



K. Peng/The California Tech

Warner Leedy answers a question during the debate on Monday before Wednesday's election. Leedy emerged victorious in the ASCIT Presidential Race.

Leedy Takes ASCIT Presidency; Wyatt Triumphs in VP Election

By KEVIN BARTZ

Trumpeting their flagship themes of communication and representation, President-elect Warner Leedy '07 and Vice President-elect Michelle Wyatt '06 stormed to victory Wednesday in a hard-fought ASCIT election whose exact results will remain secret for at least two weeks after a surprise reinterpretation of the ASCIT Bylaws by the Election Committee.

"When I found out, it just took a second to sink in, and I'm still very excited," exclaimed Leedy. "My main reaction was just, 'Wow, this is awesome!'" Wyatt too was "surprised and pleased" to hear the results.

Attributing his success to his concise written statement and a solid performance at last Monday's debate, Leedy beat out upstart Billy Zdon '07 and ASCIT

veteran Ryan Farmer '06 in an election seen widely as a referendum on student housing. Leedy won popularity through promises to restore Dabney's DEI room and other renovations casualties, to pit continued opposition to freshmen in Avery and to put house presidents at the core of the legislative process.

It was the concreteness of her ideas, said Wyatt, that propelled her to victory. "I was just trying to say what I thought," she said. Wyatt's key initiative is a plan to have professors adopt standardized check-box forms to better outline class collaboration policies. She won out over Board of Control representative Anamaria Effler '06 and newcomer Greg Stachelek '07.

Leedy and Wyatt are said to have won broad mandates, but the exact margin remains unknown after an eleventh-hour

reinterpretation of the ASCIT Bylaws. Breaking with tradition, the Election Committee on Saturday reconstrued a nebulous line in the Article VIII, Section 8 as an instruction to temporarily seal results from the public.

Will Coulter '05, the Election Committee member who coordinates ASCIT's primary Internet-based balloting mechanism, refused any comment on the decision's legal basis. Chairperson Julia Ma '06 called it the consequence of a strict reading of the bylaws, adding that she hopes to see the wording changed in the future.

The issue now falls to the Ex-

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Counseling Sponsors Mental Health Series

By CHRISTINE CHANG

Along with a reputation for high quality science and research, Caltech has earned a name for the intense stress it places on the members of its community. Aware of the taxing demands made on the students, the Counseling Center organized a series of outreach programs designed to educate on methods of handling the unique trials of Caltech. As part of this outreach, it will sponsor a series of Mental Health workshops through the months of February to May at noon in Winnett Lounge to address the needs of a student.

"This is an outreach to the students, a kind of extension of the Counseling Center," said Kevin Austin, Ph.D., Senior Director of Counseling and Health Services.

The issues to be covered through the series are broad,

ranging from Jungian psychology to an introduction to mindfulness to psychotherapy and the experimental sciences. The structure of each workshop will vary, as some, such as the relaxation and mindfulness workshops, will be more hands-on than others. Each lecture, however, has been tailored to Caltech students through a collaboration between the presenters and the Counseling Center. For example, the relationship workshop will deal directly with specific issues such as the gender ratio and the struggle of graduate students to balance committed relationships with work.

"They're all fine workshops," said Lee Coleman, Ph.D., Assistant Director of Counseling and Training.

Most of the workshops will be held by private practitioners from

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Tuition Hike Questions Answered After Protest

By ZHIYUN GUAN

Students brought their questions and concerns over the recently announced tuition increase to a meeting in Winnett Lounge on Tuesday. This talk followed a recent student protest over the higher tuition, and gave students the opportunity to discuss the issue with the staff who helped make the decisions behind the increase.

Changing the tuition rate is a weighty decision that results from a lengthy process, according to Erica O'Neal, an Assistant Vice President of Student Affairs. A committee consisting of faculty, administrators, and students looks over the costs of operating Caltech, and put forth a recommendation for tuition, room, and board for the next academic year, she said. This year, the committee's recommendation went through, leading to the rise in tuition. "We're trying to figure out how to price Caltech accurately," O'Neal explained. "How are we going to cover our needs financially, but not create unnecessary

financial burdens on you and your parents? It's a very delicate balancing act."

Many students were dissatisfied by both the higher fees and the reasons for the increase. One costly factor that caused concern was the upcoming South House renovation. As one student pointed out, "Many of who will be paying the increase for three years will never see the new houses" before graduating. O'Neal admitted that the renovation caused inconvenience, but "there's never a good time for starting a housing renovation project. The end product makes it all worthwhile."

Events that improve the quality of life for students, such as alternative spring break, Convocation, and carnival also contributed to rising costs, O'Neal pointed out. Some students questioned whether the increase in cost of these events was substantial enough to warrant raising tuition; "It's not like we have 200 events," one said. In response, O'Neal explained that Student Affairs "feels com-

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K. Peng/The California Tech

Students march on Beckman Auditorium prior to protesting tuition hikes.

Women's Experiences Related By Ensler's *The Vagina Monologues*

By JON MALMAUD

"I was worried about what we think about vaginas, and even more worried that we don't think about them...[they're] like the Bermuda Triangle. Nobody ever reports back from there." So began the *Vagina Monologues*, a set of funny and strangely touching plays by Eve Ensler in celebration of the vagina.

Ensler began interviewing hundreds of women from pre-pubescent to post-menopausal about what they think "their vagina would wear and say" after she became concerned that females were not paying enough attention to "down there." Many women who had never spoken about "down there" before gushed out touching stories about their (lack of) sexuality to her. Ensler then combined each set of similar stories into a single monologue. Around twenty members of the female Caltech community known as "Vagina warriors", including biology professor Mary Kennedy and interhouse chairwoman Kim Popenorf, read one monologue

each to a packed Beckman Auditorium last Friday evening.

Some monologues were so humorous and heart-warming that even the male half of the audience was laughing and sighing. One piece, titled "The Flooding", was told to Ensler by a 76-year-old woman who had tried to forget about "down there" for 60 years after her teenage boyfriend kicked her out of his new car when she "stained" it during a kissing session.

Another piece, called "The Angry Vagina", was performed brilliantly by Caltech senior Sam Lawler in a leather jacket and red bandana screaming at the audience about just how angry her vagina was at being so helplessly and coldly handled during a medical examination. She also was deeply unsatisfied with feminine hygiene products. "You gotta gain my vagina's trust... You can't stuff dry cotton in there... I don't want my [vagina] to smell like grain." She also expressed desire for underwear with a certain pleasure-giving mechanism built-in.

