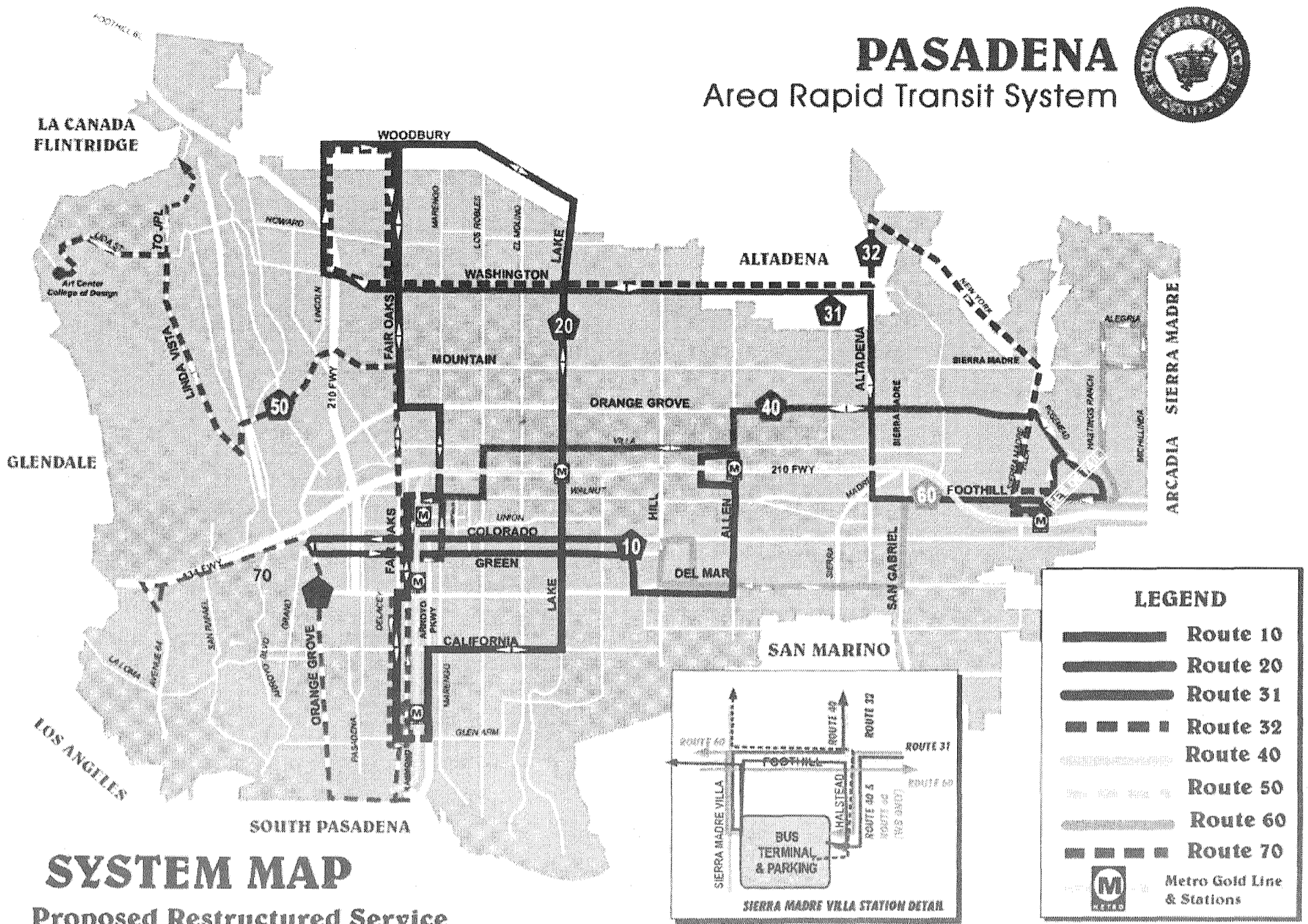
Caltech was ranked behind Harvard, which again clinched the top spot, Stanford, Cambridge, Berkeley, and MIT. It is placed directly above Princeton, Oxford, Columbia, and Chicago. American universities dominated the upper parts of the list.

While surveys such as these and that done by the U.S. News and World Report each year are influential among the general public

and might influence admissions for the coming year, Caltech will not respond to the results with any change. However, the administration does consider the results of more serious surveys, such as that performed every ten years by the National Academy of Science and the National Research Council. Surveys such as this consider admissions standards and results, the reputation of faculty, the success of graduates. They concentrate on the goals of Caltech and the qualifications of the people at the institution.

Responding to more serious surveys, Caltech may consider where the school is placing emphasis and the areas where it wishes to be perceived as strong but is not. Furthermore, they provide reassurance and recalibration of internal judgments, determining how well the opinions of the members of the Caltech community match those of the public.

