Caltech Planetary Scientist Receives National Medal of Science

by Caltech Public Relations

PASADENA — Peter M. Goldreich, the Lee A. DuBridge Professor of Astrophysics and Planetary Physics at Caltech, will receive the 1995 National Medal of Science from President Clinton at a White House ceremony on October 18.

The White House announced the eight names of this year's winners of the National Medal of Science, which is awarded periodically in special recognition of outstanding scientific contributions. Goldreich is the nineteenth member of the Caltech faculty to be honored with this award.

In a citation that will accompany the medal, Goldreich is lauded for his profound and lasting contributions to planetary sciences and astrophysics, providing fundamental theoretical insights for understanding the rotation of planets, the dynamics of planetary rings, pulsars, polars, galactic masers, the spiral arms of galaxies, and the oscillations of the sun.

Goldreich describes himself as a general-purpose theoretician in astrophysics. He typically spends about five years working on a particular problem, writes a few papers about his findings, then moves on to another topic.

It is this purposeful rambling among many fields that has allowed Goldreich to contribute to a wide variety of problems ranging from why Saturn’s rings have sharp edges to how distant stars emit microwave radiation in a coherent form, like a laser.

Even though he is working in one area, Goldreich hears about other intriguing ideas. “I always have another set of problems I’d like to solve besides the ones I’m working on,” he explains. “I like to work on problems with well-supported observational data and no theoretical explanation of any significance, so that no one has a good idea of what’s going on, and I am the first one to explore it in-depth.”

Goldreich says he has worked on about a half-dozen of these problems where the research fell into place and his expertise would enable him to solve a problem. “I can sit in my chair for months quite happily trying to get that one little insight.”

-PETER M. GOLDRICH, PROFESSOR OF ASTROPHYSICS

and PLANETARY PHYSICS

U. S. News Lists Caltech Seventh in Annual Rankings

by Stephen D. Van Hooser

For the second consecutive year, U. S. News and World Report has ranked Caltech seventh on its list of the “Best National Universities.”

Caltech, which tied with Dartmouth, was ranked behind Harvard, Princeton, Yale, Stanford, MIT, and Duke. Brown and Johns Hopkins rounded out the top ten.

Caltech also shuffled its ranking methods again this year: alumni satisfaction accounted for 5 percent, retention and reputation each represented 25 percent, financial resources contributed 10 percent, faculty resources contributed 20 percent, and selectivity accounted for 15 percent. Although many of the attributes which U. S. News uses to calculate a school’s rank remained unchanged from the 1995 issue, a few important attributes were slightly lowered for Tech, including “Faculty Resources” and “Student Selectivity.”

The “Faculty Resources” attribute is a combination of the student/faculty ratio, the percentage of faculty members with a Ph.D., the percentage of part-time faculty, the average faculty member’s salary, and the average class size. This year, Caltech dropped from first to second; Harvard took the top spot.

“Student Selectivity” is a percentage of acceptance rate, the percentage of students who manufacture after acceptance, the average high school rank of students, and the high school class standing. If a school did not provide complete information, U. S. News used the lowest score for schools in its category.

Furthermore, if a school did not provide full information about class rank or test scores for each student, U. S. News increased the weight of the category with less information. Caltech’s rank in this category dropped from 2 in 1995 to 5 in 1996.

Rankings at a school of Caltech’s size, however, need to be taken with a grain of salt. For better or for worse, the actions of one student or the addition of one professor can cause the numbers to fluctuate wildly.

U. S. News has provided numeric collegiate rankings for the past several years; it has also tweaked its ranking methods yearly in an effort to capture the public views colleges and how the editors of U. S. News and other scholars think the public should view colleges; small changes in rank do not necessarily indicate a change in the policies, atmospheres, or performance of an institution.
Opinion: From the President

Let’s Think Twice Before Cutting Research Funding
by Thomas E. Eberhart

America’s position as the undisputed world leader in scientific and engineering research is in jeopardy. The threat is the congressional budget pressure to cut billions of dollars of funding from the fundamental component of technological progress—basic research. If this happens, America may soon lose one of its most valuable assets—a technical preeminence, and it may take generations to reclaim that leadership.

