

"Life is like a toilet. Take heed not to get flushed."

The California **TECH**

"You're not paranoid if people really are after you."

Volume XCVII, Number 12

Pasadena, California

Friday, January 12, 1996

Moore Laboratory opened with great expectations

by Maria Huang

A generous gift of \$16.8 million from Gordon and Betty Moore has finally given birth to a new 90,000-square-foot laboratory that will enable the Caltech faculty in the Division of Engineering and Applied Science to accelerate their developing communication and computational systems of the future. With its porticoes and red tile roof, the Moore Laboratory of Engineering is true to the Mediterranean style of Caltech's traditional architecture.

The Moore Building is finely equipped with 110 high-powered Pentium personal computers, courtesy of the Intel Corporation, allowing faculty and students to conduct applications ranging from VLSI circuit design, simulations, word processing, and classroom work. Featuring the first fiber-optic computer network on Caltech campus, the Moore Lab computers will enhance faster communication of information. In addition to the advanced research facilities for

communications, power electronics, signal processing and microwave electronics, the Moore Lab contains lecture halls and teaching laboratories. In fact, a few of the teaching laboratories are devoted to motivated underclassmen in basic Applied Physics classes and Digital Electronics classes.

A Micro-department store, the EE stockroom carries over 1,000 items, varying from Integrated circuits, wires, electronics parts to stationary, drinks and candies. Located in the quiet sub-basement of Moore Lab, the spatial EE Stockroom also comes with a mini-library, housing numerous data books and electronics catalogues from various companies. "Having a place for the students to sit and go check out IC information is definitely a bonus," grins Lyn Hein, the stockroom manager. While "one is not a real EE unless he's got parts in his hands," Jenkin, the Vice President of the Intel Corporation, strongly encouraged

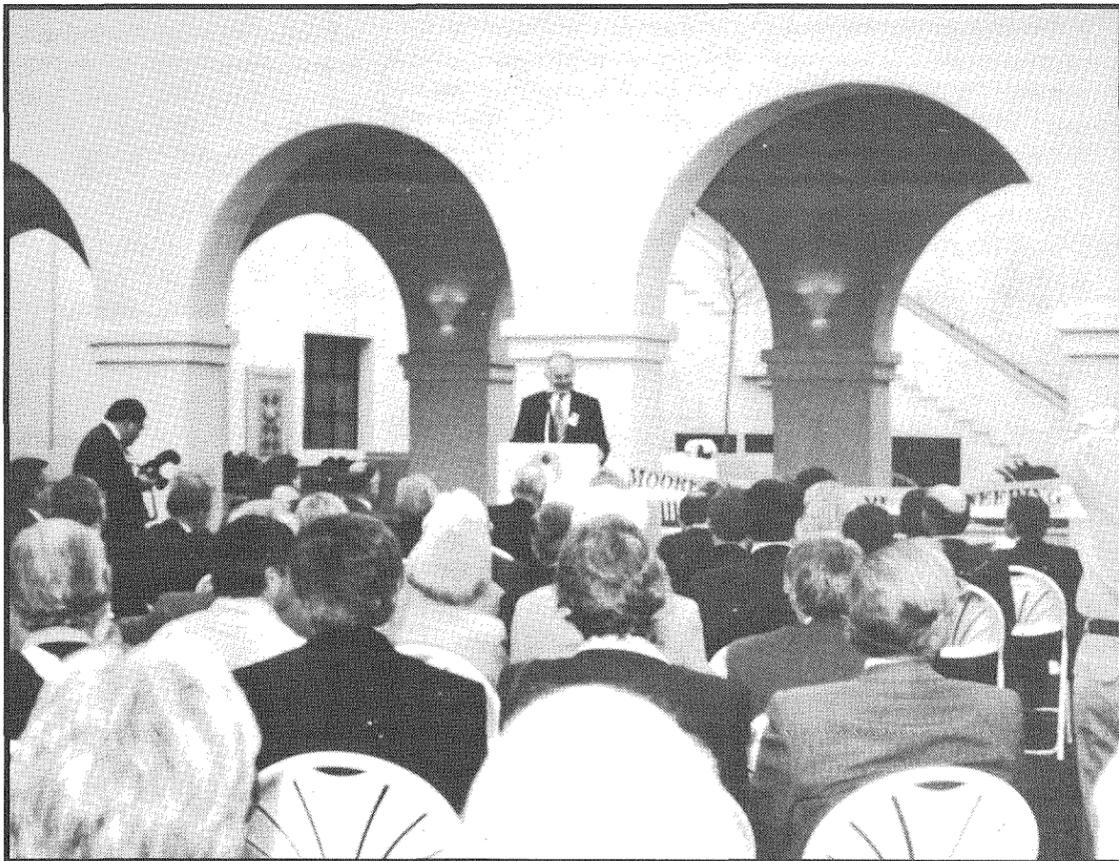


PHOTO BY MARIA HUANG

Could be Gordon Moore....