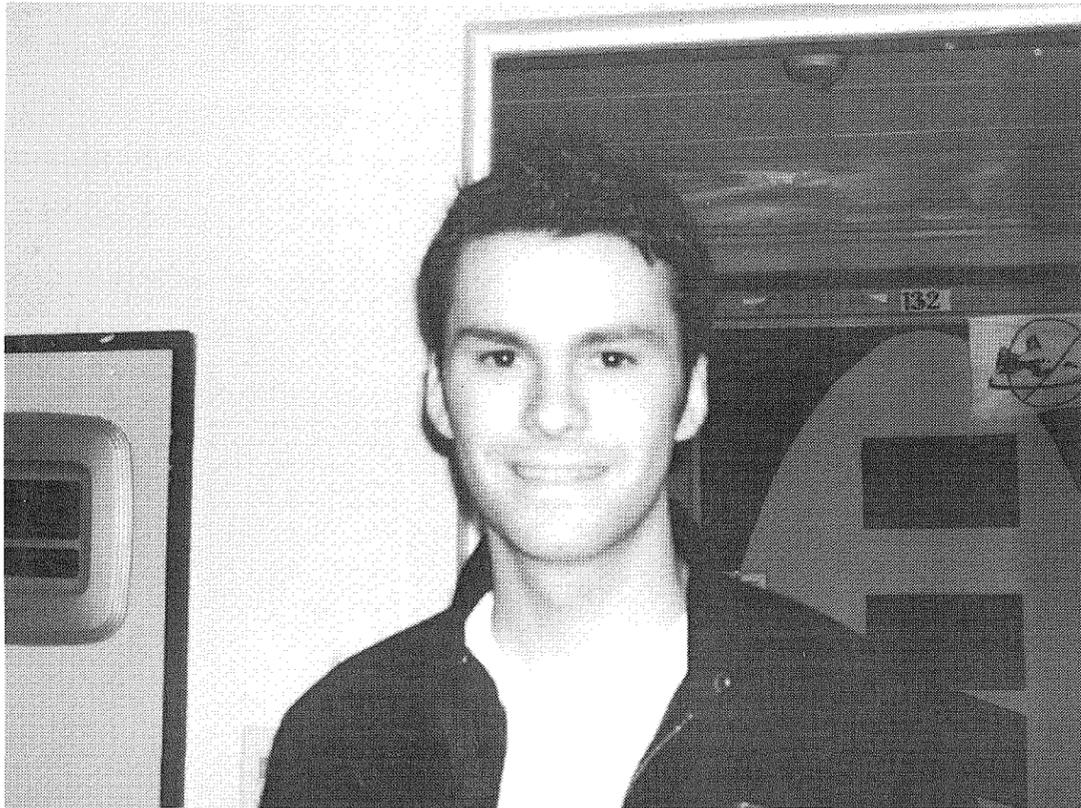
Other monologues were even

more daring. One related how a seven-year-old South American girl was being raped by a family friend when her father shot and permanently paralyzed the assaulting man. She was only able to psychologically recover when she has a lesbian encounter with an experienced woman who showed her the vagina does not only bring pain.

Most outrageous of all was the absolutely true story of a tax attorney turned lesbian sex worker. Dissatisfied with the lack of moaning (at least the positive kind) in the lawyer trade, she "got kinda brilliant" at getting women to "pay [her] to dominate them." For the next five minutes, the speaker vividly demonstrated what she meant by moaning into the mic with such realism and enthusiasm that you could be sure the audience would be full of blushing faces if the lights had been on.

Along the same lines was an impassioned plea for women to eliminate the pejorative sense of the C-word and take it up for their own. She enticed the audience to

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L. Tran/The California Tech

Incoming ASCIT President Warner Leedy has pledged to improve relations between the BoD and the IHC. He also wants to bring back weekly BoD dinners in each of the seven houses.

Increased Communication Key To Both New ASCIT Officers

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Executive Committee, ASCIT's judicial arm, which is expected to overturn the Election Committee's ruling. If it does not, the results will remain sealed until all of the year's ASCIT-managed elections have closed--at least two weeks away, though possibly longer.

In that scenario, outgoing President Galen Loram '05 pledged to fix the problem with an omnibus bylaw amendment package this spring. "I hope that this interpretation won't be made permanent," he maintained, "as I'm a strong believer in transparency, which requires making as much data as possible available to the students."

In fact, the Election Committee's reinterpretation was not the only problem plaguing this election. By the bylaws, only ASCIT members may vote for president, but a technical glitch in ASCIT's Internet voting granted ballots to anyone with a Caltech UID, including professors and graduate students.

"I am scared that such a thing could happen to our elections," said ExComm Chairman and three-time ASCIT candidate Abe Fetterman '05. "If I was on the ballot, I would definitely have put in a protest. However, those who were on the ballots seem to think that the election was fair, and that is enough reassurance for me."

But all the post-election wrangling didn't blunt Leedy's and Wyatt's electoral victories. "I'm really excited about Warner's presidency," lauded Loram. "He has all the qualities needed in spades. He's not only approachable, friendly and a great communicator, but also a person who passionately wants to represent the students' views and has the drive to make sure that they're heard."

Leedy is a relative newcomer to ASCIT, but has earned broad respect in student circles through his reputation as a vinyl record deejay, skill as an *a capella* singer and work on the Freshman Admissions and Axline Presidential Scholarship Committees.

His first move as president will be to buy new DVDs with funds from ASCIT's recent dues hike. In addition, he plans to start having weekly dinners with each of

the seven on-campus houses, evoking memories of the famous "BoD dinners" launched by ex-President Ted Jou '03 but later abandoned. "It's about getting rid of the idea that ASCIT is disconnected from the students," he said.

One of Leedy's longer-term goals is to smooth notoriously tense relations between the Board of Directors and the Interhouse Committee. "I'm going to call a meeting with the IHC to discuss how we can cooperate better," he pledged, "because, from what I've heard, [relations are] bad right now." He will also move to incorporate the full hand of house presidents into BoD meetings, committee gatherings--into any body with legislative sway.

Wyatt's first move as vice president will be to proliferate standardized collaboration forms among professors in core courses, working through academic committees in individual depart-

ments. "We'll first see whether the professors find them overly restrictive," she said, "and if so, we could work with them to come up with something better."

Wyatt's vice presidency doubles as a BoC chairmanship. Although much of her judicial style remains shrouded in the BoC's secrecy, she prides herself on her organizational and communication skills. "It was working with defendants when I first realized that I was comfortable assuming the role of coordinating something," she recalled. "It was that moment when I realized I was acting as a BoC chair would."

A former BoC chair himself, Loram heralded Wyatt's thoughtfulness. "From the cases that I've sat on with her on the Board of Control, I've found her to be both thoughtful and caring," he said. "She cares not only for students while they're here, but also for making sure that we end up with the right ones."



L. Tran/The California Tech

BoC Chair-elect Michelle Wyatt plans to encourage professors to use a standardized collaboration form to prevent misunderstandings about the policies, which vary from class to class.

Neural Control Of Prosthetics Studied

By ROBERT TINDOL

PASADENA, Calif.--Another milestone has been achieved in the quest to create prosthetic devices operated by brain activity. In the July 9 issue of the journal *Science*, California Institute of Technology neuroscientists Sam Musallam, Brian Corneil, Bradley Greger, Hans Scherberger, and Richard Andersen report on the Andersen lab's success in getting monkeys to move the cursor on a computer screen by merely thinking about a goal they would like to achieve, and assigning a value to the goal.

The research holds significant promise for neural prosthetic devices, Andersen says, because the "goal signals" from the brain will permit paralyzed patients to operate computers, robots, motorized wheelchairs--and perhaps someday even automobiles. The "value signals" complement the goal signals by allowing the paralyzed patients' preferences and motivations to be monitored continuously.

According to Musallam, the work is exciting "because it shows that a variety of thoughts can be recorded and used to control an interface between the brain and a machine."

The Andersen lab's new approach departs from earlier work on the neural control of prosthetic devices in that most previous results have relied on signals from the motor cortex of the brain used for controlling the limb. Andersen says the new study demonstrates that higher-level signals, also referred to as cognitive signals, emanating from the posterior parietal cortex and the high-level premotor cortex (both involved in higher brain functions related to movement planning), can be decoded for control of prosthetic devices.

The study involved three monkeys that were each trained to operate a computer cursor by merely "thinking about it," Andersen explains. "We have him think about positioning a cursor at a particular goal location on a

computer screen, and then decode his thoughts. He thinks about reaching there, but doesn't actually reach, and if he thinks about it accurately, he's rewarded."

Combined with the goal task, the monkey is also told what reward to expect for correctly performing the task. Examples of variation in the reward are the type of juice, the size of the reward, and how often it can be given, Andersen says. The researchers are able to predict what each monkey expects to get if he thinks about the task in the correct way. The monkey's expectation of the value of the reward provides a signal that can be employed in the control of neural prosthetics.

This type of signal processing may have great value in the operation of prosthetic devices because, once the patient's goals are decoded, then the devices' computational system can perform the lower-level calculations needed to run the devices. In other words, a "smart robot" that was provided a goal signal from the brain of a patient could use this signal to trigger the calculation of trajectory signals for movement to be accomplished.