As a nation, we cannot escape the need to balance our accounts. And no one would dispute the urgency of making sound decisions about the priorities associated with continued spending of taxpayer dollars. But unless we invest some federal dollars toward our children’s future, they may inherit a weak and dispirited country.

Fifty years ago, a conscious decision to establish a federally funded program sponsored government support for university-based research. In a period of optimism and prosperity never before seen in history, this partnership simultaneously trained the next generation of inquiring minds, expanded humankind’s base of knowledge, and led directly to improvements in our quality of life and standard of living. It also produced major advances in science and engineering.

In 1945, Vannevar Bush wrote in a presidential report that “without scientific progress, men and machines are in danger of being supplanted in the race for survival by other machines and organisms in other directions can assure our health, prosperity and security as a nation.”

A little more than ten years later Sputnik was launched and sent back in radio beeps. Those little beeps served as a wake-up call that U.S. science had fallen behind. We marshaled our resources, redesigned our education system with an emphasis on science and math, and by superb efforts in science and engineering, we were able to put men on the moon before the end of the decade. It is unimaginable we could have accomplished this many other great achievements without our investment in federal support for university-based research. We went on to develop the best system of graduate education in science and engineering in the world.

There are countless examples of the societal benefits of scientific and technological advances, which were born of basic research. The 30-year, $5 billion federal investment in computer research has produced the people who made the technological breakthroughs in science and medicine that will help scientists and engineers to “predict, prevent and cure” heart disease. Other examples abound.

Congress is currently focused on budget cutting. But some of these cuts do not make economic sense. We must remember that saving billions of dollars by not funding research pales in comparison with the trillions of dollars that could be saved by developing new medical treatments and by discoveries, and new methods of cleaning up environmental waste. Speaking of waste, consider the recent cases of “fraud, waste and abuse” that a society can commit is the failure to invest in its own future sustainability.

We have a long tradition in this country of supporting a broad spectrum of research, a policy that has developed excellent leaders in science and engineering and has paid rich dividends to our society. We also have a parallel tradition of facilitating the transition of these discoveries to useful applications which can be commercialized by industries in the private sector. Our leading competitors, Japan and Europe, have now established similar policies to foster partnerships that provide support for basic research by linking universities, government and industry.

Cutting funding for basic research at this time would severely jeopardize our ability to compete in the global marketplace of the future. Without first-class science, we can look forward only to a second-class economy and a second-class standard of living in the world of the next century. Let us think twice before allowing the heat of the moment to dictate the shape of our future.

This article appeared in the Washington Post on August 29, 1995 — Ed.
Welcome back! This is just a reminder that the Caltech Y is here to serve you again this year. We will sell discount tickets to movie theaters and theme parks and rent camping equipment in addition to our larger campus activities. If you can think of anything you would like the Y to do or if you are just interested in learning more about the Y, drop by our Excomm meetings on Mondays at noon in the Y Lounge. Everyone is welcome! Check out our calendar in this and future Techs. Any questions? Call Chris Sundberg at x6103.