SEE MOORE ON PAGE 3

Spirit of Dr. King to be revived Monday

Y celebrations to memorialize slain civil rights leader

by Maria Huang

Looking for a little historical and cultural tour? A series of events you might want to consider is the Dr. Martin Luther King Birthday Commemoration. Following the performance of African American singing group Alkebulon Boys Choir, the famous political activist June Jordan will give a speech commemorating Dr. King's contributions, highlighting his life and civil rights struggles.

From the Harlem riots of 1964 to the Persian Gulf War, today's wars against immigrants and families on welfare, Gay & Lesbian Americans and all victims of hate crimes, Jordan's work transcends the traditional bounds of self and society, expressing the unity of equality, justice and tenderness.

Named "one of the most important poets writing today" by *The Library Journal*, Jordan has had poetry included in virtually every major anthology, such as Norton Anthology of Modern Poetry and The Village Voice Anthology. Drama triumphant, she published *The Issue, Bang Bang Uber Alles, and All Blessings in the 80s*. A regular columnist for *The Progressive*, Jordan's essays, reviews, articles and poems appear in a wide range of publications from the *Essence* to the *New*



PHOTO COURTESY OF THE CALTECH

Rev. Martin Luther King, Jr.

York Times; her outstanding achievement was further recognized when she received the National Association of Black Journalist Achievement Award for International Reporting on the Black Condition in 1984.

Jordan has become a voice that "epitomizes wise sister, alter ego, conscience, song." While delivering thoughts of commitment, passion, revolution and creativity, she challenges her readers to examine their own involvement in realizing the possibilities human-

ity can achieve.

A woman of extraordinary talent and strength, June Jordan will be speaking at noon on Monday, January 15, 1996 at Ramo Auditorium. For those who are unable to attend the noon celebration, there will be an Evening Medley of Gospel Songs performed by a mass choir participants including The PCC Gospel Choir and various other groups. Mark your calendar and be ready to experience a literary, cultural and musical tour.

They're here....

by Erik Streed

The frosh are on shadow grades this term. Being a frosh this concerns me. One of the reasons I choose Caltech over other schools was the fact that frosh year was all pass/fail. Supposedly this makes the transition to Tech easier to handle. Arriving here this fall I found out that third term would be on grades. No big deal, I thought, that's months away. Plenty of time to acclimate myself to the rigor (mortis?) of Tech. Now these shadow grades come creeping out of the woodwork. This trend is disturbing as it points directly back to the bad old days when frosh were graded all year.

Courses which have always been pass/fail (Physics 1b, Chemistry 1b, etc.) now need to be reworked. Grading structures are to be created. Percentage bands and bell curves to send poor frosh heads ringing. Who knows how this will affect the class of 1999? I am sure the administration hopes

that grades will help to motivate the frosh who are now blowing off various classes. However, will the benefit from this exceed the damage done to people who push themselves too far for a good grade? While only time will tell, I fear that the latter will dominate for there are many frosh so recently removed from the top of their respective high schools.

Frosh year is a time of transition. A time to explore new ideas, meet new people, and live without the hassle parents (most for the first time). With this comes a certain amount of recklessness and carelessness. Having the frosh on pass/fail eases the transition by giving us more leeway around our mistakes.

Whether conscious or unconscious, grading the frosh puts more stress on everybody. One of the last sanctuaries of sanity is being remove from us. No longer will the mantra of "Don't worry Frosh, you're on pass/fail" comfort the distressed frosh.

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LETTERS TO THE EDITOR

Affirmative action editorial sparks response

Dear Editors,

A major premise of your 1/5/96 editorial on affirmative action clashes with my real-world experiences in judging candidates for many different positions.

