



GALEX Sheds Light On Galaxy Formation

By CHRISTINE CHANG

Two galaxies dance past each other, pulling streamers of gas from the other like outstretched arms. Within the ribbons of gas, flashes of light burst forth from the mists of the gas, signaling the birth of a star. Massive enough to be self-gravitating, some of the new stars even went on to create new galaxies within the universe.

Before, optical telescopes could not observe these types of events, but the new Galaxy Evolution Explorer (GALEX) project, headed by Professor Chris Martin, which has recently begun surveying the sky, can now map such occurrences using the ultraviolet spectrum.

Using a telescope, optics and two large detectors with the ability to count individual photons, GALEX, which is a National Aeronautics and Space Administration mission, will take shallow images of the entire sky and deep-

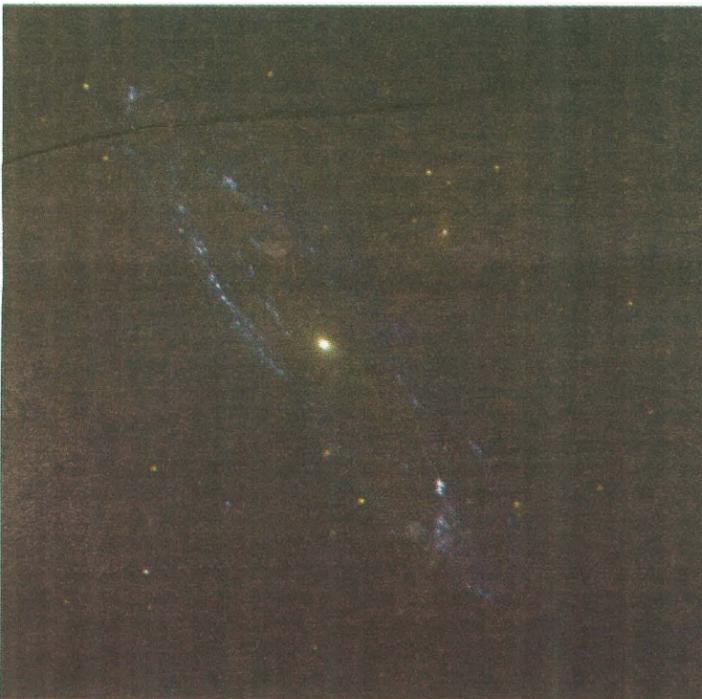
er images of smaller portions of the sky using the ultraviolet (UV) range of the electromagnetic spectrum, from approximately 1000 to 3000 angstroms in wavelength.

Using this spectra of portions of the sky and combining this information with the information previously received from the ground, they can explore the mysteries of star formation. The field of view of the GALEX equipment is very large, about two times the diameter of the moon.

"With this range, we can observe galaxies, stars, quasars and huge numbers of objects," said Martin, the principal investigator on GALEX. By surveying a large number of galaxies, astronomers have more objects which they can compare to determine the answers to their questions.

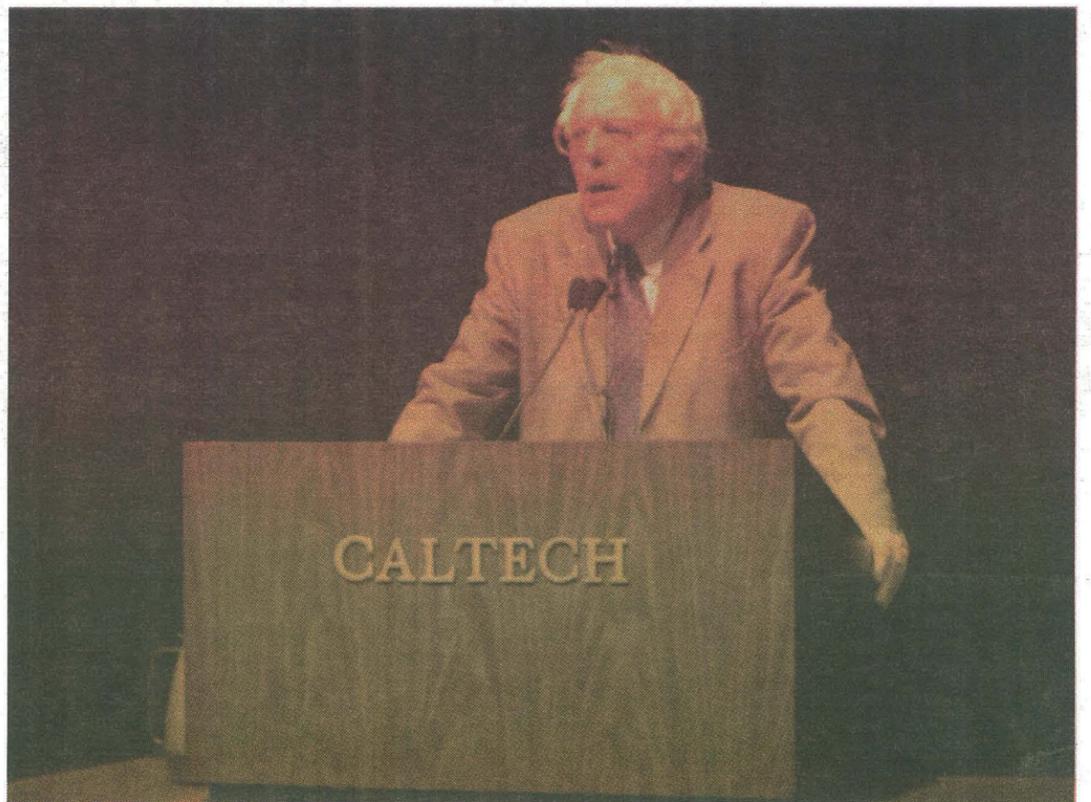
Through the information they obtain, the GALEX team hopes to be able to glimpse back through

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Courtesy of www.galex.caltech.edu

GALEX created this image of Messier 31 in the Andromeda galaxy from 10 separate images taken in September and October.



L. Tran/The California Tech

Bernie Sanders, a Vermont Congressman, is the only socialist in the House of Representatives. He continues to champion America's "strong, democratic heritage."

Halt Right-Wing Advance; Fight Patriot Act Part of Sanders' Plan

By ROBERT LI

Bernie Sanders, at-large House representative and independent from Vermont, came to Caltech last Thursday to share his views on current political situation in America. In 1991, Rep. Sanders was the first independent to be elected to Congress in 40 years and has been re-elected 5 times since. He is the founder of the House Progressive Caucus and is one of only 66 House members to vote against the USA Patriot Act.

Opening with the statement that his mission is to "stop the advance of right-wing politics in the US", Sanders talked about a wide range of issues from the economy to health care to the situation in Iraq. According to Sanders, his major concern is the loss of America's "strong, democratic heritage."

Voter turnout has been the low-

est ever. In the next presidential election, less than half of the people will vote. Of voters under 25, 3/4ths do not vote. Similar statistics apply to low income people and working class people. Sanders blamed a combination of media influence and the existing political culture for this problem.

From Sanders' perspective, the most significant issue in America today is the decline of the middle

class. The average American is working for longer hours and lower wages than 25 years ago. We have the longest work hours of any industrialized nation as well as the highest level of childhood poverty.

Sanders demands to know and he says that we should also demand to know why the middle class is shrinking. He also says we

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Benzer, Gray Receive Franklin Recognition

By DIANA LIN

Two professors, Seymour Benzer and Harry Gray were among the eleven laureates announced this year for the Franklin Institute Awards. This prestigious award has been presented to scientists and technologists who have made significant contributions to society since 1824. Dr. Benzer will be awarded the Bower Award and Prize for Achievement in Science and Dr. Gray will receive the Benjamin Franklin Medal in Chemis-

try at the awards event in Philadelphia on April 27. The award is one of the most prestigious scientific honors in the world and is often seen as an indicator for future Nobel prize winners.

Dr. Benzer is the Boswell Professor of Neuroscience, Emeritus, at Caltech. He majored in physics at Brooklyn College and studied solid state physics at Purdue. After being sparked by an interest in molecular biology, he took a leave

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Baltimore Outlines Challenges Posed by American Visa Policy

By CHRISTINE LEE

You have just been accepted to Caltech and you are very excited. You dream of unparalleled scientific opportunities and your role in advancing technology. Being a student from China, you learn that in order to cross the border to come to the US, you should apply for one of those visas according to your national policies.

Naturally, you stand in line waiting to be handed the visa just a little while before school starts, perhaps a month, or two month before. "This shouldn't take too long," you think, "I am just an innocent scientist." You know that the red tape did not use to be this long.