by Donna Ehrenstein

FRIDAY NIGHT ASCiT MOVIE

Baxter Lecture Hall

September 29, 1995

Welcome back! This is just a reminder that the Caltech Y is here to serve you again this year. We will sell discount tickets to movie theaters and theme parks and rent camping equipment in addition to our larger campus activities. If you can think of anything you would like the Y to do or if you are just interested in learning more about the Y, drop by our Excomm meetings on Mondays at noon in the Y Lounge. Everyone is welcome! Check out our calendar in this and future Techs. Any questions? Call Chris Sundberg at x6103.
The newly released PC/Mac cd-rom game Burn: Cycle is a port from the c64 home machine by Phillips Electronics. The first response to the game is that the resolution used for game play is very low for a cd-rom: 320x200 with 256 colors just makes the full screen video look pixelated. Granted this makes the game run smooth on machines with low cd-rom access time and poor CPU speed, there has been a high resolution option included for the techno geeks with excessively fast machines. Despite this, we were very happy with the game. The one cd-rom disk will run in both PC's (under Win 3.1 or Win 95) and Mac's. It combines an energetic soundtrack (in fact the "limited edition" we reviewed came with a separate sound-only cd) with very smooth full screen video. The plot begins with your character, Cutter, breaking into Sotech, the worldwide conglomerate/communication conglomerate of the future, inadvertently getting infected with a neural virus. You have two hours before your brain gets fried to remove the virus and untangle the mystery behind the slaying of your partner/girlfriend Kris. The format of the game is reminiscent of The Seventh Guest in that you guide your character through an already rendered landscape solving occasional puzzles. The major difference is that this game actually has a good plot and includes a few action scenes. The best part of this game is the story line which is interesting, intriguing, and even somewhat original. The game took approximately 8 hours of playing time to finish which was helped along by saving and reloading often (AKA cheating). All in all, if you are looking for a flick that will pass the time enjoyably, we recommend Burn: Cycle from Phillips Media. List price: $49.99 (if you cannot find it for less we pity you). 6 bits out of 8.

The California Tech
Computer Problems Plague Microsoft, Netscape

Microsoft Math
When does $1.40737488355328 = 0.64? When you're a user of Microsoft's Excel spreadsheet.

For several years a (now well known) math bug existed in the Calculator applet that came bundled with Microsoft Windows. This remained uncorrected in several releases over a considerable period of time.

A new math related bug has now surfaced in another Microsoft product. Type or paste $1.40737488355328$ into a cell in a copy of Microsoft's Excel spreadsheet and you will be rewarded, with the number you expect but with 0.64.

If you perform arithmetic with this it will act as if 0.64 had been entered so it is not simply a display error. When the number is used as part of a formula the error is not apparent.

Netscape Security Woes
Two Berkeley computer science graduate students interested in cryptography have identified a serious security flaw in the Netscape software for browsing the World Wide Web. Netscape says a repaired version will be available for free downloading from $<\text{http://home.netscape.com}>$ within a week. (John Markoff, The New York Times, 19 Sep 1995 A1)

This flaw has been widely reported elsewhere on the net, and involved a weakness in the use of a pseudorandom number generator to create the crypto seed. Knowledge of the weakness enables the key to be reverse-engineered with significantly less than exhaustive effort. PGN.

More Netscape Security Woes
Yet another weakness was discovered in Netscape's Internet software, found by the "Cypherpunks". This flaw can crash the Navigator browser software. "The flawed software isn't able to read very long numbers. An Internet user could exploit the flaw by planting a bit of text containing a long number, causing computers use by unsuspecting readers the text to crash." This one also being repaired. [Abstracted by PGN fro "Netscape Says Hackers Uncover 3rd Flaw in Its Internet Software", By Heather Gee Bloomberg Business News, 5 Sep 1995, in The New York Times. The first weakness was the French and British cracking of Netscape's 40-bit crypto, in RISK 17.27,28,29.]

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Present and accounted for: Jon McDunn (ASCIT Pres.), James Honaker (ASCITV-Pres AND BOC Director at Large), Kanna Shimizu (ASCIT Treasurer), Robert Duff (ditto), Ken's dog, Jon’s cat, Laura Brady (ASCIT Social Team), Laura Verhoff (former ASCIT Treasurer), Whereabouts, phone (818) 395-6203. Ask for Bruce.

NOT present: Greg Steiert (ASCIT Social Director) and Melissa Saenz (Freshman Director at Large).