Since the brain signals are high-level and abstract, they are versatile and can be used to operate a number of devices. As for the value signals, Andersen says these might be useful in the continuous monitoring of the patients to know their preferences and moods much more effectively than currently possible.

"These signals could also be rapidly adjusted by changing parameters of the task to expedite the learning that patients must do in order to use an external device," Andersen says. "The result suggests that a large variety of cognitive signals could be interpreted, which could lead, for instance, to voice devices that operate by the patients' merely thinking about the words they want to speak."

Andersen is the Boswell Professor of Neuroscience at Caltech. Musallam and Greger are both postdoctoral fellows in biology at Caltech; Corneil is a former researcher in Andersen's lab who is now at the University of Western Ontario; and Scherberger, a former Caltech researcher, is now at the Institute of Neuroinformatics in Zurich, Switzerland.

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Women's Tennis Wins Opener; Men's Basketball Passes 100 Point Mark; Women's Basketball Has Tough Loss

By MIKE RUPP

Caltech Sports Information
January 31, 2005

Men's Basketball hits century mark in thrilling shootout with Redlands

In the most anticipated game of the season, the Men's Basketball team didn't disappoint in treating its fans to a special night.

A standing-room only crowd poured into the Braun Gym on Saturday night to watch a game that featured full-court presses and traps, fast breaks and thrilling plays on almost every possession, as Caltech lost 107-155.

Two of the most exciting plays for Caltech were provided by Freshman Forward Bryan Hires. With 9:48 to go in the first half, Hires blocked a Redlands three-point shot from behind, then recovered the rebound and took it in for a lay-up and the foul. Later, with 14:28 left in the second half, Hires blocked and rebounded another Redlands three point attempt, which he dished to Junior Day Ivy for the easy basket. Hires finished with a game-high 21 points, shooting a perfect nine for nine from the floor and three for three from the free throw line.

It was the first time the Caltech Men's Basketball team has passed the 100 point mark in a regular season game since a 104-53 win over Life College in 1974. It was the first time in 51 years the team has scored over 100 points against a SCIAC opponent.

Earlier in the week, the team

lost to Occidental College, 33-77. Hires had seven points and five blocks in that contest.

The team plays next this Wednesday at Cal Lutheran. Their next home game is Saturday against La Verne. Tip-off is scheduled for 7:30 PM.

Student-Athlete Spotlight: Women's Basketball's Andrea Kung

Senior Forward Andrea Kung has been a key member of the Caltech Women's Basketball team since joining up her Sophomore year.

A Chemistry major from Edison, New Jersey, Kung attended Caltech largely because of the superior education and greater array of career options that would be available to her upon graduation.

Kung describes her experience with the team as "a good place to take out your frustrations. [The team is] probably why I stayed at Caltech."

For her career, Kung has appeared in 63 Women's Basketball games and averages 2.9 points and 2.5 rebounds a game. Kung's contributions to the program extend far beyond mere numbers. Head Coach Sandra Marbut comments:

"A year ago, Andrea was the driving force behind Caltech even having a team. Since my first day was October 1st and practice started 14 days later, Andrea really spearheaded the efforts over the summer. Without her hard work and persistence, some of the ladies may not have come out

for the team. I credit Andrea with keeping the Women's Basketball program on track through a number of staffing changes."

Kung will graduate with her class this June. She plans on taking some time off after graduation before pursuing her career.

Women's Basketball hangs tough in loss to Redlands

For the first 18 minutes of their game against Redlands this past Saturday, the Caltech Women's Basketball team enjoyed a glimpse into a competitive future.

Freshman Lindsay King converted a Rene Davis pass into a three-pointer with 1:49 left in the first half as the team tied the game at 26.

Though Redlands would rally to eventually win by a score of 41-74, good efforts were given by Freshmen King, Davis and Jessica Roberts, and Junior Shelby Montague, who had eight rebounds and three steals.

King led the team in scoring with 15 points. She added six rebounds, two steals and two assists. Davis had a career-high six assists to go along with her six rebounds and three steals. Roberts added 14 points on five-for-eleven shooting.

Earlier in the week, the team lost

to Occidental College, 35-78. Roberts, assuming the role of sixth man for the game, came off the bench to score a team-high 14 points and six rebounds.

For the week, Roberts led the team in scoring with 14 points-per-game and a 39% shooting average from beyond the arc. King averaged 11 points and shot 42% from the three-point arc. Davis lead the team in assists (seven) steals (six) and was second in rebounding (5.0 rebounds per game).

The team plays its next game this Thursday evening at Cal Lutheran University. Their next home game is this Saturday night against the University of La Verne. Tip-off is at 5:00 PM.

Women's Tennis wins opener against La Sierra

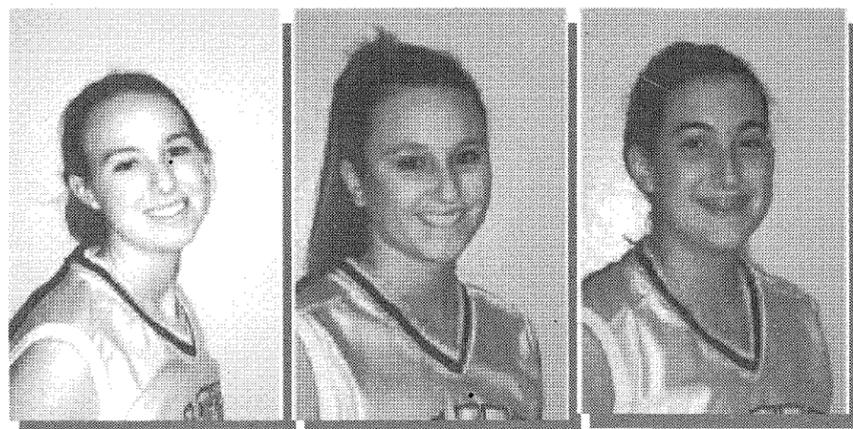
In their season opener this past

Sunday against La Sierra University, the Caltech Women's Tennis team looked sharp, winning six matches to three.

Junior Jenny Hsiao won a thrilling back-and-forth match at #2 singles, 7-6, 2-6, 10-7. Caltech won singles matches on seeds three through six, all in straight sets.

At #1 doubles, Ann Leu and Jenny Hsiao teamed up to win a hard fought match, breaking an 8-8 tie with a final score of 9-8 (7-5). It was more than enough to put Caltech over the top.

Caltech's next match comes this Saturday at home against Masters College. The match is scheduled to begin at 9:30 AM. Their conference opener will be the following Saturday, February 12th, at home against Cal Lutheran, also at 9:30 AM.



Women's Basketball (from left to right). Freshmen Jessica Roberts, Lindsay King and Rene Davis all put up strong numbers this week.

courtesy of M. Rupp

The Caltech Women's Center and Caltech Athletics invite you to celebrate

National Girls and Women in Sports Day
with Anita DeFrantz
of the
International Olympic Committee
as she addresses
"Time and Space in Sports"

Named one of the most powerful women in amateur sports, Anita L. DeFrantz is an attorney and president of the Amateur Athletic Foundation, based in Los Angeles. DeFrantz is a member of the International Olympic Committee (IOC) and serves as chairwoman of the IOC's Women and Sport Working Group. She served as a member of IOC's executive board, and became the organization's first woman and African American vice president. DeFrantz was a member of the 1976 and 1980 U.S. Olympic teams, winning a Bronze Medal for rowing in 1976.

Wednesday, February 9, 2005
4:00-4:30 p.m. Reception
4:30-5:30 p.m. Presentation
Braun Gym

For More Information Contact:
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Hard X-Ray Telescope Up For Final NASA Review; Prof. Harrison to Lead

By ROBERT TINDOL

PASADENA, Calif.--If all goes well with a technical study approved by NASA for this year, an innovative telescope should be orbiting Earth by the end of the decade and taking the first focused high-energy X-ray pictures of matter falling into black holes and shooting out of exploding stars. Not only will the telescope be 1,000 times more capable of finding new black holes than anything previously launched into space, but it will also give us an unprecedented look at the origins of the heavy elements we're all made of.