That is, that one can determine unambiguously who is "best qualified." It is almost always the case that the considerations are multi-dimensional (e.g., for undergradu-

ates, Caltech seeks demonstrable quantitative and verbal abilities, initiative, perseverance, breadth of interests, etc.) and that the metric for each dimension is poorly determined (to cite the most objective for admissions, SAT scores have a precision no better than +/- 20 points). While this does not mean that all candidates are indistinguishable, it does mean that any measure of qualification has a large error bar, and so there is often a pool of equally "qualified" candidates. It is then not unreasonable to consider such secondary factors as gender, ethnicity, or economic

background.

STEVEN E. KOONIN, '72
VICE PRESIDENT AND PROVOST
PROFESSOR OF THEORETICAL
PHYSICS

Dear Editors,

I was saddened to read the editorial in the Jan 5th edition of The Tech on the subject of affirmative action. It seemed to me that the writer missed the point of the policy rather spectacularly. It is not, as I understand it, intended to right the wrongs against minorities that occurred decades ago, but rather to help right the wrongs that are happening now. For example, while assessing college candidates on the basis of race is in a narrow context racist, it is designed to counter a broader racism which permeates American society and denies many minority Americans access to the quality of education necessary for them to achieve their potential and compete normally in college applications.

Affirmative action is described as unfair and racist, but I do not believe that it is. I believe that it is a response, to racism, occurring in America now, that deprives many minorities of things that more wealthy and privileged fellow Americans take for granted.

PETE BURGESS
SEISMIC LAB

Editors' note:
Last week's editorial on affirmative action was written by editor Mason Porter. The omission of Mason's name was an oversight and in no way implies that the editorial expresses the views of the California Tech, any other editor, or any staff member of this paper.

Undergraduates should explore, keep options open

Dear Editors,

This is in response to the article "Success & Our Future" by Samson Timoner that appeared in the January 5, 1996 issue of the Tech.

I find the article by Samson inspiring and full of energy. Nevertheless, I disagree with the article in saying that one should figure out their life goals as an undergraduate.

The undergraduate experience is when one usually discovers her interests and talents. It is a unique time in your life when you get to meet many people and participate in all kinds of activities. Goals once decided upon as a freshman may change over the course of four years as an undergraduate. This is quite alright as the average college student in the US changes his major 3 times.

Further, as you progress towards your degree, you may find that you have undiscovered talents even in your junior and senior year. You may not have been exposed to as many things in high school as you are in college, so restricting your goals as a freshman may be a pitfall.

Of course, if you are already sure about how you want to shape the rest of your life (say you want to be the President of the United States), that's great and you should probably pursue that goal with every effort. But leaving options open as an undergraduate will not damage your chances of success later in life.

The most important

thing to do as an undergraduate is not to waste time and remain idle. I suggest that as an undergraduate, one should strive to be doing something productive. This could be anything from doing well in your courses, to doing research, to writing poetry. The bottom line is to pursue your interests to the best that you can.

DEVABHAKTUNI SRIKRISHNA
SENIOR

Please send submissions for letters to the editor to

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Pasadena, CA 91125

or by electronic mail to
editors@tech.caltech.edu.

Deadline for submissions is Monday at 5pm on the week of publication.

The editors reserve the right to edit or refuse to print any letter for any reason.

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public events

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JACKIE TORRENCE

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JOHN CEPHAS
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Letters and announcements are welcome. All contributions should include the author's name and phone number and the intended date of publication. Submit copy (preferably on Macintosh 3.5" disk) to the Tech mailbox outside SAC room 40, or e-mail to editors@tech.caltech.edu. The editors reserve the right to edit and abridge all submissions for literacy, expediency, etc. Wei-Hwa is responsible for the Chinese Characters in the announcements only. All articles are the property of the authors. Authors and columnists retain all intellectual property rights. We're glad you're bored enough to read this section. (Ditch Day is tomorrow, Frosh!)
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Sign-ups for the positions of ASCIT President and ASCIT Vice-President/BOC Chair are up! (on the side of Winnett as usual). If you'd like to run for either position, sign-up at Winnett and submit a statement to the Tech by next Tuesday.

Scientists report first step toward a quantum computer

by Caltech Public Relations

PASADENA — Caltech physicists have demonstrated that individual photons, which normally do not interact, can strongly influence each other when brought together with an atom inside an optical cavity.