Special Guest Stars: Kristie Armengou (ASCIT Social Team), Marty “Jon Allen” O’Brien (ditto), Rebert Duff (ditto), Ken’s dog, Jon’s cat, Laura Verhoff (former ASCIT Treasurer), Whereabouts, phone (818) 395-6203. Ask for Bruce.

The first meeting of the ASCIT BOD with new couches will take place on Friday, September 29th at 2 p.m. Everybody (freshmen especially) is welcome to attend. Jon McDunn will not be giving out signatures. Stop by SAC 64 (between the laundry room and arcade) sometime after 2 p.m. but before 3 p.m.

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Hi, I'm Adam Villani, Media Guy. I started writing this column two years ago because I felt like it, I think I'm a better writer now than I was when I began, but I've received criticism that the column is not enough, more just a bunch of movie reviews and less the ruminations of an opinionated, self-centered jerk. The reason for this is that I've been writing the column less often lately than when I started (every two to three weeks as opposed to weekly), and since the Tech only reimburse me for movies that I write reviews of, my financial situation compels me to do that. But I've returned from Los Angeles radio stations that we could pick up a down even closer to where Garth Brooks. If you're looking for something to make you feel good about Los Angeles radio, these down-home equivalents to 88.3 KROQ is as stunningly beautiful as it is revolting. We see just about the latest hit of atonement in Radio Times magazine. So I'll try to write Media Guy more frequently to spread the movie reviews out more evenly.

Radio in the Forsaken Land

I recently returned from a two-week Geology field trip to the White Mountains, in Inyo County near the desert. Being the middle of nowhere, the only radio stations we could pick up were KBOV, or "music for old people," and K2BS, a country station from Bishop. As a long-time Southern Californian, this was really my first "opportunity" to listen to much country and discover that "today's hot new country" has got to be the only genre of music designed specifically for morons. This crap actually made me yearning for Willie Nelson and Hank Williams, give me some honky-tonk cowboy and a guitar any day over Garth Brooks. I paid to see this movie, is it not your duty to make you feel good about Los Angeles radio, these down-home equivalents to 88.3 KROQ is as stunningly beautiful as it is revolting. We see just about the latest hit of atonement in Radio Times magazine. So I'll try to write Media Guy more frequently to spread the movie reviews out more evenly.

Shogun2

This movie about Las Vegas nude dancers wasn't nearly as bad as it could have been, but considering that screenwriter Joe Eszterhas is responsible for such trash wrecks as Basic Instinct and Sliver, that's faint praise indeed. The story and dialogue are ludicrous at times, the acting is at the level of a cheap sitcom (not surprising, considering "Saved by the Bell's" Elizabeth Berkley has the lead), and the sex scenes are more absurd than erotic. So, yeah, it was really bad. I heard the best thing I can say about it is that it had reasonable competent direction and was decent from a technical standpoint, which I can't say about Sliver. What's really sad is that Paul Verhooven (director of Orange) could make good movies if he stopped working from the scripts of an overpaid no-talent like Eszterhas.

I saw it is here. The supposedly cool station, "The End," is like KROQ with more country and a trick. "The End," is meant for morons. This crap actually made me yearning for Willie Nelson and Hank Williams, give me some honky-tonk cowboy and a guitar any day over a clown like Garth Brooks. If you're looking for something to make you feel good about Los Angeles radio, these down-home equivalents to 88.3 KROQ is as stunningly beautiful as it is revolting. We see just about the latest hit of atonement in Radio Times magazine. So I'll try to write Media Guy more frequently to spread the movie reviews out more evenly.

The Seven

There is one grim motion picture. This David Fincher-directed feature stars Pitt and Moore as romantic detectives tracking a serial killer who selects his victims based on the Seven Deadly Sins: envy, gluttony, greed, lust, pride, sloth, and wrath. Cinematographer Darius Khondji ("Pulp Fiction") is as much responsible for the success of this picture as anyone else; this literally very dark movie's photography is as stunningly beautiful as it is revolting. We see just about the latest hit of atonement in Radio Times magazine. So I'll try to write Media Guy more frequently to spread the movie reviews out more evenly.