Named the Nuclear Spectroscopic Telescope Array--or NuSTAR, for short--the project has just been pegged by NASA for detailed study in the competitive Small Explorer Program (SMEX), which seeks out new technologies and new proposals for space missions that can be launched at low cost. NASA announced earlier this week that an unrelated mission called the Interstellar Boundary Explorer will be launched by 2008, and that NuSTAR will be given an up-or-down decision by next year for launch in 2009.

According to California Institute of Technology astrophysicist Fiona Harrison, the principal investigator of the NuSTAR project, an April high-altitude balloon flight in New Mexico should help to demonstrate whether the advanced sensors invented and built at Caltech are ready for space.

The balloon phase of the project sports the intuitive acronym HEFT (for High-Energy Focusing Telescope), and will mark the first time that focused pictures at "hard X-ray" wavelengths will have been returned from high altitudes. In fact, the HEFT data from the balloon is expected to be superior to any data returned so far from satellites at high X-ray energies.

NuSTAR will be much better than the balloon experiment, Harrison explains, because it's necessary to get above Earth's atmosphere for extended periods to get a good view of the X-ray sky. NuSTAR will orbit Earth at an altitude of about 300 miles or so for at least three years.

The reason that the new technology will be superior to that employed by existing X-ray satellites for certain observations is that high-energy, or hard, X rays, tend to penetrate the gas and dust of galaxies much better than the soft X rays observed by NuSTAR's forerunners. Thus, NuSTAR will get the first focused hard X-ray images for three basic science goals:

--The taking of a census of black holes at all scales. NuSTAR will not only count them, but will also measure the "accretion rate" at which material has fallen into them over time, and the rate supermassive black holes have grown.

--The detecting and measuring of radioactive stuff in recently exploded stars. These remnants of supernovae will provide a better idea of how elements are formed in supernova explosions and then mixed in the interstellar medium, which is the space between stars. NuSTAR will be especially good at observing the decay of titanium to calcium, which tends to be produced in the region of a supernova where material either is ejected forever from the explosion or falls back inward to form a compact remnant of some sort. NuSTAR will thus be an especially good probe of this region, and the data returned will contribute directly to NASA's "Cycles of Matter and Energy" program.

--The observing and imaging of the highly energetic jets that stream out of certain black holes at nearly the speed of light. Coupled with observations from the Gamma-Ray Large-Area Space Telescope (GLAST), NuSTAR will provide data to help scientists explain this still-enigmatic but powerful phenomenon.

The technical difficulties of obtaining hard X-ray images has been overcome with groundbreaking work in various Caltech labs, including that of famed inventor Carver Mead, who is the Moore Professor of Engineering and Applied Science, Emeritus, at Caltech. Both HEFT and NuSTAR will rely on an array of coaligned conical mirrors that will focus X rays from about 20

to 100 kilo-electron-volts on a pixel detector made of cadmium zinc telluride. The sensor is segmented into squares of about half a millimeter each, and these will take thousands of individual readings of X-ray photons and turn them into electronic signals.

"With this mission, we'll open the hard X-ray frontier and look at things never seen before," says Harrison, who is an associate professor of physics and astronomy at Caltech.

In addition to Caltech, the other participating organizations and universities are the Jet Propulsion Laboratory (managed by Caltech for NASA), Columbia University, the Stanford Linear Accelerator (SLAC), the Lawrence Livermore National Laboratory, Sonoma State University, the University of California at Santa Cruz, and the Danish Space Research Institute. NuSTAR's spacecraft will be built by General Dynamics Spectrum Astro.

JPL handles project management, the metrology system, and the extensible mast, and is involved in the mission's science. The mast is based on a previous JPL mission, the Shuttle Radar Topography Mission.

The selected proposals were among 29 SMEX and eight mission-of-opportunity proposals submitted to NASA in May 2003. They were in response to an Explorer Program Announcement of Opportunity issued in February 2003. NASA selected six proposals in November 2003 for detailed feasibility studies.

The Explorer Program is designed to provide frequent, low-cost access to space for physics and astronomy missions with small to mid-sized spacecraft. NASA has successfully launched six SMEX missions since 1992. The missions include the Reuven Ramaty High Energy Solar Spectroscopic Imager, launched in February 2002, and the Galaxy Evolution Explorer, launched in April 2003 and led by Caltech physics professor Chris Martin.

NASA's Goddard Space Flight Center, Greenbelt, Md., manages the Explorer Program for the Science Mission Directorate.

A Little Reflection on the Caltech Social Life

By TAMMY MA

Every once in a while, a newspaper editor will run into the singular predicament of not having enough articles to fill the paper. We already have many tricks up our sleeves that we utilize every week to make the layout of the paper look good, and yet, sometimes, we just plain fail. After scouring the web for applicable pictures, and hounding my writers, and even putting in a press release or two (see left), I still have two columns to fill. And thus, once in a long while, an editor is forced to pick up a pen, and god forbid, write...

As a senior, I can look back on the four years I have spent at Tech, and reminisce. Was it what I expected from college? Did I enjoy it? Am I a better person for it? I guess the answers would be: No, kind of, and I may not be a better person, but I'm certainly much more bitter.

I think for all of us, Tech changes us in ways we never expected. Sure, we've probably become much better scientists, we've learned how to deal with super heavy workloads, prioritize, procrastinate, determine the opportunity cost of actually finishing a problem set, etc., but we've also socially changed a lot.

Caltech is a great place because it's so accepting. Most people will find a very comfortable home in one of the seven houses. Where people were shunned as nerds in high school, they can come to Caltech and be totally accepted by the people around them. For many, that makes for a huge confidence boost. But our whole social atmosphere is so unique, so strange, that I wonder how people will deal when they leave this bubble and get hit with the harsh reality of real life.

I, for one, have become more socially awkward after my four years here. No longer can I easily go up to a group of people I don't know and start conversations. In fact, my grasp of the English language has decreased considerably. Not only do I not write on a regular basis, I'm finding my speaking vocabulary to have become quite limited. In any case, it doesn't bode well for my social aptitude.

The school has also made me more cynical. I was happy-go-lucky back in the day, maybe even as recent as freshman year. But then the school got to me. Seeing

the same (at most) 200 faces all the time, having the same conversations, the overall lack of free time, the drudgery of problem set after problem set really got to me. And now, in social situations, even away from Tech, I take a slightly more sarcastic stance, and I'm sure that makes me less appealing to all the other people who just want to have fun.

Further, I'm not even sure I remember how to flirt anymore. Sure, I can jump into a guy conversation and make guy small talk (you know, about video games, football, and video games, and football), but batting my eyelashes and smiling coyly? I'm not sure I've even done that since day one at this school.

Not to mention dancing. I was definitely a much better dancer in high school. The concepts of rhythm and coordination have gone out the door along with the English language.