After September 11, the US government has added more precautionary security measures in

granting access to United States which require that every person who is apply for a visa to be interviewed individually. And then the verdict came: "Security Advisor Opinion" is requested. Little did you know that this would be a process that would prevent you from entering into the US for months.

This has been a real concern for many international students. To address this issue, Dr. David Baltimore, Professor Marteza Gharib, Marjory Gooding held a discussion panel expounding their views on how this impacts science and what they are doing to help the students.

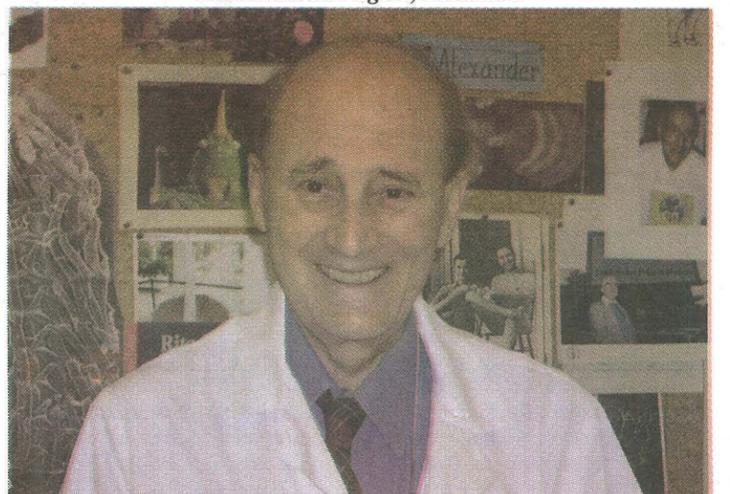
It might be difficult for US citizens to imagine the extent of the impact of this visa policy. To understand the problem, it is helpful to know some details of Ameri-

ca's foreign policy. In general, a visa is a document issued by the U.S. Department of State that, with few exceptions, can only be obtained by visiting a U.S. Consulate abroad and submitting a visa application. It is issued once the U.S. Consulate approves an application.

A visa specifies three things: type of visa that the student/scholar has obtained, time frame in which an applicant can enter the United States and the number of entries a student/scholar can make into the U.S. during the time frame specified on the visa.

Reciprocity is a policy that takes into account how American travelers are treated when they are trying to gain access to another country. Based on this concern, a table is generated in which all

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L. Tran/The California Tech

Dr. Seymour Benzer, the Boswell Professor of Neuroscience, will receive the Bower Award for Achievement in Science.

One Act Theater To Debut Friday at SFL

By KAYTE FISCHER

Over dinner one night in November, the idea for One Act Theater (OAT) was born. Director Kim Popendorf, '06 and producer Kayte Fischer, '05, agreed that many aspects of Caltech theater were not accessible to enough undergraduates. Some people were too busy to commit to whole plays, others simply did not know theater occurred at Caltech and some wanted to get some experience with directing.

An Evening of One Act Theater will be performed Friday, April 23rd and Monday, April 26th at 7:30 pm. The amphitheater outside Sherman Fairchild Library will be outfitted with lights, speakers and food, acting as a distinctive stage. Tickets are free, since the production was made possible by a generous grant from the Moore-Hufstедler Fund. However, OAT is asking for donations so that they can produce more one act events.

OAT was founded to reach out to students and to get as many involved as possible. These plays would be completely produced by the students, though non-students could be involved. After a call for directors, actors and crew members, the initial group got together and began to select plays and make plans. Instead of one long play, only able to accommodate a small group of students,

there would be five shorter, "one act" plays. These plays would have only a few cast members, allowing the scheduling to be much more flexible and easing time concerns for actors and directors.

Each play is unique in tone and content, giving the performance a well rounded feel. *Poor Little Lambs*, by Stephen Gregg, features five kids and their grandmother at a baseball game. As far as the kids can tell, the grandmother only knows five stories. When forced to spend time with her once a year, they each draw a story and compete to see who can get the grandmother to tell it first.

The scene is quite different in *English Made Simple*, by David Ives. Jack and Jill meet at a party and the audience hears their thoughts and commentaries through a loudspeaker in the background. *English Made Simple* highlights the impact of first impressions.

Picture Hearts, an original play by director, Raajen Patel, follows a "typical" college drinking scene. Who knows what can happen to a group of friends after a little alcohol?

As Ryan Olf, '05, director of *Variations on the Death of Trotsky*, puts in, "It's nice to be able to choose your own project and see it come out so well."

Loh Receives Several Academic Accolades

By DEBORAH WILLIAMS-HEDGES

PASADENA, Calif.-California Institute of Technology student Po-Shen Loh is the recipient of multiple honors that will enable him to pursue his graduate study and research.

Loh received the Churchill Scholarship to do graduate work in mathematics at Churchill College, University of Cambridge. He is one of only 11 students from across the country to receive this scholarship. The Churchill Scholarship Program, now in its 41st year, offers students an exceptional opportunity to pursue one year of graduate studies in engineering, mathematics and the sciences at the university. The scholarships also provide the opportunity for the students to experience life in Britain. The Winston Churchill Foundation of the United States, established in 1959, is the sponsor of the scholarship program.

Loh was also offered a Hertz fellowship to pursue graduate work leading to the award of a PhD in the physical sciences. The Fannie and John Hertz Foundation grants this honor to support the most promising of young Americans, those whose technical talent will have "the greatest impact on the application of the physical sciences to human problems during the next half-century." Loh plans to utilize this fellowship to continue his graduate studies at Princeton University.

In addition, Loh was awarded a National Science Foundation (NSF) graduate fellowship to cover three years of graduate work. The NSF fellowship is awarded to about 900 students each year on the basis of academic excellence.

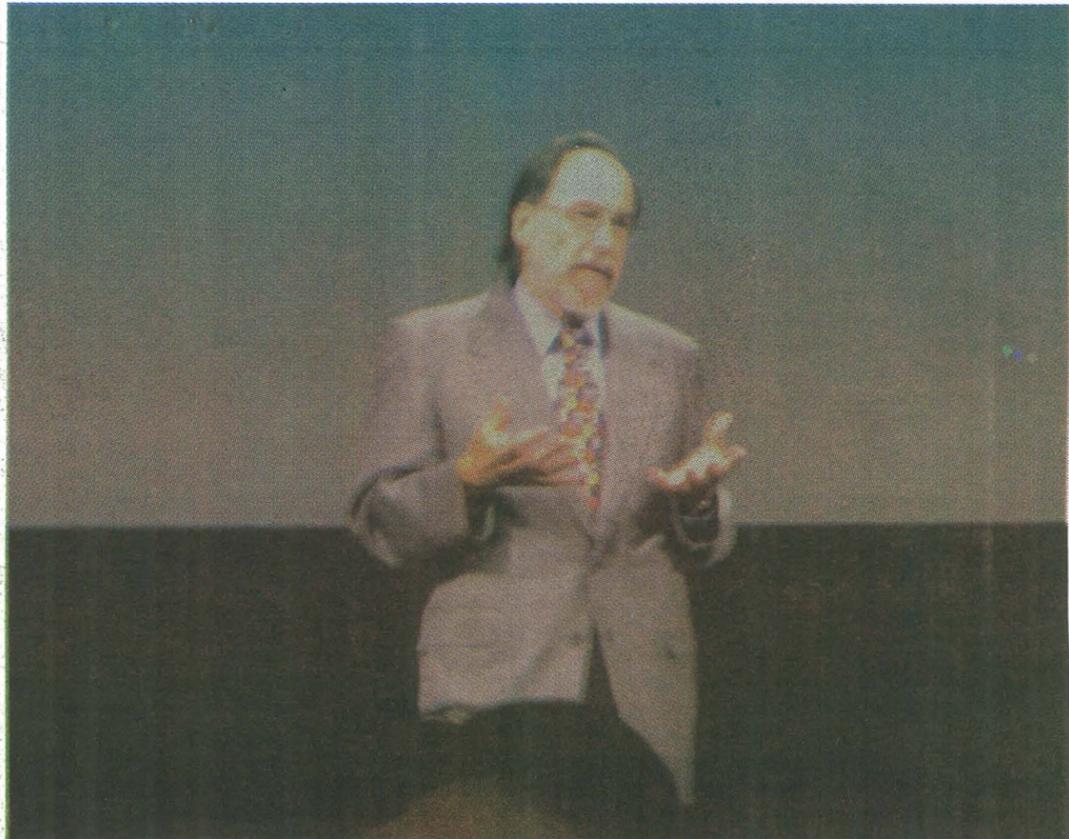
And finally, Loh has been se-

lected from over 3,200 applicants for a 2004-2005 National Defense Science and Engineering Graduate Fellowship. This fellowship also covers three years of graduate study and is sponsored by the Department of Defense through the Air Force Office of Scientific Research, the Office of Naval Research, the Army Research Office and the High Performance Computing Modernization Program and is administered by the American Society for Engineering Education.

