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, we 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 Cohen, Ph.D., Assistant Director of Counseling and Training.

Most of the workshops will be held by private practitioners from ASCIT Bylaws the Election Committee.

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“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.

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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 Benjamin 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 reconvened a nebulous line in the Article VIII, Section 8 as an instruction to temporarily seal results from the public.

Will Coullier ’05, the Election Committee member who coordinates ASCIT’s primary Internet-based ballooning 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-

Continued on Page 2, Column 1

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 biochemistry professor Mary Kennedy and interhouse chairwoman Kim Popendorf, read one monologue each to a packed Beckman Auditorium on Friday evening.

Some monologues were so humorous and heart-warming that even the male audience in the audience was laughing and sighing. One piece, titled “The flooded,” was told by 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 barber jacket and red bandana screaming at the audience about how angry she was with her body 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 wear 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 moun- (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 exactly what she meant by moun- ing into the mic with such realness 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 ended the audience to

Continued on Page 7, Column 1

Tuition Hike Questions Answered After Protest
By ZHIYUN GUAN

Students brought their questions to the floor over the recently announced tuition increase to a meeting in Winnett Lounge Tuesday night. 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 to the student council before the next academic year. She said, this year, the committee reconvened the issue to put emphasis on the future.

"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 with the increase this year, 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." A referendum to put the issue to a vote was rejected by the Senate, and the increase 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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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 ’06stormed to victory Wednesday in a hotly-contested 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.

“One 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.

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Continued on Page 2, Column 1
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 6 issue of the Journal of Neuroscience, California Institute of Technology neuroscientists Sam Musallam, Brian Clad, 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 researchers held 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 computer screen, and then decode his thoughts. He thinks about reaching there, but his actual reach, and if he thinks about it accurately, he’s rewarded.”

Combined with the goal task, the monkey is also told what the reward is and is told to perform perfectly the task. Examples of variation in the reward are the type of 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 a particular goal in a 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 “prosthetic signal” 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 of prosthetic devices.

Since the brain signals are high-level and abstract, the mathematics and algorithms must be able to operate on a number of devices. As for the value signals, Andersen says these might be useful in the continuous monitoring of the patients’ goals, moods and moods much more effectively than currently possible.

Andersen is also excited to see how rapidly adjusted by changing parameters, 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 recorded at the same time, for instance, to voice devices that operate on a particular goal, merely thinking about the words they want to speak.”

Andersen is the Bosswell Professor of Neuroscience at Caltech. Musallam and Greger are both postdoctoral fellows in biology at Caltech; Clod is a former research 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.

The California Tech

BY ROBERT TINDOL

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.
Andrea in thrilling shootout with Basketball's opener after graduation. The 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 covered 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 Day Ivy for the easy basket. Hires started 14 days later, Andrea returned from injury and was a key player in the team's success. 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 Kang

Senior Forward Andrea Kang has been a key member of the Caltech Women's Basketball team since joining her Sophomore year. A Chemistry major from Edison, New Jersey, Kang attended Caltech largely because of the superior education and greater array of career options that would be available to her upon graduation. Kang 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, Kang has appeared in 63 Women’s Basketball games and averages 2.9 points and 2.5 rebounds a game. Kang’s contributions to the program extended 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 as Coach, she has been a leader on and off the court.”

The 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. Davis had a perfect nine for three from the free throw line. 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 the arc. King averaged 11 points and shot 53% 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 in 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; 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 covered 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 Day Ivy for the easy basket. Hires started 14 days later, Andrea returned from injury and was a key player in the team's success. 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.

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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, 7-4, 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 Mesters 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.
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 else, but it will also give us an unprecedented look at the origins of the basic 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 sorts 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 Frank Moore, who chairs 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 of the “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 high-energy X-ray missions.

NuSTAR will be much better than the balloon experiment. Harrison explains, because it’s necessarily that focused picture’s atmosphere for extended periods to get a good view of the X-ray sky. The balloon provides 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 NASA’s current satellite, the Orbiting Telescope. Thus, NuSTAR will get the first focused hard X-ray images for three basic science goals:

– The taking of a census of glowing clouds that exist all through the galaxy, which will not only count them, but will also measure the “accretion rate” at which material has fallen over them over time, and the rate at which a supermassive black hole has grown.

– The detection and measuring of radioactive stuff in recently exploded stars. These remnants of supernovae will provide a better idea of how elements are formed in supernovae 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.

– Observing and imaging of the large 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-egregious but powerful phenomenon.