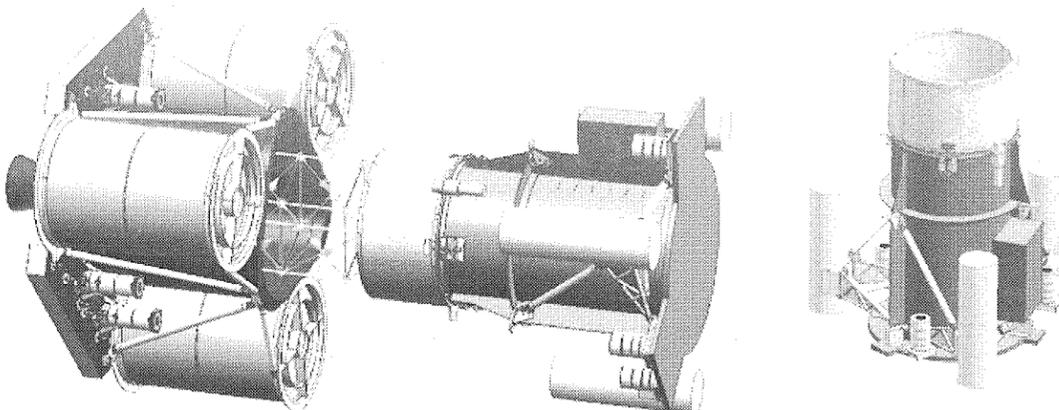
I was having a conversation with one of my guy friends the other day, and he mentioned how much his standards have lowered since being at Caltech for four years. Girls he never even would have given a second thought to in high school now seem attractive, even hot. Part of the reason is, of course, the ever infamous ratio, but quality has just as much to do with it as quantity. Why is it exactly that the Caltech population is so ugly and so...weird? We've all used the disclaimers, "Oh, she's a Tech girl," or "The odds are good but the goods are odd," in reference to the undergraduate population, but why are they so applicable? Is being smart instantly a ticket to being weird? Or completely disregarding your appearance?

I guess it's kind of sad, when our school needs to offer social confidence classes, and people show up to the career fair not wearing shoes. Sometimes I wonder why our college experience is so different from those of our friends from other schools. Why did we choose to spend the supposedly best four years of our lives working and working instead of working a little and partying a lot?

It's not to say I haven't enjoyed my time at Tech. The people here are great, and as much as I detest the social environment here, I do fit in. But I do hope that graduate school will be better, and I do hope that at some point, I'll be able to speak English again.

NuSTAR
a NASA Small Explorer

The Nuclear Spectroscopic Telescope Array



courtesy of www.nustar.caltech.edu

(Top) NuSTAR will carry the first focusing hard X-ray (6-80 keV) telescope. It will eliminate high detector backgrounds, allow true imaging, and permit the use of compact high performance detectors. The result: a combination of clarity, sensitivity, and spectral resolution surpassing the largest observatories that have operated in this band by orders of magnitude.

(Bottom) The NuSTAR instrument is an array of four co-aligned hard x-ray mirrors, coated with depth-graded multilayers, focusing onto four cadmium-zinc-telluride pixel detectors that are separated from the mirrors with a nine meter mast.



courtesy of K. Wang

Michael Woods of Ruddock House prepares to run the 4x400, while Rene Davis of Fleming shows us how to pose with the baton at the Interhouse Track Meet last Tuesday night.

An Eagles Fan Laments Another Lost Year, Opportunity to Win Super Bowl

By HAMILTONY FALK

Like a punch in the stomach followed by a kick in the face.

That's what it feels like to watch your team lose the Super Bowl on a last second interception after finally making the big game after three NFC championship losses.

I consider myself a bit of an Eagles fan, I watch them play (the only game I missed this season was the loss to Pittsburgh, I had a required geology field trip) I wear their jerseys (even a custom made non-superstar player's) and merchandise, I follow all the news, I obsess about them more than is probably healthy. In previous years I'd had trouble dealing

successfully at this goal. This year I was sure we could do it. We got upgrades on both offense and defense in the off-season, secured home field advantage throughout the playoffs after 14 games and even dominated the NFC championship game that had been the curse of Philadelphia for the last three years.

Everyone loved the Patriots, their coaching, their media friendly quarterback, and especially the way they could win three championships in four years (never mind that the year they'd failed to win the Super Bowl they had failed to qualify for the playoffs).

Our offensive catalyst was injured, but declared he would be

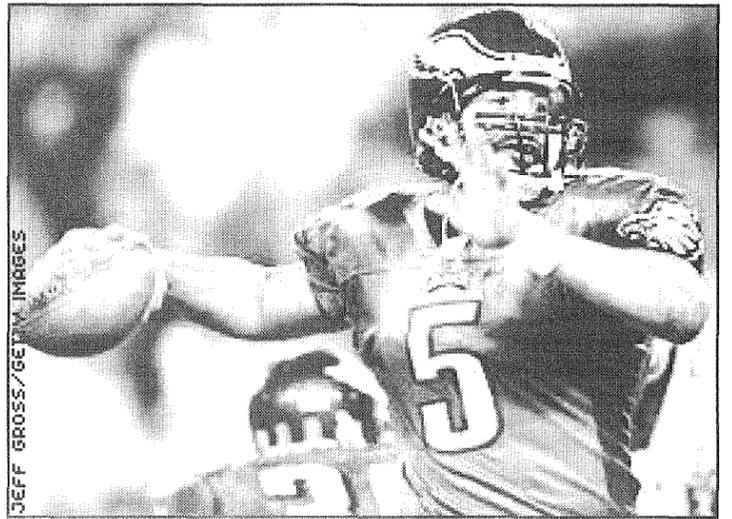
I still had faith in them.

So I went into the game feeling the mix of hope and fear known to any Eagles fan. I wanted them to win, I believed they could win, but I also have followed this team for many years, and know the history before that.

The Eagles always seem to falter just when you need them most. Nevertheless, this could be it, and I was ready. I waited for the game to start (Super Bowls always start later than they claim they will, pre-game hype takes time) and my stomach was in knots. The game starts well, at least from the standpoint that the Eagles are underdogs. No one scores for quite some time, then a TD pass from Donovan to "Little John" Smith, (that's his official listed name) the second year tight end. Eagles up 7-0.

Then Todd Pinkston, the small WR constantly pummeled by media and fans for his shortcomings, makes several important and acrobatic catches. The Eagles are picking on mediocre corner Randall Gay (I'm not making that name up) with passes. Even better, Tom Brady (described as "A God, or merely Immortal?" by the media this week) sloppily fumbles, and a pile forms on top of him and the ball. A comical moment occurs when Eagles defensive tackle Darwin Walker pulls the wall out and dances up field, while the refs continue searching through the players in the pile for the ball. Eventually they notice, and declare it the Eagles ball. One Eagles fan in the room with me is so overcome with pleasure at these events that he shouts "Killer Clowns from Outer Space!"

Then suddenly the Patriots have the number of our offense, driving back down the field. They score on a mental error by Eagles Pro Bowl cornerback Lito Sheppard who leaves his man open in



Donovan McNabb threw for 351 yards and three touchdowns, but he also tossed three costly interceptions.

the end zone, tie game. The Eagles decide to run the ball to finish the first half quickly, not taking the last minute or so to really attempt to score again, which is a disappointing lack of aggressiveness. Still, the much hyped New England team isn't ahead, and if Donovan can get a little more accuracy in his throws, the game could easily go the Eagles way in the second half.

However, the second half starts badly, a touchdown pass to a linebacker playing as a tight end puts the Patriots up, as the Eagles fall behind for the first time in the playoffs. The offense can't find anything, and Donovan's accuracy is still having problems, but at least the defense is getting back

Dillon scores a touchdown, and wince as the offense again fails to do anything with the ball. The defense manages to come alive, squashing the Patriots in the end zone and forcing a field goal to keep the game within 10 points. The Eagles need to score to keep the game alive and a beautiful catch and run by TO provides hope.

Then disaster strikes, as McNabb throws a ball right into the waiting hands of Patriots linebacker Tedy Bruschi. All seems lost, but the defense steps up and forces a three and out, giving the ball back to the Eagles, who begin to drive. Donovan looks flustered, but adequate, eventually getting a score with a 30 yard TD pass to

WR Greg Lewis, but the clock has run dangerously low.

Still, hope is there, as the Eagles line up for the on-sides kick.

It takes a higher bounce than normal, and the Patriots grab it from the air. As my knees shake and my knuckles turn white the Eagles defense again stops the Patriots from moving, but now the Eagles are out of time outs. A punt, a play or two from deep in their own territory, and a Hail Mary pass into the arms of a waiting Patriots safety, and there it is. I'll have to wait until next year once again. A punch in the stomach, and a kick in the face.