With an exemplary academic record, Loh is the recipient of numerous high school and college honors that include a silver medal at the 1999 International Mathematics Olympiad in Bucharest, Romania; a 2000-2004 Axline Merit Award; and the 2002 Morgan Ward Prize for developing original math problems and solutions. He was also a 2002 national semifinalist in the TopCoder Collegiate Championship, a 2003 finalist in the TopCoder Google Code Jam and winner of a 2003 Barry Goldwater Scholarship.

Loh recently returned from the 28th annual world finals of the 2004 Association for Computing Machinery International Collegiate Programming Contest in Prague, Czech Republic, where his Caltech team scored 7th out of 3,150 teams from 75 different countries.

Loh grew up in Madison, Wisconsin, where his parents still reside. In his spare time, he enjoys building and optimizing computers for his family and friends. Eventually, Loh would like to become a university professor in mathematics.



The California Tech Archives

Caltech President David Baltimore spoke last Tuesday about the challenges faced by international students and scholars regarding the latest security concerns in issuing visas.

Visa Policy Hindering Scientific Progress; PhD Programs Suffer

Continued from Page 1, Column 3

the relevant information for the visa is determined based on the other countries policy. As a natural result, for countries with less favorable policy, the corresponding U.S. policy would also be less favorable.

When applying for a visa, the U.S. Consulate requests a security check depending on the following information: Country or birth of Citizenship, Name of visa applicant, Field of study and/or research. If an applicant comes from Cuba, Libya, Iran, Iraq, North Korea, Sudan or Syria (which are considered state sponsors of terrorism), if an applicant matches any of the names maintained on the "Lookout System" and if an applicant's field of study/research matches any of the entries on the "Technology Alert List," a security check may be requested.

The last procedure is admittedly the one that has the most impact on the Caltech community. When a Consular Officer determines that an applicant's field of study/research coincides with the Technology Alert List, then he/she will request a "Security Advisor Opinion." The process by which the SAO is generated is called a "Visa Mantis," where the State Nonproliferation Bureau, the FBI and other agencies, assemble their opinion on the applicant. When the opinion is passed back to the Consular officer, he/she decides whether to deny the entry of the applicant or not and once it is decided, the decision is final.

The process of Visa Mantis is the one that is causing our scholars/students the most trouble. "Based on a random sample of Visas Mantis cases for science students and scholars sent from posts between April and June 2003, GAO found it took an average of 67 days for the security check to be processed and for State to notify the post" (GAO analysis of State Department documents and visa operations).

This delay prevents the entry of the applicants into United States and thereby, many projects about which the applicants are concerned with cannot be started and can thereby be terminated simply

because the applicant cannot make it on time. This is a great obstacle to the science community. As Dr. Baltimore put it, "we are losing the opportunities of involving one of the best peoples in the world." The most striking example of this comes from the dramatic drop by 50% of graduate applicants from China.

According to Dr. Baltimore this "fortress of America attitude" fails to "consider the role of technology in America's economy." By adopting this policy that delays scientific exchange, the administration at Washington fails to appreciate the fact that "science is an international activity," and that it is "the strength that keeps America as the greatest nation."

A similar opinion is given by our faculty, Professor Morteza Gharib. Apparently, Caltech admissions only takes into account "the merit [of the applicant], the Caltech environment, [and] doesn't look at the visa at all," this is why many unforeseen visa problems arise and "half of [his] students have visa problems and cannot go to certain conferences because of this situation." However, grant funding is usually not a concern because the agencies are usually "pretty understanding."

However, when around 80% of the students pursuing a graduate degree and 60% of the students pursuing a PhD degree are having this problem and work is delayed, it is very obstructive to the progress of science. Moreover, it is not only Caltech that is having this problem. The new visa policy instituted after September 11th impacts scholars and students worldwide who are trying to gain entry into United States.

It especially influences Caltech students because many Caltech scientists carry on research in such specialized branches of science that it is difficult for the Consular officers to tell what they are doing in the first place. In this case, a Visa Mantis is almost always requested.

These cases, treated singularly might not be a big problem for International Services of Caltech, however, there are usually three to four students caught outside

of U.S. and in the long run, "the aggregate paperwork is huge." Unfortunately, even though the collective science opinion disapproves of such visa policy "it's very hard to get through the administration at Washington." "We realize that the concern for security is valid, however, [the administration] don't realize how counterproductive many of their security policies are... do they really think a terrorist would honestly tell his/her intended fields of study?"

In conclusion, there is not really any helpful input from the government and here at Caltech, the administration is doing all it can to help the students. For example, Professor Morteza would talk to the students having visa issues who want to go home, presenting to them the risks involved and discuss all aspects. According to the director of the student service, they are formulating many letters to the agencies from our faculty to explain the nature of their students work and to see whether there is any possibility that the process of Vista Mantis can be made faster. "We can only hope that this is effective."

The California Tech

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VOLUME CV, NUMBER 20

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Through the Eyes of the Former BoC Chair: The State of the Honor Code for the Present & the Future

By GALEN LORAM

I'm biased, after all, I wrote the article. And I know I'm verbose. But I believe that this is probably the most important thing that will be published in *The Tech* this year, so I REALLY encourage you all to read it. All of it. Otherwise I wouldn't have written a novella on it. And I'd go further. I'd strongly encourage anyone in the Caltech community - undergraduates, graduates, faculty and staff - to publish their thoughts and responses to this in *The Tech*. I think that a vibrant dialogue on the subject is imperative. I'll probably see what I can do to put together a forum on the subject some point this term - though no promises.

The Honor Code. I wrote about it earlier this year, after getting back from the Center for Academic Integrity conference. I extolled its virtues, and pondered why it works here, but not in other places.

The Graduate Student Council, along with Women in Engineering, Science and Technology, took a survey that included some questions on the functioning of the honor system. The results came out stating that, I believe, slightly over one quarter of graduate students had admitted cheating at some point during their stay at Caltech. Shock, disbelief and outrage seemed like the norm for a couple of days. Then things sort of simmered down.

We [we being amorphous; largely Harris Nover, Tom Fletcher and I, but with encouragement from others, including those who conducted the GSC survey] decided that it would be important to run a parallel survey of undergraduates to see what sort of trends emerged. We did this around the time of ASCIT elections. It is a shame, and the blame lies with me that the results were not published sooner. The analysis is quite new, and here they are now.

We finally got around to doing a preliminary analysis. I must stress that this is a preliminary analysis, but the results I'm reporting here I feel are quite clear: the statistical significance is not at all dubious. However, we hope to have a more thorough analysis at some point on the future: the combined data skills of the old and new BoC chairs and secretaries was not enough to overcome the immense quantity of data. So that will have to wait. I will intermingle within the article some observations and beliefs of mine, but I trust that it will be clear what is objective fact and what is interpolation. If you have any questions about which is which, or any questions about the survey in general I strongly encourage you to drop me an email or stop me on the Olive Walk and ask. Furthermore, if you wonder how I came up with any of the numbers, I encourage you to email or call or drop by and ask. I'm happy to explain. The basis for the interpolation is two years of serving on the board: one as a representative and one as chairman.

We had about a 30% response rate (261 students out of 913 eligible undergraduates - a BIG thank you to everyone who took the survey. I know it was long), and it is important to mention that a number of studies have shown that self-reporting behavior of 'antisocial' acts - those that do not conform to the social norms of a society - tend to be biased against reporting. That said, we promised

confidentiality and have to this point, and will certainly continue to hold true to that promise. We trust that people were willing to believe this pledge, and furthermore, as the reports were done in the safety of their own room, peer pressure was minimized.

We count a violation of the honor system as one of the following (all asked about at their stay at Caltech): "knowingly violating a collaboration policy," "taking extra time on an examination, and not indicating it on the exam" "using disallowed resources on an examination," "plagiarizing material" "forging data (dry labbing) in either a lab course or real research" "collaborating with another student on an examination." It is clear that some violations would fall into more than one category (for example, plagiarism typically violates the collaboration policy)

I'll start out with the worst number. Approximately 50% of the undergraduate body will violate the honor code at some point during their stay at Caltech. Next: that means that 1/3rd of people who took the survey reported that they had, at some point, violated the honor system.

So I'll be the first to admit that when I saw these numbers my heart sank. Maybe even stopped. My beloved Caltech; my beloved honor system. I found it hard to believe that this could really be the case. It is clear (both from the survey, and anecdotally) that people believe in the honor system - at least for undergraduates (more on this later). Had I wasted what amounts to over a thousand hours of time over two years on the Board of Control? I wasn't ready to believe that and I hope you aren't either. In more practical terms, what do these numbers mean? The number I mentioned in my last article on the honor system was "2-4%." Could I have really been that far off base?