To support the Motion Picture Association of America's NC-17 rating, which has gotten a bad reputation as being some kind of overmoralized kin of death. Entertainment industry types aren't rigorous scientists, however; the conventional wisdom that no NC-17 film can get box office results had arisen without a single attempt to put a film with the rating into wide release. Every major studio picture to receive the rating (which prohibits children under 17 from seeing the film) has been recent to get an R, everything before. Shogun2 is followed in the arena with an NC-17 has been a low-budget independent or foreign film which wouldn't have attracted much of an audience regard less of the MPAA rating. My only hope is that Shogun2 is financially successful enough to open the door for better adult-oriented movies to each a national audience in the future.

Shameless Plug

You can check out my movie-oriented lists and links to some good movie and music-oriented sites on the World Wide Web at http://www.svs.ucsb.edu/~addink. If you want up-to-date listings for local movie theaters and reviews of current films (many written by yours truly) you can check out Mike Benedetti's Pasadena Area Film Guide at http://www.svs.ucsb.edu/~benedetti/movie/.

Shining Stars

by Calvin T. Eckmann

If you have a good bike, you can get from Beckman Institute to the Housing Office with one push on the pedal.

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Leo (July 23-Aug. 22): You will consider paying a bill early.

Virgo (Aug. 23-Sept. 22): Someone who knows someone you know will win the lottery.

Libra (Sept. 23-Oct. 22): You will receive a phone bill.

Scorpio (Oct. 23-Nov. 21): You will receive a phone call.

Sagittarius (Nov. 22-Dec. 21): Your utility rates will increase.

Aquarius (Jan. 20-Feb. 18): You will consider never paying your bills again and letting your life fall into disarray.

BOWL: Do you know more than your prof?

play at least 3 matches, regardless of their win-loss record. The numbers of games played could increase, depending on the number of teams entered. Volunteers are also needed to serve as scorekeepers, judges, timekeepers, and moderators (question readers). Scorekeepers keep scoring statistics for the matches, judges help adjudicate answers and match play, and moderators read questions, thus controlling the flow of the match.

To register your team, or for more information, interested teams/players should contact:
Craig Left/JPL Mailstop 169-315
Phone: 354-8885 Fax: 393-1935
Email: def@tatons.jpl.nasa.gov.

Registration closes 14 Oct. 95

Caltech College Bowl is sponsored by The Caltech Y, the Undergraduate Dean’s Office, the Vice President for Student Affairs’ Office, and Residence Life.

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Additional forms may be found in SAC 37

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SPORTS

Caltech Teams Impress in Home Meet
by Brian Barris

Saturday, September 23 saw several cross-country teams from around the area journey to Arroyo Park for the annual Caltech Invitational Dual Meet Challenge. The meet was scored in both a dual meet and invitational system, enabling the teams to determine how they fared against the other schools individually and against the field as a whole. There were a total of eight men's teams and seven women's teams, and the Caltech entries in each division fared quite well, signaling good things for the upcoming season.

The women's team finished in fourth place as a team with a 3-3 dual meet record. Caitlin Henderson led the way with a time of 20:26 for the course, just missing out on first place. Next came Janet Sun, finishing just out of medal contention in twelfth place. The top five was rounded out by Grecethan Larson, Phyllis Chen, and Karen Bletzer, who finished the race with an impressive kick. The race was also memorable for the debuts of two more freshmen, Aimee Pierce and Amy Dullard, and for the astounding personal best recorded by Katie Stefer and Keely Walker.

The women's team can look forward to a very strong season after this meet. Against the two conference teams entered, Caltech dominated Cal Lutheran and was narrowly defeated by La Verne.