"The Eagles always seem to falter just when you need them the most."



Deion Branch had 11 catches for 133 yards and was named the Super Bowl MVP.

with playoff losses, but with luck I wouldn't have to deal with that year.

I had promised to avoid punching any fire stations (the reason for my bloody knuckles after last year's loss to Carolina) and I did

healthy, and would play, and he did. Our defense had fixed the problems with its run defense, and looked primed to show up big in the big game. I couldn't believe the Eagles were seven point underdogs (according to Vegas) but

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The Beckman Political Internship

The Beckman Political Internship will be available again this summer. The internship, supported by friends of Arnold O. Beckman, will pay a stipend of \$5,000. It allows a selected intern to spend the summer working in the office of a politician or a government agency and to see from the inside the process of government. The applicant is expected to make arrangements with the appropriate political persons or organizations. The internship is open to any Caltech undergraduate who intends to be a student next year.

If interested, submit a proposal describing where and how you would use the stipend along with one faculty recommendation, to the Deans' Office, 210-87, or email machang@caltech.edu, by MONDAY, MARCH 28, 2005

Caltech Idol Contest

The Tech Express is holding their second annual Caltech Idol Contest! The contest will be held on March 9th, 2005 from 11 am to 3 pm, outside of the Tech Express. The contest is open to all undergrads, but the entire campus is invited to come watch and help themselves to the free food and great prizes. Last year's winner will be participating again this year, and the Hawaiian Club Hula girls will also perform.

Caltech Public Events:

Coming Soon ...

Art Spiegelman
Comix 101
Wed, Feb 9, 8pm, free

Ologundê
Sat, Feb 12, 8pm
\$22, 18, 14

California Quartet
Sun, Feb 13, 3:30pm
free

Soylent Green
film + discussion
Tue, Feb 15, 8pm, free

Measure for Measure
Feb 18 - Mar 5

For more information on events see <http://events.caltech.edu>

February Events at the Caltech Women's Center

National Girls & Women in Sports Day with Anita DeFrantz
Wednesday, February 9, 2005
4:00 Reception, 4:30pm Lecture; Braun Gym

Named one of the most powerful women in amateur sports, Anita L. DeFrantz is an attorney and president of the Amateur Athletic Foundation, based in Los Angeles. DeFrantz is a member of the International Olympic Committee (IOC) and serves as chairwoman of the IOC's Women and Sport Working Group. She served as a member of IOC's executive board, and became the organization's first woman and African American vice president. DeFrantz was a member of the 1976 and 1980 U.S. Olympic teams, winning a Bronze Medal for rowing in 1976. (co-sponsored by the Women's Center & Caltech Athletics). No RSVP needed.

Reel Women Movie Series:
Mean Girls: Mind Games
Thursday, February 10, 2005
12 noon
Women's Center, 265 Center

for Student Services

"Bullies" have traditionally been recognized, in schoolyard lore, as physically imposing and usually male figures, but often overlooked is the verbal abuse or emotional manipulation that is carried out by girls every day. This film follows five groups of girls in highly different school and life situations, all affected by this form of social bullying. No RSVP needed.

A Women's Best Defense

February 13

1:00 - 5:00

Women's Center, 265 Center for Student Services

One in every three women in Los Angeles County will be assaulted in her lifetime. This is a frightening statistic, but each woman has the power to decrease her chances of becoming a victim of violent crime. This introductory workshop features skills for avoidance, deterrence, and resistance of physical and verbal assault. RSVP required! To sign-up please call ext. 3221 or email: wcenter@studaff.caltech.edu

Women's Health and Wellness:
The Body Beautiful

Thursday, February 17

12 noon

Women's Center, 265 Center for Student Services

Diane Gudermuth, an Integrative Body Therapist, will help participants evaluate their body image and she will share techniques on how to have a loving attitude toward our bodies. RSVP required! To sign-up please call ext. 3221 or email: wcenter@studaff.caltech.edu

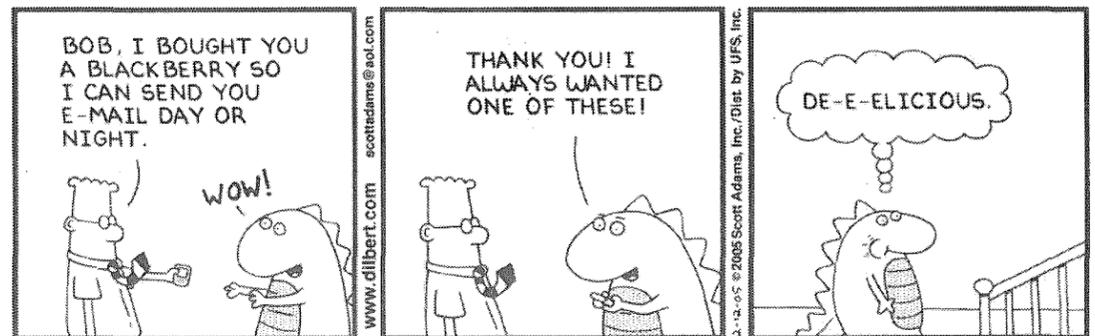
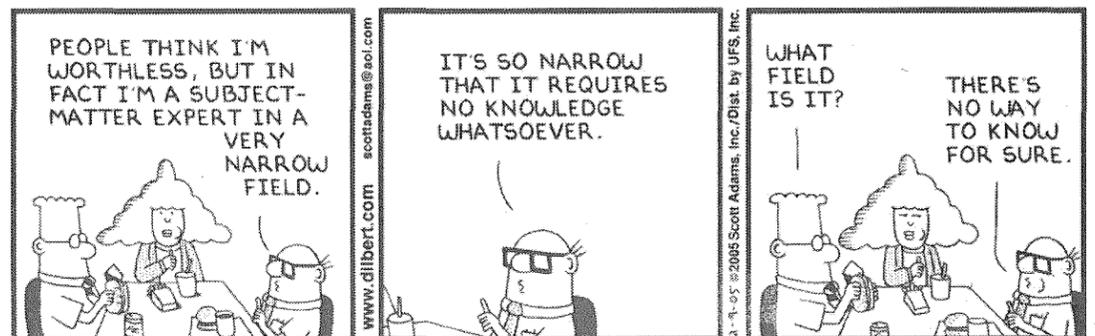
Caltech Ballroom Dance Club

The Caltech Ballroom Dance Club is now getting its Winter term classes underway, starting with the Hustle, taught by professional instructor Gary Ulaner. This class includes instruction on Mondays from 8-9:30 pm in Winnett Lounge on January 3rd, 10th, 24th and 31st, as well as two outings to the Hacienda dance club to put your moves into practice on January 12th and February 2nd! The cost for Caltech students is \$6 per class or \$20 for the series, \$8 per class and \$28 for the series for non-students. No previous experience or partner required!

We are also excited to announce the team classes for this term, aimed at those who are interested in competing or just polishing their ballroom technique. Two kinds of ballroom team classes are taught; one class concentrates on technique for the five standard dances, which include waltz, tango, foxtrot, quickstep and vinnese waltz; the other class concentrates on the five latin dances: rumba, samba, cha cha, jive and paso doble. For those who are new to ballroom dance we recommend the beginner class; for dancers who have more experience we offer the intermediate classes. The cost for the standard or latin class series at either the beginner or intermediate level is \$25 for Caltech students and \$40 non-students.

The beginner team classes will be taught by our own Derrick Bass in Winnett Lounge for eight weeks on Thursdays beginning January 13th and running through March 3rd. The class for the standard dances will run from 8-9:30 pm and the latin class will follow from 9:30-11 pm. No partner necessary!

The intermediate team classes are taught by Tudor Stoescu and Gwyneth Card on Sundays for eight weeks, running from



January 9th through February 27th. Instruction for the class on the standard dances will run from 2 - 3 pm and the latin class follows from 3 - 4 pm. As always no partner is necessary.