Given the data the GSC had mined in their survey, we realized it would be beneficial to include questions about how often people violate the honor system. For each type of violation we binned these into 1-2; 3-4; 5+. 86% of people who reported honor system violations had only violated the honor system 1-2 times.

Well, that was a relief. To be honest, I can't consider someone who violates the honor system once or twice to be a "cheater." Caltech is an incredibly stressful place; and we're all only human. People make mistakes. Having served as a UCC for two years (and, really, just having walked around campus) I know what people endure during their stay here. Is it "okay" for people to violate the honor system just because they're having a rough spell? No; absolutely not. Is it understandable? Yes; certainly. So I'm not going to brand anyone in that 86% to be a cheater. I suspect (given that they have only done it once or twice) they learned from the experience, and perhaps even still feel bad about it to this day. College is about learning and growing; it's a much better time to make mistake now than in five years. Academic dishonesty can absolutely ruin an incredibly promising career in one fell swoop.

So let's go for a new number: 4.5% of respondents admit violating the honor code more than twice. This is a lot closer to my 2-4% figure, and is starting to restore my faith in the honor system and Caltech. This even includes

people who have violated the honor system 3-4 times, not just the 5+ folks.

Ok, so what does that mean in more 'on the ground' terms? It means that the average Caltech student violates the honor system once every three years. Given the number of reports of cheating, and given my experience on the board, about 1/2 of honor system violations occur by 'chronic cheaters,' while 1/2 come from the crowd I discussed above. These numbers, plugging in a couple of approximations (for example, that the average student takes 45 units a term), suggest that in a class of forty-five students, one student will violate the honor system. Ok, this is sounding a bit better. Assume two tests a term and you can expect about 1 in 100 people to cheat on any given exam.

Ideal? No.
Tolerable? Yes.

Here is where we get a bit of my beliefs. If we were to change the honor system, to institute in class exams, to try to put a stop to collaboration, it would be the greatest error that the institute had made, at least with regard to students, since it became the California Institute of Technology (it was before this time that we stopped allowing women to attend, a mistake I believe to be on par with this). It would eclipse our brief stay as a de facto military institute during World War II; it would make any fallout from the TURLI housing report look like small potatoes, and would dwarf house renovations. It would even make the construction of the North Houses look insignificant. The incidence of cheating would almost immediately go through the roof. Countless studies have shown that if you trust people, they will act much more trustworthy (the principle of gift exchange). And I strongly suspect that Caltech students would take it as a 'challenge' to beat whatever anti-cheating mechanisms were instituted. The degree to which it would blow up in our face would be astronomical.

Fortunately, from the reaction at the faculty board meeting, I think there is little chance of this happening. I was genuinely impressed by the response of the faculty board: I perceived it to be one of interest in and continued belief in the functioning of the honor system. I hope that this is the reaction in the community at large.

Allow me to list a few of the interesting, very clear correlations. There are countless others that no doubt lurk in the data, and we hope to find someone with superior data analysis skills to pick it out. But, without further ado: People who believe that others follow the honor system follow it themselves. It is unclear whether this is correlational or causal, but it is certainly interesting (and intuitively makes sense). This effect seems to magnify as their stay lengthens beyond core classes.

62% of undergraduates have encountered an unclear collaboration policy. Professors: please look at our collaboration policy sheet! <http://Donut.caltech.edu/boc>.

Nearly half of all reported honor system violation occurred during core science and math classes. This result is somewhat biased - in that there are people from all years - so younger students may have basically only taken core classes. It is intriguing none the less; given that less than 1/4th of classes that a student takes during

their stay here are core.

In order of prevalence: Percentage of respondents affirming that they had violated the honor system in this way

- 1) Disallowed resources (17%)
- 2) Going over time (14%)
- 3) Knowingly violating collaboration policy (8%)
- 4) Dry labbing (6%)
- Negligible amounts of Plagiarism (<2%) and Collaborating on Examinations (<1%).

There is a distrust of graduate students acting in line with the honor system. While half of the respondents stated they have no basis to know, among the other half: 2.5 times as many respondents believe that undergrads follow the honor code 90% or more of the time (56%) than believe graduates follow the honor code 90% or more of the time (22%). 15% of those who had an opinion believe the graduate students follow the honor system less than 60% of the time; 1.5% believe this is true of undergraduates. Clearly something needs to be done to address these trust issues.

The graduate students, after their survey, called for a committee to look into the functioning of the honor system among graduate students, and possibly undergrads. I endorse this call - though I would go further and say that it should be expanded to include

professors as well. We added a comment box about 2/3rds of the way through the survey at the request of some participants and it became clear immediately that this was something that should have been done earlier. One common complaint revolved around a belief that professors did not believe in or follow the honor system. The comments were a bit nebulous in how they felt that professors violated the honor system, but it was something that came up multiple times.

So, a hard conclusion? I think that we are doing about as well as we can. I think that within any population of people, there will always be a couple of 'bad apples.' And we do have a couple of those. However, given the number of people that the Board of Control places on leave each year (6-8 during my tenure), I think that we end up catching a good percentage of the hardened cheaters. Given people's belief in the functioning of the honor system, which is widespread, I think that people do their best to uphold it. I think that the rest of the honor system violations come from people just breaking down and making a mistake. And I think that the only way that we could prevent that is by making it a less stressful school. And I think that most of us came here because we knew that it was difficult, because we wanted to "drink water out of a fire hydrant." And so I think we must understand that we don't live in a perfect world... but we live in a much more perfect world than the outside world.

This Week in ASCIT

April 13, 2004

Present: Ann Bendfeldt, Ryan Farmer, Shaun Lee, Kelly Lin, Galen Loram, Kim Pendorf, Claire Walton, Corinna Zygourakis

Absent: Jenny Fisher

Guests: Eric Cady, Jeff Chou, Parth Venkat, Rumi Chunara, Lydia Ng, Mark Polinkovsky, Jared Urdike

Introduction:

1. Call to Order, 12:05 PM

New/Open Positions:

2. The IHC has posted committee sign-ups for the following committees: Freshman Admissions, Grievances, Scholarship and Financial Aid, Undergraduate Academic Standards and Honors, Upperclass Admissions, Student Housing, Health, and Athletics and PE. Interviews will be held on Tuesday, April 20, and Wednesday, April 21.

3. Sign-ups for MHF and CRC committee representatives have also been posted. Interviews will be held on April 27 and 28 at 10 pm.

Other Business:

4. BoD discusses general policy about maximum and minimum number of students who can request ASCIT money to take their professor out to lunch at the Ath. BoD finally decides that at least two, but no more than four, students may request ASCIT lunch funding. Vote: 6-0-1 (approved, Claire abstaining).

5. BoD discusses general policy about whether students can request money to take staff members (who are not professors) out to lunch at the Ath. Vote on whether students may take staff members out to lunch: 1-2-3 (Claire in favor; Kelly and Shaun against; Corinna, Ryan, and Ann abstaining). Vote fails.

6. Galen Loram notes that he had analyzed the results of the Honor Code survey and will describe the results in an article in this issue of *The Tech*.

7. After a few modifications, BoD ratifies budget, as determined in their day-long meeting on Saturday, April 10. Vote: 5-1-1 (Shaun against, Corinna abstaining). Bud-

get will soon be posted online.

8. Jenny Fisher has posted a survey about course uniting on the donut website. This survey is very short, so please fill it out before April 21!

9. Kim Pendorf reports that RA selections for several houses are in progress.

10. Kim notes that the issue of freshmen in Avery will be discussed at the next faculty board meeting in May. 11. Kim also notes a recent IHC decision that each house can determine whether its members may enter multiple roompicks (i.e., roompicks in other on-campus houses).

Money Requests:

12. Lydia Ng requests \$500 funding for Blacker's interhouse party. Vote: 6-0-0 (approved). [Note: Blacker Interhouse, with its ancient China theme, was a big success!]

13. Senior class co-president Rumi Chunara requests \$100 for senior class gift. Vote: 6-0-0 (approved).

14. Eric Cady, from Lloyd House, requests \$100 multihouse funding for paint-balling with Ruddock. Vote: 6-0-0 (approved).

15. Jeff Chou, from Ruddock House, requests \$100 multihouse funding for paint-balling with Lloyd. Vote: 6-0-0 (approved).

16. Ann Bendfeldt, Mark Polinkovsky, and Jenny Hsiao request to take Professor Oscar Bruno out to lunch at the Ath. Vote: 7-0-0 (approved).

17. Parth Venkat, Joey Gonzalez, Tim Tirrell, and Toby Huang request to take Professor McAfee out to lunch at the Ath. Vote: 7-0-0 (approved).