Proposed ARTS Route Structure



SYSTEM MAP

Proposed Restructured Service

Proposed changes to the Pasadena Area Rapid Transit System include changing Route 10 to stop on Wilson and Del Mar and provide direct access to the Gold Line station on Allen. The change will make it easier for students to reach LA using the Gold Line. Unfortunately, the Route will be cutting hours to save money.

Pasadena ARTS Proposes Route Changes to Bring Buses Nearby

By BRIAN ZHOU

Planned revisions to the Pasadena Area Rapid Transit System (ARTS) will increase service to the Caltech campus. A redesign of Route 10 will move stops to just outside campus on Del Mar and provide direct access to Allen Station on the Gold Line.

In a presentation entitled "Proposed Service Improvements to the Pasadena ARTS", the Pasadena Department of Transportation delineated thirteen modifications before the city's Transportation Advisory Committee. Of these thirteen, seven were endorsed by the Advisory Committee, among which the keynote was the reconfiguration of Route 10. In late November, the City Council green-lighted the endorsed proposals and set them to go in to effect in February, 2005.

Irma Cruz of Security and Parking Services played a crucial role in lobbying for expanded coverage of the campus. She explains, "It just didn't make sense why the ARTS buses weren't coming to campus and we were interested in opening up discussion." Initially, the closest stops were on Green and Lake, but with the rerouting of Route 10, new stops on Wilson and Del Mar on the west and north edges of campus will greatly cut the distance to ARTS access.

Another major motivation,

reveals Cruz, was no-transfer access to the Gold Line, the metro-rail to downtown Los Angeles and Union Station. Currently, students must walk to Lake to take Route 20 to either Fillmore or Lake Stations. However, due to the infrequent nature of Route 20 at around thirty minutes between buses, most students skip the buses altogether and prefer biking to the stations themselves.

Initially, simply a straight loop around the two major thoroughfares of Colorado and Green, Route 10 now cuts across Wilson rather than Hill and then travels down Del Mar before finally turning north to Allen and looping at Allen Station. The presentation recommended this reconfiguration specifically for its "connection to Caltech" and "service to Allen Station." Moreover, by turning onto Wilson rather than Hill, the route avoids running into or creating jams at the high-flow intersection of Colorado and Hill.

However, with the added miles of the extension, the frequency of Route 10 will be reduced from 12 minutes to an acceptable 21 minutes between buses. Moreover, service will end at 8 PM instead of at 10 PM on Friday and Saturday nights, resulting in an annual savings of \$27,000. Statistics support this cut as minimal impact, for only four to five riders use the Route 10 buses per hour during

the scrapped time frame.

Cruz explains, "There was no resistance [to the changes], just government processes. The Department of Transportation was very enthusiastic that we were looking for service, since it meant interest." Praising the receptiveness and inspired work of the transportation officials, she adds, "The city of Pasadena wants Pasadena to be a car free city. The ultimate goal is to promote that." Indeed, the overhaul of the ARTS system aimed to increase performance to reflect changing ridership patterns and new demand. One modification that perhaps will have little consequence on the late-waking Caltech campus is the upping of the start of service for several routes including Routes 10 and 20 to 6 AM from 7 AM with the goal of reducing the morning rush.

The presentation billed Caltech as "a major trip generator." Indeed, with the majority of the restive student body without cars, this assumption appears well founded. However, due to the history of neglected service, some Caltech students are currently unfamiliar with the Pasadena ARTS. Sophomore Ken Ho, who says he usually walks to Old Pasadena, responds to the closer stops of Route 10, "Yeah that sounds good. It's better than walking down there." Junior Tim Barnes, however, raises some doubts. "For Caltech students, when you want to go somewhere by yourself, you don't have the time. When you go somewhere in a group, you can usually find someone with a car."

Nevertheless, with these improvements in accessibility and usefulness, ARTS certainly has become a highly practical alternative and will become more so with positive interactions and spread of knowledge. Additionally, frequent use of ARTS will contribute towards a more pleasant and harmonious Pasadena community in contrast to the volatile, congested streets of LA.

Finally, Cruz offers several tips on getting around via public transportation. "The Bookstore sells monthly passes. If you present your Caltech ID, you get \$20 off the purchase price." She notes that this and other pertinent information are found in the *Caltech Transit Guide* distributed at the beginning of the year or obtained anytime from the Security and Parking Services office, Bookstore, or Center for Student Services. Another useful resource is the Metro Trip Planner on the LA Metropolitan Transportation Authority's website.

Recently, freshmen Michael Grinolds and Nixon Li used the site to plan a trip to Staples Center. They describe the sub-one-hour one-way trip on an express bus as impressively smooth and at the cost of a couple bucks per person, a good deal compared to the upwards of \$15 shelled out for parking near the arena.

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