Scholarships

USA Funds Access to Education Scholarships are available now to students with demonstrated financial need.

USA Funds will award up to \$3 million dollars in renewable scholarships. Scholarships range from \$750 to \$1500 per academic year based on enrollment. Please visit their website for requirements and application forms: www.usafunds.org. The deadline to apply is March 15, 2005.

The American Society of Naval Engineers (ASNE) sponsors a scholarship program to encourage college students to enter the field

of naval engineering. Currently one year scholarship awards are \$2,500 for undergraduate students, and \$3,500 for graduate students. Applications and further instructions are available at: www.navalengineers.org/Programs/Scholarships/sc_info.htm. The deadline to apply is February 15, 2005.

More Scholarships are available at www.finaid.caltech.edu/news.html

Lecture Series Covers Intimacy, Social Skills

Continued from Page 1, Column 2

around Pasadena who are familiar with Caltech students. The majority of them are licensed psychologists, though some are also licensed psychiatrists or therapists, and they have all had experience working with students through references from the Counseling Center. Some, such as Jenny Butler, Ph.D., and Jacqueline Miles, Ph.D., have even worked with the Counseling Center before branching out to open private offices. Butler will be leading the relationship workshop on March 15, and Miles will hold a workshop on improving intimacy on May 3.

While most of the workshops will be taught by people outside of the Caltech community, some of the Caltech staff will be leading a couple. Psychology interns Katie Polsky, M.A., and Liyu Su, M.A., are in charge of the relaxation workshop on May 9. In addition, Lee Coleman will direct the mindfulness workshop on March 2.

In addition to the Mental Health series, the Counseling Center also has many plans for

other outreach programs to the Caltech community. Beginning Thursday February 10, from 4:00 to 5:15 pm, Austin and Maria Oh, Ph.D., Counseling Center Psychologist will be holding a Social Confidence group where students can receive support and build the skills to become more confident in social situations.

Su, along with Ph.D. and staff psychologist Elizabeth Shon lead an Intercultural Discussion and Support Group, where all members of the Caltech community can meet to discuss cultural interactions, and the affect of varied cultural background on relationships. All, whether ethnic or not, are welcome to meet together at the lounge in the Center of Student Services at noon on Monday.

Furthermore, Polsky and Candace Rypisi of the Women's Center collaborate to hold the Graduate Women's Group, which meets every Tuesday at noon at the Women's Center. The group discusses challenges met by graduate women and provides a forum to interact with other graduate

CARMA Receives Moore Award

By D. WILLIAMS-HEDGES

PASADENA, Calif.-The California Institute of Technology announces a \$2.5 million award from the Gordon and Betty Moore Foundation to support the Combined Array for Research in Millimeter-Wave Astronomy (CARMA).

CARMA will allow significant advances in the areas of astronomy and astrophysics. The combined array will become a frontline instrument for innovative research into the formation

women across campus.

In addition to these workshops and groups, a series of classes named "Fine Tune Your Mind and Body," taught by Jane Curtis, Health Educator, and Lura Astor, seek to improve the qualities of life for members of the community by teaching stretches and methods through which to create balance in their lifestyles. Each class is held on Tuesday from 1 to 2 pm in the Braun Multipurpose Room. These classes are sponsored by Athletics, Health Education and Staff Education and Career Development.

of galaxies, stars, planets, and the origins of life.

At the increased level of instrumental sensitivity envisaged, CARMA will allow researchers to "see" almost to the edge of the universe, a few billion years after the Big Bang, and also to search comets, planet-forming disks, and the interstellar medium for chemical clues regarding the formation of complex organic molecules from which life may originate.

CARMA is a collaboration between Caltech and the University of California at Berkeley, the University of Illinois, and the University of Maryland. It will merge the six 10.4-millimeter antenna telescopes of Caltech's Owens Valley Radio Observatory (OVRO) array with the nine 6.1-millimeter antenna telescopes of the Berkeley-Illinois-Maryland Association (BIMA) array, on a high-elevation 7,200-foot site at Cedar Flat in the Inyo Mountains near Big Pine, California. First light is anticipated this fall and full operation in 2006.

The Moore Foundation grant will be used for relocation of the 15 antennas to Cedar Flat; con-

struction of a control center; antenna pads; associated infrastructure; design and construction of a telescope transporter; development of state-of-the-art electronics and software; and other enhancements to ensure the successful integration into a single system for optimal performance.

Relocation to the Cedar Flat high-elevation site will allow atmospheric transparency that is a factor of two greater than at the existing OVRO Observatory. With the improved atmospheric conditions, more telescopes, and updated electronics, the new facility will have 10 times the sensitivity and imaging speed of the current instruments. Shorter wavelength observations and resulting higher angular resolution will also be increased through the improved atmospheric transmission. With the new array's merged complement of OVRO and BIMA antennas, CARMA's imaging fidelity will be unsurpassed. Its unique ability to provide sensitive observations over a wide range of angular scales will enable scientific research not possible with any other existing instrument.

According to Anneila Sargent, Rosen Professor of Astronomy and director of OVRO and CARMA, "CARMA builds on the pioneering technical and scientific achievements of the OVRO and BIMA arrays over the last 20 years. Millimeter-wave emission from molecular gas and dust has opened a critical window on the formation of stars, planets, and galaxies, and results from these arrays are increasingly intriguing. CARMA, with its improved sensitivity and imaging power, will allow us to make significant advances and to remain at the forefront of astronomical research and discovery."

Sargent continues, "While CARMA will ensure our ability to undertake cutting-edge research, it will also serve a critical role as a university instrument. This new merged array will encourage the exploration of new technologies and techniques and will be a key component in training the next generation of U.S. millimeter-wave radio astronomers." Sargent concludes, "If someone asks me these days, 'How's your karma?', I tell them, 'My CARMA is good!'"

Production Proceeds Used to End Violence

Continued from Page 1, Column 5

chant it with her, as around 1/4th actually did.

The monologues had a darker side, too. The most moving was an ode to a Bosnian woman who was raped as part of general war strategy. As she described her genital torture with gun barrels, another speaker likened her vagina to a sunlit green field, full of warmth and pleasure. It became clear that this was what the victim had felt like before the assault.

In fact, twenty to seventy thousand women have likely been raped due to the Bosnia conflict. The situation in America is worse: there are one-hundred thousand reported rapes and likely five-hundred thousand total per year. Forced genital mutilation is also a tragically common, especially in Africa. Pieces of vagina are cut off with shards of unsterilized

glass, leading to infection and sometimes death.

That is why all productions of the Vagina Monologues donate to V-day, where V stands for "Victory, Valentine, and Vagina." From its website, "V-day is a non-profit corporation which distributes funds to grassroots, national, and international organizations and programs that work to stop violence against women and girls." V-day performances are held throughout the US and Europe as well as South Africa and Kenya. V-day hopes to eventually secure sexual and political freedom for women throughout the world, including Iran and Afghanistan. This year, V-day is spotlighting the deplorable state of women in Iraq who have reportedly "lost more freedom than they've gained."



Courtesy of www.vday.org
Eve Ensler dances with Masai girls in Narok, Kenya. Ensler penned *The Vagina Monologues* after interviewing hundreds of women.

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Insurance, Auxiliaries Contribute To Costs

Continued from Page 1, Column 5

mitted to offering certain events." If there is not enough funding for an event, "we have to find it elsewhere. It's not a good place to be financially." In addition to the aforementioned student activities, the budget must also cover other areas, such as athletic equipment, performing arts online registration, and food services. "All that is coming out of our big picture budget," she said.

Other factors put pressure on financing Caltech, said Bob McQuinn, Associate VP of Development. Keeping up with cost is the major factor. When Caltech made "an overall effort to reconfigure the cost structure without diminishing the quality" of services and research, a salary freeze was put on faculty and some staff, he pointed out. "It was a real sacrifice." Also, all students are to some extent subsidized, so "the cost is more than what we charge," and is made up by other income, endowments, and gifts. These other sources of revenue for the school have been affected by outside pressures such as stock market drops that affect institute investments, McQuinn said.