Upcoming Events:

18. Mark your calendars! The ASCIT formal will be held on Saturday, May 29, at the MOCA (L.A.'s Museum of Contemporary Art). Tickets will go on sale shortly.

Meeting adjourned 1:00 PM.

Respectfully submitted,
Corinna Zygourakis
ASCIT Secretary

Freshmen in Avery: Why Caltech Will Be a Better Place

By THE AVERY COUNCIL

At the beginning of this year, the Avery Council proposed to the Student Housing Committee that freshmen be allowed to pick into Avery House as part of Rotation, beginning in the fall of 2004. This proposal was unanimously endorsed by the Avery Council, and a poll showed it was supported by the majority of Avery residents as well. It was, however, opposed by the IHC. After much discussion, the Student Housing Committee approved the proposal, but with a compromise that the plan be implemented in the fall of 2005.

Before moving on and working out the logistics of implementing our proposal, we believe it would be beneficial to reflect upon its logical foundations. So why did the Avery Council make this proposal, and how do we envision that Caltech will be a better place once freshmen can choose Avery House?

Overcrowding and the Eighth House

The first major benefit of having freshmen in Avery is actually for the other seven houses. Overcrowding in the seven houses has been a serious problem for many years. We estimate that roughly 120 students, mostly sophomores and juniors, are ejected from their houses each year to make room for incoming freshmen. This happens because freshmen can only pick into the seven houses, and there are only so many rooms available. Most returning students would rather not be ejected, so the houses hold lotteries to decide who has to leave. Is it necessary to accept this unsatisfactory situation? Or can we change it so that students do not have to leave their houses unless they choose to?

There has been considerable discussion about the possibility of building an eighth house on campus to alleviate the current overcrowding problem. This is a popular idea, and the IHC has endorsed the option of an eighth house as part of the upcoming rehab project. With more space in the form of an eighth house, we would reduce the number of stu-

dents that have to be ejected each year, and that would certainly improve housing at Caltech.

What the Avery Council has proposed is essentially to build that eighth house, but to build it out of what is now Avery House. If we imagine putting 20 freshmen in Avery each year, and we further imagine that all of those freshmen continue to live in Avery through to their senior years, then this reduces overcrowding in the other seven houses from 120 students per year to 40 students per year. Having freshmen in Avery will make a substantial dent in the overcrowding problem.

Furthermore, if funding can eventually be found for the most ambitious rehab plan, in which the three north houses are turned into four smaller houses (which creates additional space), then overcrowding might be alleviated altogether! With freshmen in Avery, we envision a day when all students can live where they choose to live.

The Avery Community

A second major benefit of having freshmen in Avery will be in the Avery community. While Avery House is a great place to live, it doesn't have as strong a sense of community as can be found in the other houses. Why is that? We believe that the main reason is that too many people live in Avery simply out of necessity. We estimate that roughly one-third of the current residents of Avery are only there because they were forced out of their other houses. Many of these "transient" residents plan to return to their original houses when they can, so they spend a lot of time socializing at their original houses - and so not at Avery. Quite a few of the closed doors you typically see walking through Avery belong to students who choose to spend their time elsewhere.

The problem is one of critical mass. To form a viable house community, there has to be a sizable number of students who stay with the house for several years and really care about the social atmosphere in the house. Avery has some such students, but

their numbers are relatively small compared to the other houses, and their energies are overtaxed. Without sufficient reinforcements to maintain a robust core group of house members, the community suffers.

It is possible to build a stronger community at Avery, but you cannot build a community without people. We feel the Avery community simply cannot grow and thrive without building up its core group of students that are really committed to Avery. The Avery community has not developed to its full potential over the years since Avery was built, and this is a problem we would like to fix.

We believe that freshmen will make a huge difference in Avery, just as they do in the other houses. Freshmen that come into Avery will adopt Avery as their home, just like freshmen currently adopt the other seven houses. Avery freshmen will not come into the house with established social ties to the other houses, so they will likely become major contributors to the Avery community. After four years of incoming freshmen, we expect that Avery will have a community that is just as strong and vital as those in the other houses.

Some people have expressed concern that the Avery environment is not sufficiently nurturing for freshmen. We feel that Avery is a good place for freshmen now, and it will quickly become much better. There's a bit of a Catch-22 here, in that we need freshmen to develop a community that is best for freshmen. We plan to work with the other houses and the IHC to create the best support structure we can from the outset. But a community-building process takes time - years - and we believe we simply cannot develop the kind of community we envision without freshmen being an integral part of it. Note that this is absolutely no different than what already happens in the other houses - they too must have freshmen to support the communities they have already established.

Is developing such a community a good thing for Avery? Of course. People clearly like

the seven houses, and given a choice, most tend to stay in their original house. Having a strong community makes a house a better place to live. We want to build Avery House into a better place to live.

We would like to point out that we have already done (inadvertently) a small-scale sociological experiment similar to introducing freshmen into Avery. In the fall of 2003, approximately 25 transfer students came to Caltech, and since the current Rotation rules allow transfer students to pick Avery, 20 became Avery residents. These are 20 new students, who, like freshmen, came into Avery House without having first lived in the other seven houses. These 20 have had an enormous impact on the Avery community, resulting in an environment that is noticeably more active than it has been in the past. Furthermore, we believe these 20 had a good experience spending their first year at Caltech in Avery House. We believe this experiment suggests two things: that freshmen will thrive in Avery, and that they will indeed have a big impact on developing a more vital Avery community.

Another concern we hear is that having freshmen will mean that Avery can no longer be a refuge for those who seek an alternative to the culture in the seven houses. To some extent, that will likely be the case. The culture of Avery will change, and we expect it will become a much more desirable place to live, as desirable as the other houses. Thus, in the long run, Avery will probably be unable to take in a large number of transient students - just like the other houses.

But it's not at all obvious Avery is needed as a refuge. There are currently roughly 300 students living outside the seven houses, with about 100 of those in Avery. Those other 200 spots will still be available for those wanting refuge. And how many students really desire refuge? The overcrowding in the seven houses - which results in students being ejected in large numbers every year - clearly indicates that there are presently far more places of refuge than there are students who seek them! Avery House will much better serve the student population as a place with a strong sense of community and identity, like the other houses.

We cannot predict exactly how Avery will evolve after 2005, and how much Avery will begin to look like the other seven houses. We believe that the community in Avery will remain distinct, however, even as it evolves into a house with freshmen. For one thing, Avery has undergraduate students, graduate students, and faculty families living together, which makes it unique among the houses. Also, Avery has already established some traditions of its own, which we believe will continue into the future. Even as it becomes an eighth house,



courtesy of www.ugcs.caltech.edu/~avery

The Avery Council believes that given the chance, Avery can develop into a very supportive and dynamic environment for freshmen.

Avery will probably still be seen as something different from the other seven.

More Choice is Better

The third major benefit of having freshmen in Avery is for the incoming freshmen themselves. The seven houses are great for most students, but isn't it better to provide additional housing options? We feel that Avery House will provide an excellent alternative for some freshmen, and that all freshmen should be given the choice of living in Avery.

One concern we hear is that freshmen may choose Avery for the wrong reasons, without knowing what Avery is really like. But this might be said of any of the other houses as well. We feel that freshmen will thrive in Avery, and for some it will be a better choice than the other seven houses. We feel that freshmen, like all students, should be given the freedom to choose what they feel is right for themselves. The purpose of Rotation is for us to show the incoming freshmen what the different houses are like. If we do our job, then the freshmen will make informed choices.

A number of students have also expressed their feeling that freshmen should not be denied the opportunity to experience the seven houses. We agree, and we further add that freshmen should not be denied the opportunity to experience Avery! All freshmen will have the option, during Rotation, to not pick Avery, so no one will be forced into Avery or any other house. This is in contrast to the current situation, where many students are effectively forced to stay in Avery (or some off-campus location), simply because they are ejected from their original houses.

We believe that having freshmen in Avery is close to a win-win-win situation: Avery House wins, the other seven houses win, and the incoming freshmen win. We will lose part of the Avery House we now have, but we are confident that what replaces it will be superior. We are confident that the new Avery House will much better serve the needs of Caltech students.

We are looking forward to the fall of 2005, when freshmen will be admitted into Avery House for the first time. There are details to be worked out - changing Rotation and picks, UCC reps, pre-frosh, IHC representation, issues relating to the Avery government, house dues, etc. Our planning of these details is already underway. We hope to get as much support from the student body as we can in making this happen, and in making the transition as smooth as possible. We truly believe that Caltech will be a better place in the end.

GETTING BLOOD
An Uplifting Comic for the Average Teacher

BY HAMILTON FALK AND JACK LEE

ADMISSIONS PART 1

What's this?