The men's team sent out a warning to the SCIAC that Caltech can't be ignored in cross country. Senior Tom Meyer and sophomore Leonard Lad were beaten by the Crazy Lutherans and La Verne and every other team in the field except PCC. With two-a-days over now, fresh legs will lead to even better performances, and hopefully an outstanding showing in the conference.

The next meet is this Saturday at Redlands. With much more noted teams, with Brad perhaps backing up his talk for once, and with the possible return of Dan Klieinn, it promises to be yet another success for Caltech cross-country.

There are more than 3,000 listings for both undergraduate and graduate study opportunities. The Career Center is located in room 8 of Parsons Gates and it is open from 8 to 12 noon and 1 to 5 pm Monday to Friday. The Fund Finder is a free service provided by the Caltech Financial Aid Office and Career Center.

Caltech Kicks off Fall Sports Season

From the Caltech Department of Athletics

WOMEN'S VOLLEYBALL

This year's volleyball season opens up under the leadership of a new coach. Maureen Burt has taken the head coach position with Richard Chin as her assistant. They have 7 returnees this year including seniors and 4 year players, Angie Bealco, and Lauren Zeller. Not returning is Angelic Oster who played with Biola; sophomores Evie Dillman, Emily Ho, Diana King, and Grace Yang. Two new upperclassman have joined the team this year, seniors Stephanie Haussman and Ellis Meng.

Grace is taking on the responsibilities of setter, with the team running a 5-1, coach Burt stated that Jen Holland returns as our strongest hitter and that Angie (who has moved from setter to outside hitter), has adapted very well to this position. Emily is playing the opposite position and back-up setter, while Eve and Diana are playing middle, providing the team with some big blockers. Laura is the team's defensive specialist, playing very well in the middle back. Stephanie and Ellis are both returning giving them confidence in their abilities. The team opened up the season with a loss to L.I.F.E. Bible. Although they played well, they lost in sets. They came back in the next match to lose to Southwestern. Western to win in 3. They have been improving with each practice. "Our team has been working very hard all preseason practices and I have seen great improvement in just that short time," commented Coach Burt. The team most recently won their latest match in 4 sets against California Christian.

WOMEN'S CROSS COUNTRY

This year's women's cross country team opened up its 1995 season at the Whittier Invitational on September 9th. Nine members of the squad competed giving Caltech two respectable team scores, even without the aid of top runner Dan Kleiman, who missed the meet due to an injury. Senior Tom Dmukauskas lead the Beavers with a time of 22:29. Senior Tom Meyer and sophomore Brian Barris finished shortly behind Dmukauskas, clocking in at 22:33 and 22:18. The team welcomes back ten returning members, including sophomores Brian Barris, Dan Kleiman, Harmesh Lad, Brad Nakatani, Chris Cary, James Dobrev, Ben Siron; and seniors Seth Blumberg, Tom D. and Tom M. Newcomers to the team include freshmen Kurt Campbell, Tom Collier, Jeff Mendez, Conrad Ziesler; sophomores Leonard Song and senior Daniel Richard.

The next meet is this Saturday to the Westmont Invitational, Brian Barris, Tom Meyer, Brad Nakatani, Tom Dmukauskas, Conrad Ziesler, and Dan Richard all finished in the top 25. While...
SPORTS:

CONTINUED FROM PREVIOUS PAGE.

The Caltech water polo team will add an important element to its arsenal of talents, namely experience. Lead by All conference player Mike Greene (Sc.), setter Jason Hong (Je) and Donovan Stevens (Sc.), these core players were starters their freshman year and bring tons of experience. Greene and Hong were the second and third leading scorers last year, while Donovan is returning to the team after a two year hiatus. Other starters will be Sookeeto Bhuta (Sr.) and goalie Brian Bicunashaw (Je), who both started the last two years and Steve Glista (So.) who rotated into the starting group last year. The final member of the starting five will be Brian Collins who was a starter for his high school team. Other members of the team that will be entering into the starting group will be sether Phil Rodriguez (So.), Jim Pierce (So.) and Casey Huang (So.).