The cost of REGIS, and whether it saves or increases cost, also came under scrutiny by students. Mary Morley, the registrar, explained that while the new system has initial costs, it can ultimately be recovered over time.

Another student asked whether projected tuition increases over the next four to five years can be posted for incoming students to prevent surprises. O'Neal said that this has not been done, as actual increases could differ from the projections. She added that higher fees do not lead to an increase in the self-help contribution asked of students on financial aid.

Health care was yet another subject of discussion. The cost

of health insurance has gone up sharply, said Susan Kolden, Assistant Director of Financial Aid. "We have been hit by those increased costs," she said, and higher tuition resulted from the "need to maintain a strong health insurance plan for every student." Tom Schmitt, Human Resources Associate VP, added that insurance costs about \$2600 per student per year, and that costs have gone up 15% this year, and 20% the year before. A student asked whether health care can be made optional for those on a parent's plan. Schmitt said that the idea has been considered, but most students prefer the current plan. Dr. Judith Campbell added that individual plans are "quite variable", and only a uniform plan ensures that every student is covered.

One student asked how much additional revenue the increased tuition would generate. Sharon Patterson, Assistant VP of Business and Finance, said that tuition increase is about one million dollars. However, tuition makes up for less than 3 percent of the total budget; the purpose of the higher fees is to keep up with costs. Auxiliaries such as the bookstore, she mentioned, "barely break even," and projects such as the Chandler renovation can lead to debt being issued.

Another student wondered whether donors with large financial resources could be asked to give more. Patterson answered that donors are sought after very actively. Bob McQuinn also explained that the donation must be satisfying to the donor, and will therefore often go to a specific area. Ultimately, there is still a "gap between what we want and what we can afford," resulting in difficult decisions being made in order to preserve to quality of a Caltech education.

Student involvement in fund-

Mester Lends Expertise to Issues Of Conducting Style, Attitudes

By JON MALMAUD

Last Thursday, the renowned conductor of the Pasadena Symphony, Jorge Mester, gave a lecture at Beckman Auditorium titled "Unveiling the Mysteries of Conducting: Who is Looking?" as part of the ongoing "Voices of Vision" lecture series. He discussed both the history of conducting from 309 BC to the present as well as what it takes to be a conductor for a modern orchestra.

Mester began his career by studying with Leonard Bernstein at Julliard. He has since guest-conducted the London Royal Philharmonic, the Boston Symphony, and various other prestigious groups. For two decades he was also conductor laureate of the Aspen Music Festival. Newspapers have described him as a "master" and "virtuosic conductor." His enthusiasm is so great that he even conducted during the talk in response to a question from the audience.

His talk actually began with a question to the audience: "What is conducting?" This seemingly simple question seemed to befuddle the audience. In response to one woman's answer of "arrangement", Mester zestfully replied, "That's not a sentence." Another

raising was also suggested. McQuinn said that an annual scholarship banquet is held for donors to meet their student recipients, and more student input in the fund-raising process is an idea that interests him. Locking tuition prices from freshman year was another idea suggested by a student. O'Neal responded that the idea was currently being studied. At the end of the meeting, she added that there may be an open house weekly for dialogue between students and Student Affairs in the future to address concerns and hear student responses.

daringly answered, "Someone who keeps the orchestra together." "You can do that in a prison," he retorted. The question proved rhetorical as he delved into the history of the arcane art of conducting.

The first related historical reference is to a 2300-year-old Grecian known as the "keeper of rhythms" whose job was to make a loud percussion sound to keep several hundred singers in order. Up until the 18th century, "conducting" was achieved by all members of the choir clapping together.

"They were happy orchestras weren't train wrecks", Mester noted. Then, with the advent of "orchestral discipline", the rise of the conductor began. It proved to be a dangerous profession—the continental conductor Lullie died after dropping his baton on his foot. Even those conductors

lucky enough to escape this doom-ridden fate were forced to face the audience, not the musicians; obviously a proper gentleman could not turn his back on his supporters.

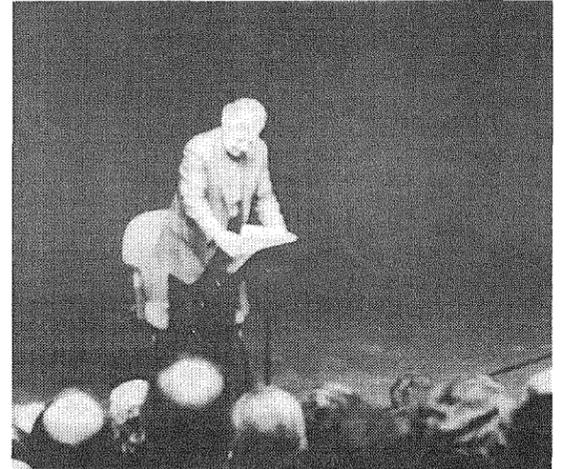
And yet Wagner did face the musicians. He also helped established the conductor as a powerful, egotistical commando with the right to dynamically alter the composer's song as he saw fit as first introduced by Mendelssohn in a performance of Mozart's "Messiah." Mester laments, "Wagner picked on that idea and ruined Beethoven forever...I don't think it's right to impose our aesthetic on a foreign era." Strauss even rearranged the individual acts in a Mozart symphony.

Unlike Bernstein, Mester prefers to keep the tempo of pieces close to the composer's intention. After all, he says, "Caltech is as good a place as any to be scientific...metronome marks are mathematical." Most modern conductors and even composers disagree with this philosophy. In one performance, Mester conducted a piece with exactly the same tempo as written. When the composer heard the performance, he complained that the tempo was all wrong. Apparently he was completely unused to having a conductor perform his work as written.

Mester is also dissatisfied with the sometimes dictatorial attitude of conductors. "The ego of the performer became prominent during Wagner's time and I think

that ruined Beethoven." Back in those days, a conductor could fire any performer on the spot. There were no conducting schools since virtuoso conductors claimed the skill could not be taught. Mester finds it more likely that the elders simply wanted to discourage competition. However, he also feels that "the public likes the image of the fascist conductor." The subsequent generation of orchestra-keeping-togethers is predicted to be far more approachable, luckily.

Now, how to be a success-



K. Peng/The California Tech
Jorge Mester, Conductor of the Pasadena Symphony, explains the history of conducting.

ful conductor. First, "conductors need to be virtuosos on an instrument. How can you make music if you can't make music?" Mester admits that certain modern conductors don't actually obey the first law. He believes that many of these are only able to maintain careers since the quality of the symphony players compensates. Second, you have to be a chamber musician since "conducting is a social position." Mester regularly interacts with his symphony players for feedback on how he's conducting.

While it may not appear that Mester actually unveiled many mysteries, he did answer some questions from the audience. One senior gentleman wondered what goes on in Mester's head as he reads a score for the first time. Answer: "Reading a score becomes like reading a newspaper...I go to the obituaries." Who is your favorite composer? "Mozart." Why? "If I could put it into words, I would be a poet." What percent of the audience can really tell the difference between a good and bad composer? "Everyone in Pasadena can."

Mester concluded the talk with one amusing anecdote from when he was a guest conductor for a distant orchestra. He was having particular trouble conducting one movement. When he announced to the players that he never had problems with this part before, a snide string-player in the back (probably a viola) answered, "Neither have we!"



D. Korta/The California Tech

Professors Cathy Jurca and Rick Jewell discuss John Ford's *My Darling Clementine* with USC's Hugh Taylor after a screening of the film on Tuesday.

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Patriots Win Super Bowl: Eagles deserve loss after poor McNabb passing, but Patriots take on Yankeesque air.



Outgoing BoD Complacency?: Sign-ups for BoD offices fail to go up again and probably signals a delay for elections. Which begs the question: do they still even care?

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