REJECTED

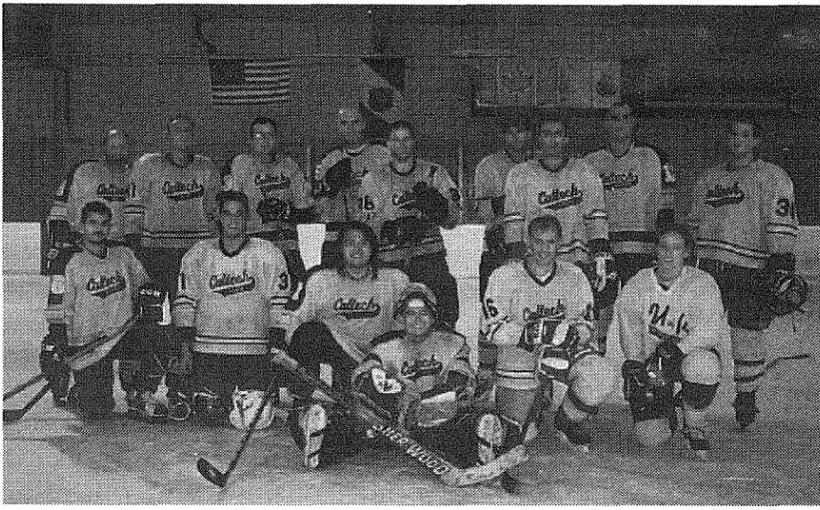
How can you reject someone that HOT???

ADMISSIONS PART 2

I wonder how admissions REALLY works

ADMISSIONS OFFICE

Oh.



Beaver Cup XVIII: In Battle of the Hockey Alumni, Caltech Defeats MIT

By HAJIME SANO,
DANIEL THUNNISSEN and
BIFF YAMAZAKI

The Caltech Alumni hockey team defeated the MIT alumni 3-2 in the annual Beaver Cup over the Easter weekend. This was only the second time Caltech has won the Beaver Cup in eighteen meetings of the two Beaver teams.

Held at Glacial Gardens in Lakewood, California, Beaver Cup XVIII was an exciting and close affair. Although the MIT alumni dominated play for long stretches of the game, Caltech secured the win with two third period goals for the come-from-behind win.

Both teams iced light lineups for this Easter weekend match: eleven skaters on the MIT squad and ten for Caltech. The two teams played to a scoreless first period. The MIT Alumni peppered Caltech goalie Frank Monzon in the scoreless period, but Monzon and his defense were able to turn aside all shots. Play started to even out in the second period. Dennis Clarke opened the scoring for MIT 5:10 into the second period on a one-timer off a cross ice pass from Shane Swenson. Pavel Svitek tied it for Caltech 1:50 later, when Mark Stewart dug the puck from behind the net on a double team, which left Svitek wide open in front. Clarke scored

again at 8:35 into the second period, assisted by Swenson.

As MIT took a 2-1 lead into the third period it seemed likely Caltech's futility in the Beaver Cup would continue. However, with Haj Sano of MIT off for roughing early in the final session, Caltech pressed for an equalizer. It came through a great effort by Adam Olsen assisted by Hafen McCormick. This set the stage for Svitek's late heroics. With five minutes remaining in the game, Svitek picked up the puck near center ice and after maneuvering around two MIT players unleashed a ferocious slap shot from just outside the blue line that beat MIT goalie Pete Gasparini over the glove shoulder. The MIT Alumni pulled Gasparini in the final minute of the game in a desperate effort to tie the game. Despite tremendous offensive pressure, Monzon and the Caltech defense held firm, securing the victory.

The Caltech dominated crowd hailed this as a "Miracle on Ice". Not so much for the win, although a rare occurrence. The miracle was McCormick actually assisting on a goal, Svitek's shots being consistently on net, and Caltech's "Marie Celeste" defense not disappearing late in the game.

Caltech improves to 2-15-1 against MIT and is 2-1-0 over the last three seasons.

SCORING SUMMARY

Team	1	2	3	T
MIT	0	2	0	2
Caltech	0	1	2	3

3x20 min running time

First Period

Caltech penalty Holunga, 3:00
Kneeing, 15:42
MIT penalty Westphal, 3:00
High Stick, 18:45

Second Period

** MIT goal Clarke from Swenson and Russell, 5:10 **
** Caltech goal Svitek from Stewart, 7:00 **
** MIT goal Clarke from Swenson, 8:35 **
MIT penalty Sano, 3:00 Roughing, 19:44

Third Period

** Caltech power play goal Olsen from McCormick, 1:50 **
MIT penalty, Westphal, 3:00
Interference 2:47
MIT penalty, Charney, 3:00
Hooking 5:35
Caltech penalty, Holunga, 3:00
Roughing 9:34
** Caltech goal, Svitek unassisted, 14:58 **

The Prefrosh Game (known also as "Catch 'Em If You Can")

By THE CREATORS OF CRYING BLOOD

So, everyone is pretty excited for Prefrosh Weekend. Or maybe not. It doesn't matter, since by the time you finish this article, you'll be counting down the days until this huge event. You won't have to spend your weekend alone in your room, snubbed by all the "cool" prefrosh. No, you'll have a plan to interact with the little kiddies, because now you have The First Annual Crying Blood Prefrosh Game! You've gotta catch 'em all! Or some. Now, before you run out and start stuffing poor little prefrosh into a burlap sack and dumping them in your room, remember these rules:

1) Prefrosh have rights too. To check what you can and can't do, go to the ASPCA website at <http://www.aspca.org>.

2) If you break rotation rules you're supporting Fascism. Also, you get in trouble.

3) We do not condone street RPS.

4) The winner will appear in the somewhat humorous comic *Crying Blood*.

Well, the last one wasn't so much a rule as a reward. Now, without further ado, THE PREFROSH GAME! (Remember; catch as many as you can! Possibly even all!)

THE PREFROSH GAME

-Find 15 prefrosh with math-related shirts (2 points)

-Teach a prefrosh to sing the Oscar Mayer wiener song (1 point)

-Say "they're all fine houses" 25 times (3 points)

-Say "they're all terrible houses" once (1 point)

-Keep a prefrosh awake for 48 hours (I'd suggest team work) (2 points each)

-Find a prefrosh that started on a varsity football team in high school (10 points)

-Convince a prefrosh that the

north house showers are for sharing (5 points)

-Convince a male prefrosh not to come (3 points)

-Convince a female prefrosh to come (10 points)

-Take prefrosh to Millikan and lose them amongst the books (3 points)

-Walk a prefrosh down the Olive Walk on a leash (10 points)

-Do 15 push ups and convince the prefrosh you're preparing for a Rubik's Cube Tournament (3 points)

-Make up a nickname for a prefrosh and refuse to call it by anything else (3 points)

-Sleep with a large text book and tell the prefrosh you always do this (2 points)

-Find a prefrosh who thinks its cold here (they're usually from Florida) (3 points)

-Have a prefrosh rub Millikan's nose with his/her own (5 points)

-Convince one he/she needs to know pi to 50 digits for Math 1a (3 points)

-Lick a prefrosh (0 points)

-Hide all your prefrosh's things while she/he is sleeping (5 points)

-Take the prefrosh to the playground at Grant Park and tell them this is what people are talking about then they say "The World's Best Playground for Math, Science and Engineering" (8 points)

-Find a prefrosh from Delaware, South Dakota or Alaska (3 points)

-Find a prefrosh who doesn't like chocolate (2 points)

-Find a prefrosh who can name 12 NFL teams (5 points)

-Convince a prefrosh that you're a prefrosh too (3 points)

-Convince a current student that you're a prefrosh (7 points)

E-mail us your score (no lying) at CryingBloodAtTech@yahoo.com



Caltech Blitz Chess Championship. The Caltech Chess Club will host its second annual blitz chess championship on Friday May 7th, from 8 till 10:30 pm, in the Page House Dining Hall. Participation is free to everyone in the Caltech community, and players of all skill levels are welcome. There will be a \$425 guaranteed prize fund: \$150, \$100, \$75, \$50, and special prizes for novices (\$30, \$20). To participate, please email Patrick Hummel (hummel@its), or arrive 10-15 minutes early for the event.

The Mathematics Department is pleased to announce two categories of prizes to be offered again this year to Caltech undergraduate students.

1. The E.T. Bell Undergraduate Mathematics Research Prize --- A cash prize of \$500 awarded for the best original mathematics paper written by a Caltech Junior or Senior. Contestants must be nominated by a faculty member familiar with the work. If the entry is sufficiently worthy, the faculty member will nominate the contestant and act as sponsor. Each student is entitled to only one entry. All contestants nominated must submit their papers in final form to their faculty sponsors by Monday, May 10. A faculty committee will judge the papers and announce its decision before the end of the third term. The committee may award duplicate prizes in case of more than one outstand-

ing entry.