Any team looking past Caltech will find themselves badly malled. This year’s schedule finds Caltech games played at home. This home pool advantage will be needed as Caltech will be hosting four teams, LA, PA, and Loyola Marymount during the pre SCIAC conference season. Two of Caltech’s important matches will be against the Alumni and a match against Cal Maritime. The series against the Alumni finds the varsity holding on to a four year winning streak which they would love to extend to five. Also, the varsity will like some revenge against Cal Maritime after losing a slugfest last year 182-1.

Coach Dodd is starting his sixteenth season at Caltech and is pleased with this year’s group of athletes. “Mike Greene is arguably one of the fastest players in the conference and most of the offense will be centered around his ability.” Jason Hong and Phil Rodriguez will be handling the important set position. The nicest surprise has been the play of Sookeeto Bhuta and Steve Glista. “Both players have done things that takes an average player years to master. A lot of our success will depend on how they perform,” related Coach Dodd.

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HELP WANTED—

1. I would like to speak German like a native speaker. Would like to speak German like a native speaker and read German with thorough comprehension. Call (818) 995-2233 for German tutoring by native speaker.

2. If you would like to perform campus circulation for The Caltech Tech. Need or are in some way. Call 90704.

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Scholarships

The Caltech Entrepreneur Club will hold a special meeting on October 3rd at 7:00 pm in Room 1 of the Student Activities Center (SAC) as follows: beginning class will be held from 7:00 to 8:00 pm for intermediate students, and from 8:00 to 9:00 pm for advanced students. Classical and Flamenco repertoire will be explored and techniques will be given for all levels of students. This group will meet two times per week, Monday evenings at 7:00 pm and Wednesday afternoons at 5:00 pm. The group will perform three major campus concerts this year, including a performance of Beethoven's 9th Symphony with four Los Angeles choirs and the Santa Monica Symphony. For further information, please contact the Glee Club President, Jennifer Miller (jpm@caltech.edu).

The Caltech Women's Center and the Glee Club will sponsor Women's Therapy Group For Graduate and Undergraduate Students. Jan Aura, Ph.D. and an intern from the Counseling Center will facilitate the group. The group meets biweekly and is open to all graduate and undergraduate women. It includes an opportunity for women to examine and analyze urgent ethical issues, and a setting to examine and practice specific behavioral skills (eye contact, voice projection, body language). For more information, please contact the Women's Center at 335-4151.

Applications are due no later than October 1, 1995.

The American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. is offering more scholarship opportunities in the amount of $2,000 to $5,000 to engineering students in the fall 1995-1996 academic year. Students must have a GPA of 3.25 or above and must be involved in the fields of heating, ventilation, air conditioning, or refrigeration, or in related areas in scientific research, technical writing, or HVAC system design, operation, or maintenance. Applications are available at the Financial Aid Office, and are due December 15, 1995.

The Concrete Egg Competition is part of the American Concrete Institute's (ACI) Annual Convention and will be held in Salt Lake City, UT 84111, (Telephone (801) 995-8331). The Awards Ceremony will be held on Saturday, June 24, 1995 at 1:00 p.m. at the Division Head of Research Immunology in the Chemistry Department, at (313) 532-2600. Students must have a GPA of 3.0 or above and must be involved in the fields of heating, ventilation, air conditioning, or refrigeration, or in related areas in scientific research, technical writing, or HVAC system design, operation, or maintenance. Applications are available at the Financial Aid Office, and are due December 15, 1995.

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12 September 29, 1995

Caltech Guitar Classes for the Fall quarter are scheduled for Saturday, October 14, 1995 from 3:00 to 4:00 pm in the Caltech Entrepreneur Club!

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