The technical difficulties of launching high-energy imaging satellites have been overcome with ground-breaking work in various Caltech labs, including the lab of inves­tigator Carred Meader, who is the Professor of Engineering and Applied Science, Emeritus, at Caltech. Both HEFT and NuSTAR will rely on an array of giant conical mirrors that will focus X rays from about 30 to 100 kilo-electron-volts on a pixel detector made of cadmium zinc telluride. The sensor is seg­mented into strips of about half a millimeter each, and these will take thousands of individual read­ings of X-ray photons and turn them into electronic signals.

“The mission, with this, 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 (which is responsible for building NuSTAR 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 (DSRI). NuSTAR’s spacecraft will be built by General Dynamics Spectro­Astro.

JPL handles project manage­ment, the mission 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 addition to the HEFT and NuSTAR feasibility studies.

The Explorer program is de­signed to provide affordable, 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 Re­ommen Rayat High Energy Solar Spectro­scope (ReHESS), launched in February 2002, and the Gal­axy Evolution Explorer, launched in April 2004. A satellite led by Caltech physics professor Chris Martin. Nustar, however, will be the first mission of its kind, be­ing sponsored and funded entirely by private sources. NASA will deal when they leave this bubble and get hit with the harsh reality of real life.

For, I, for one, have become more socially awkward after my four years here. No longer can I easily get up to a group of people I don’t know and have a conversation. In fact, my grasp of the English language has decreased consider­ably. Not only do I not know what a regular basis, But our whole so­cial atmosphere is so unique, so strange, and I wonder how people will deal when they leave this bubble and get hit with the harsh reality of real life.

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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 when your team loses 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 have trouble dealing

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for Student Services

"Bullying" has 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.

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A Women's Best Defense
February 13
1:00 - 5:00
Women's Center, 265 Center
for Student Services

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

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Women's Health and Wellness: The Body Beautiful
Thursday, February 17
2:00 - 5:00
Women's Center, 265 Center
for Student Services

Diane Godenruth, an Integrative Body Therapist, will help participants evaluate their body image and will share techniques on how to have a loving attitude toward our bodies. RSVP required! To sign up please call ext. 3221 or email wcencer@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 a professional instructor Gary Ullner. This class includes instruction on Mondays from 8-9:30 pm in Wmnett Lounge on January 3rd, 10th, 24th and 31st, as well as two outings to the Haciendas 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 $25 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 Viennese Waltz; the other class concentrates on the six Latin dances, which include 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 beginner or intermediate level is $25 for Caltech students and $40 for non-students.

The beginner team classes will be taught by our own Derrick Beckman, a member of the Fred Astaire dance school, as well as by students. Applications and further instructions are available at: www.beckmancaltech.com.
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 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, 7200-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; construction 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 molecules in and above Earth 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 instrument 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 summer?’ I’ll tell them, ‘My CARMA is good!’”

Spring Break in Hawaii! Rolling surf. Warm sunshine. Hot nights. And Hawaiian Airlines can get you there. Check our web site for the very lowest fares available.

HawaiianAirlines.com
Mester Lends Expertise to Issues Of Conducting Style, Attitudes

By JON MALMAUD

Last Thursday, the renowned conductor Jorge Mester gave a lecture at the Beckman Auditorium entitled "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 Juilliard. 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. News-papers have described him as a "master" and "virtuoso conduc-tor." 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 wistfully replied, "That's not a sentence." Another factor.

Raising was also discussed. McQuinn said that an annual scholar-ship fund is held for donors who make more and student input in the fund-raising process is critical. A salary freeze and projected tuition increases over the next few to five years can be posted for incoming students to prevent surprises. O'Neal said that he even conducted during the talk in response to a question from the audience.

Another student wondered whether donors with large finan-cial resources could be asked to give more. Patterson answered that donors are sought after very actively. Bob McQuinn also ex-plained 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 allocating the institution's resources. Schmitt said that the idea has been considered, but most stu-dents prefer the current plan. Dr. Judith Capuzzo added that indi-vidual plans are "quite variable," and that a plan of this kind is not in the interest of every student.

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 dol-lars. However, tuition makes up less than 3 percent of the total budget; the purpose of the higher tuition is to support the other areas of the institute. These other sources of revenue include investments, McQuinn said.

The cost of REGIS, and whether it saves or increases cost, also came under scrutiny by students. Mary Morley, the registrar, ex-plained that what the new system has actually is, it can be recovered over time. Another student asked whether projected tuition increases over the next four to five years could 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 in-creases in the contribu-tion asked of students on financial aid.

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