2. The Morgan Ward Competition --- Open to any Caltech freshman or sophomore. Entries may be individual or joint. Each student is entitled to three entries; two may be individual. An entry consists of a mathematical problem with a solution or significant contribution toward a solution. The problem may have any source which should be stated in the entry. The entries are judged on the basis of the nature of the problem, originality, and elegance of the solution. Indicate any outside references used. Entries from each contestant or group must be delivered to 253 Sloan by May 10. The names of the contestant, or contestants, must be written on the envelope only, not on the entry. The Judging Committee will consist of 3 undergraduates. The judges will select a group of finalists and submit their entries to the mathematics faculty who will make the awards. Prizes of \$75 will be awarded for the best entries. Prizes for individual entries will be limited to one per contestant; no group may receive more than one prize.

The Hawaiian Club is offering hula (traditional Hawaiian dance) lessons this term! Class will be held in Winnett Lounge on Saturdays from 2-4pm until May 29 (with the exception of 4/24 and 5/1; these classes will be held on Sunday, 4/25 and 5/2). The cost is \$5/class for Caltech community members; \$12/class for all others.

For more information, see our club website at <http://www.ugcs/~lilino> or email us at maruchan@its.

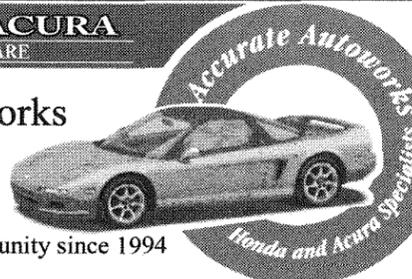
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D. Kortal/The California Tech

Iram Parveen Bilal offers some statistics on house segregation as Rumi Chunara and Kulsoom Hasan look on in anticipation.

Students Argue Segregation Issue Before Lunch Crowd

By K. SZWAYKOWSKA

The Undergraduate Housing Debate, hosted by the Caltech Public Speaking Club and International Student Programs (ISP), played out this Wednesday (that is, April 14) at noon on the Olive Walk. Students lined the walk and sat around on the grass—some came with a lively interest in the issue; others were attracted merely by the complimentary pizza and soda. All of them learned some interesting facts about life on campus, from a point of view not frequently discussed: the issue of segregation between different groups in campus housing.

The debate was held as part of Caltech International Week—an extended series of events sponsored by the ISP, intended to educate people about the diverse cultures around the world. Other events this year included a panel discussion about post-September 11 American foreign policy with President Baltimore on Tuesday; an international food fair and culture show on Friday; and on Saturday, a performance of the African-Brazilian martial arts-dance form Capoeira. Like these other events, the debate was intended to raise awareness of cultural differences between groups, while at the same time encouraging interaction and mutual understanding.

Specifically, the topic of the debate was: “Resolved, that Student Government should take action to discourage self-segregated living patterns among Caltech undergraduates,” drafted by Professor Morgan Kousser of the Humanities and Social Sciences Division. Kulsoom Hasan and Kevin Bartz argued for the resolution; on the opposite side of the debate, Rumi Chunara and Neil Tiwari defended the status quo.

Before the beginning of the debate, Iram Parveen Bilal (senior, Page) cited statistics which showed that white students and white women especially, were less likely to choose to live in Avery than were Asian students; that almost half of the population in Ruddock was Asian, while an overwhelming majority of Ricketts was white. The actual segregation of groups within Caltech thus established, the debate could proceed.

On the side speaking in favor of student government intervention in the issue, Kevin Bartz (junior, Fleming) emphasized his appreciation for the traditions of the individual houses, but expressed concern that some people do not feel welcome in different houses.

He argued that house stereotypes create an exclusive environment and that they should be expanded (by house presidents working together with the student government) to create a comfortable environment for a wide range of people.

Kulsoom Hasan further added that the “self-segregation” which occurs between different groups of people, is an unfortunate cycle, in which people of similar experience who gather together tend to create an environment exclusive to others, who then separate into further groups, etc. This means a person, moving within his or her sphere of friends, does not experience much cultural diversity which might enrich their experience at Caltech, while some people may have trouble finding a group with which they feel comfortable.

Hasan noted that the student government is already getting involved in the issue of diversity, for example by getting involved in events such as International Student Week and so using student government to promote diversity in student housing is not a far stretch from the present situation. In conclusion, Hasan pointed out that the issue is not about individual houses, but about the house system in general; what, she asked, if some group is not comfortable at all in the house culture?

The negative side was then given a chance to retaliate. First Rumi Chunara (senior, Fleming) noted that while “self-segregation” of different groups does occur, it is not necessarily a problem for any of the students. She noted that, though all students are required to spend at least two terms in institute housing, they are given great freedom to choose where they would like to live, so they have a chance to figure out where they feel most comfortable.

Moreover, the small size of the institute guarantees constant contact between different groups anyway, as people from different cultural backgrounds and living in different houses attend classes and mingle together. At the same time, some separation of groups allows students to retain their cultural uniqueness, rather than adopting the ways of the majority entirely.

Neil Tiwari (junior, Fleming) spoke next; he agreed that racial and cultural harmony is desirable, but expressed concern about ways in which it could be imposed on the student body. He and Chunara both made it clear that, in their belief, forced integration imposed from above by the student government, would not work. Forced quotas for cultural and ethnic groups within each house, they believed, would only lead to creation of “small enclaves” in each house, which might in turn aggravate tensions between these different groups.

The issue was not so much the goal of cultural interaction, which was generally agreed to be a good goal, but the reality of its implementation. In view this, the negative side posed the question: why is it so bad to have a “tossed salad” of cultures within the community, with all groups coexisting harmoniously but remaining in some sense separate, rather than enforcing a “melting pot” in which all cultural identity would be lost?

The debate ended with some questions from the audience and short responses from both sides of the debate. Most of those involved were opposed to any direct action by the student government, such as setting quotas for diversity in each house, but ideas for a less direct approach to the problem were given: more inter cultural events, a required course in cultural diversity, etc. Professor Kousser ended the debate, saying that he had been ignorant of this issue before, but expressing a hope that “we will have more discussion” concerning it.

The issue, then, may become more prominent in the near future. For now, there is no way to tell what direction it will take; but in any case, more people will be thinking about the issues of social diversity.

Congressman Opposed War

Continued from Page 1, Column 5

should demand to why the wealthiest 1% owns more than the bottom 90% and why they have gotten richer in the past decade while the middle class has been shrinking.

According to Sanders, no one has addressed this issue. Instead, “people have been lying to people” with right-wing politicians resorting to demagoguery to divide people by blaming the economic situation on affirmative action, immigrants, even women.

On the issue of health care, Sanders fervently believes that we should have a national health care system. The US, as the only industrialized nation that doesn’t guarantee health care, also spends the most on it. Insurance rates have gone up by 15% a year and there are 40 million people uninsured. Sanders believes that health care should be a “fundamental right for all Americans”.

Transitioning next to the issue of money and politics, Sanders claimed that the only way for an issue to get to the floor of the House is to make a significant campaign contribution. For instance, the drug industry, after having spent hundreds of millions, has made the US, out of all the industrialized nations, not regulate medicine or drug costs. Sanders then pointed out that of all the problems that faced the nation when Bush was elected, his first priority was to “provide tax breaks to the wealthiest 1%.”

Sanders then switched to the current situation in Iraq. He wanted everyone to know that many in Congress “fought as hard as we could” to prevent to war. Characterizing that current Iraqi situation as a “quagmire”, Sanders said that while terrorism is a serious problem, we need to fight it properly.

To do so requires the world community and not the dangerous precedent that Bush’s policy of pre-emptive war gives. Sanders claims that the present situation is “precisely what Osama bin Laden wanted” and that he wanted to get the troops home as soon as possible.

Going back to the issue of the media again, Sanders said that given the small

number of large media conglomerates, it is very naive not to believe that there is a strong bias. The media decides what issues are important and issues like the decline of the middle class, the increasing amount of college debt and the decrease in the number of low income students going to college are all ignored.

Regarding his opposition to the Patriot Act, Sanders said that he has sponsored the Freedom to Read Act which reverses the Patriot Act provision that allows FBI agents to get information on what books you buy and read by simply claiming to a judge that they are investigating terrorism. Sanders said that while the bill has wide support, the leadership in the House is not supportive and will not allow it to be voted on.

In response to Attorney General Ashcroft’s statement the Patriot Act will only be used against the “bad guy,” Sanders stated that in a country with a rule of law, we shouldn’t allow people like the President or the Attorney General to determine who the bad guys are.

In his concluding remarks, Sanders said that the “most important thing is to radically change the political culture in America”. The current administration, according to Sanders, has produced the “most disastrous environmental record” and another four years of Bush would mean the end of abortions, the privatization of Social Security, the bankruptcy of Medicare and the undermining of public education through vouchers.

All in all, Sanders claims, the Republicans and the right want to “move us back to the 19th century”. To do this, the next presidential campaign will focus not on the problems facing America, but by calling anyone who opposes the President unpatriotic and on dividing people through things like abortion and the Constitutional amendment to ban gay marriage.

Our job, according to Sanders, is to bring people together to “demand and discuss the major issues.”

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A student gets a massage during this year's Health Fair last Friday. There were a number of groups offering information and free services, as well as a band playing outside Chandler.

L. Tran/The California Tech

Prefrosh, Parents Face 'Beefed Up' Programs

By TAMMY MA

Caltech will welcome and host a new group of prefrosh starting this Thursday, April 15th through Saturday for Prefrosh Weekend 2004. Of the over 3,000 applicants to Caltech, approximately 500 students were accepted and 230 of them will be setting foot on campus this weekend to get a glimpse into the Caltech experience.

Stated Ray Prado of Undergraduate Admissions, "We have a great class coming in. They represent a strong interest in math, science and engineering. But we also have many people interested in music, sports...it's a really diverse class. We even have someone who raised show chickens and a dolphin trainer from Guam."

The prefrosh will be staying with hosts in all seven houses and be treated to (the oftentimes eclectic) dinners in the student houses. Each house has planned special social events for the would-be frosh, including ice cream socials, a casino night, midnight sports games, mini-golf, capture the flag

and tunnel tours.

On a more academic note, prefrosh will also get an opportunity to attend classes, meet with faculty, learn about research and premed programs at Caltech, tour labs and visit the club fair and a specially planned JPL event.

According to Michael Herrera, also of Undergraduate Admissions, one change to this year's program will be a "beefed up parents program." He added that, "In years past, parents sometimes felt like they weren't getting enough information. So this year, we're making more of an effort to reach out to them, with talks from Margo Marshak [Vice President of Student Affairs], security and the counseling center."

On Saturday, there will also be an all campus BBQ on Avery's north lawn, open to the entire undergrad community. It will hopefully serve as a mingling forum for the prefrosh and current students and for the prefrosh to further meet each other.

Franklin Awards Often Good Nobel Indicator

Continued from Page 1, Column 5

of absence to study molecular biology that initiated a successful career in genetics.

He began to study the genetic basis of behavior when his second daughter was born and whose personality was radically different from his first daughter. This sparked his curiosity as to how and to what degree our genetics dictates how we behave.

Based on his experiments and observations mating mutant flies, Benzer's lab has studied and pinpointed genes that govern everything from our circadian rhythms that determine the time of day we are at our peak (defining whether we are larks or owls) to courting behavior to memory.

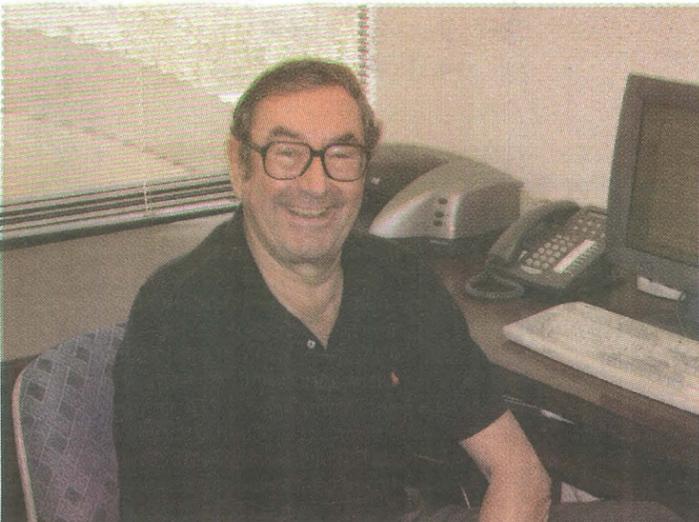
Currently, the lab is researching a few different projects, emphasizing genes that extend lifespan. For example, the lab has named a particular mutant *Drosophila*, *methuselah*, which is especially tenacious and can withstand more stresses, such as hunger and heat and also live longer than the average fly.

Dr. Gray is the Beckman Professor of Chemistry and founded Beckman Institute, here at Caltech. After being on the faculty at Columbia University, Professor Gray came to Caltech in 1966 and has been here since.

He chuckled when he stated that he has been the focus of many pranks from both undergrad and grad students throughout his career here. I was pleased to find that he was the author of *Chemical Bonds*, which I admit I really enjoyed because the book explained the topics in Chem 1a in a way that was very understandable.

He first chose to study metalloproteins because he was fascinated by their beautiful intense colors due to transition metals such as copper, that has a deep blue or purple color and iron that makes the protein orange or red. Then he focused his research on how the electron transport chain works because these proteins are crucial in maintaining life.

His favorite class that he teaches is Chem 153 which discusses and argues specific topics on spectroscopy and photochemistry. Professor Gray loves teaching because he believes that research and teaching are inextricably tied and interrelated. In his own words, "If you can't explain what you are researching to anyone, a man on the streets and four-year-old at a level they can understand, then you have no business then you do not truly understand the subject."



L. Tran/The California Tech

Professor Harry Gray, of *Chemical Bonds* fame, will receive a Benjamin Franklin Medal in Chemistry later this month.

Star Formation Questions Probed By GALEX Mission Researchers

Continued from Page 1, Column 2

the history of the universe and understand the origins of the some of the celestial objects in the sky.

"The mission design focuses on galaxy evolution and broader purposes," said Martin.

Even though astronomers know that, at a star's birth, gas is converted to create the star, the actual mechanism and process is unknown. Therefore, GALEX has delineated three goals for their project.

"First, we want to understand the method of using UV brightness to measure star formation rate," Martin said. Since the technology and approach in using the UV spectrum is relatively new, GALEX will work to calibrate this method and better learn how the information obtained can lead to new discoveries about star formation.

"With this method, we can analyze what happened in a particular time. Using an archeological analogy, we can see the fossils from history in the actual archeological layers instead of having it dug up and laid out in front of us on the floor," said Martin.

Stars often have different masses and larger stars tend to burn brightly and hotly, which also leads to a shorter lifespan. During star formation, a UV flash is emitted. Using the observance of the UV flash and the brightness of stars, the mission will be able to determine the relationship between the magnitude of the UV flash and the star formed.

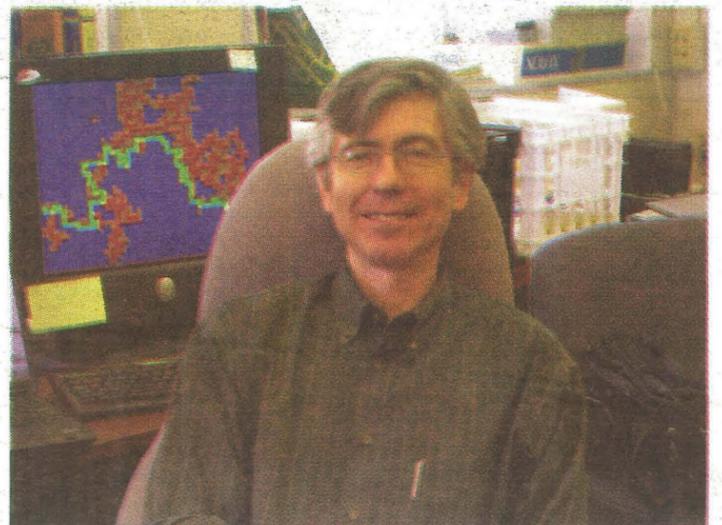
Through GALEX, Martin and his team also hope to calibrate the method to the known universe and find out about the history of the universe. Comparing the new with the old information, they can make a sort of timeline for the history of the galaxy through the history of star formation. Furthermore, the study of star formation contains a broader application for Martin.

"The history of star formation is also the history of the formation of chemical elements," said Martin.

Thirdly, the mission hopes to discover the mechanism behind star formation, how it all works. Currently, a question that

many astronomers wonder about is what triggers star bursts and causes stars to form. Many know that when galaxies merge or become unstable, stars are formed, but why this occurs is not known in detail.

Recently, GALEX has been able to observe the formation of new stars in the streamers of gas which are pulled off when two galaxies interact close to each other. Furthermore, they have been able to observe luminous-UV galaxies, which they can study to understand young galaxies such as those from the history of the universe. These are known to be different from present galaxies, but the reason why is unknown.



L. Tran/The California Tech

Dr. Chris Martin is the lead investigator on the GALEX Project. GALEX was launched April 28, 2003.

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