This result — interactions between single photons — could be used to make information processing devices that employ quantum-mechanical effects to improve their performance. Further, these devices could form the building blocks needed to construct a "quantum computer," a theoretical machine that, researchers believe, could outperform any computer based on conventional technology.

Scientists and security specialists have given the subject of quantum computing much attention since the 1994 discovery of an algorithm — a mathematical technique — for factoring large numbers on a quantum computer. This algorithm, devised by Peter Shor at AT&T Bell Labs in Murray Hill, New Jersey, means that in theory, a quantum computer could outperform any conceivable classical computer. Such a machine would have wide ranging implications for everything from national security to automated teller machines, because the encryption codes that protect electronic data rely on huge numbers that even the most powerful conventional computer cannot factor. A quantum computer would make such codes obsolete.

The area of quantum information and computation had caught the attention of the quantum optics group at Caltech, headed by Professor of Physics H. Jeff Kimble. Together with Seth Lloyd at MIT, the quantum optics group recognized that their experiments were closely related to something called quantum logic gates. Quantum logic gates are the building blocks needed to construct a quantum computer.

Conventional computers work by sending classical, prescribed "bits" of information —

the distinction between two alternate states, such as zero or one, no or yes — as pulses of electrical current through wires, transistors, and other components. The basic building blocks of an ordinary computer are logic gates, which process the bits of information. The processing either passes the bits through unchanged or "flips" them, changing zeroes to ones and vice versa. Theorists have proposed that a quantum computer might work by recreating the components and logic gates of conventional computers in a quantum mechanical way, using the quan-

The work of Kimble's group is especially important because they have focused on an optical implementation of quantum logic.

tum states of atomic particles to carry and manipulate information. The basic components in a quantum computer would be quantum logic gates.

Motivated by the recent excitement over Shor's algorithm, Kimble and his group demonstrated that the strong interaction between photons and an atom in an optical cavity can provide the basis for building optical quantum logic gates. Their optical quantum logic gate operates by processing the polarization states of a pair of photons, with the polarization state of each photon encoding one bit of information.

Any legitimate logic gate must display an essential feature called conditional dynamics, which means that the output of each gate must depend upon both inputs to the gate. Or, in an optical quantum logic gate, the output state of each photon must depend on the input state of both photons.

In their experiment, reported in the December 18, 1995 issue of Physical Review Letters, Kimble's group showed strong conditional dynamics for an atom in an opti-

cal cavity formed by two highly reflective mirrors, one of which allowed partial transmission of light. The scientists sent pairs of photons through the cavity, and investigated the states of the photons when they reemerged, showing that the output state of each photon depended on the polarization of both input photons. This is just what is required to implement quantum logic.

In effect, the cavity functioned as a rudimentary logic gate at the single photon level. The photons served as the current needed to carry bits of information; and changing the photons' polarization was analogous to flipping the bits in conventional computers. The Caltech result, by Kimble and graduate students Christina Hood, Hideo Mabuchi, Quentin Turchette, and research fellow Wolfgang Lange, was accompanied by a paper in the same issue of Physical Review Letters by a group at the National Institute of Standards and Technology in Boulder,

Colorado. Together these papers represent the first demonstrations of conditional dynamics at the single-quantum level — the level suitable for implementing discrete quantum logic.

While this result is a significant first step, many complex problems remain to be solved before even primitive networks of quantum logic gates could be built, much less an entire computer. Indeed, researchers have not yet determined whether large and complex quantum computers could ever be built using current technological strategies.

In this regard, the work of Kimble's group is especially important because they have focused on an optical implementation of quantum logic. Because single photons can be transmitted long distances through optical fibers, optical quantum logic gates could be used for specialized applications in optical communication, even if they prove not to be useful for quantum computers.

This work was supported by the National Science Foundation and the Office of Naval Research.

The Outside World

by Myfanwy Callahan

NEW YORK — The East Coast is caught once again in heavy snowstorms just days after the clean-up from the blizzard of '96 started. There were 95 casualties of the first blizzard which left millions of tons of snow on the city streets of the East. Snow began to fly again on Wednesday.

WASHINGTON, D.C. — The budget talks were suspended on Tuesday until next week. The discussion that was to bring about a final decision turned into 4 hrs. of haggling before all parties chose to take a break.

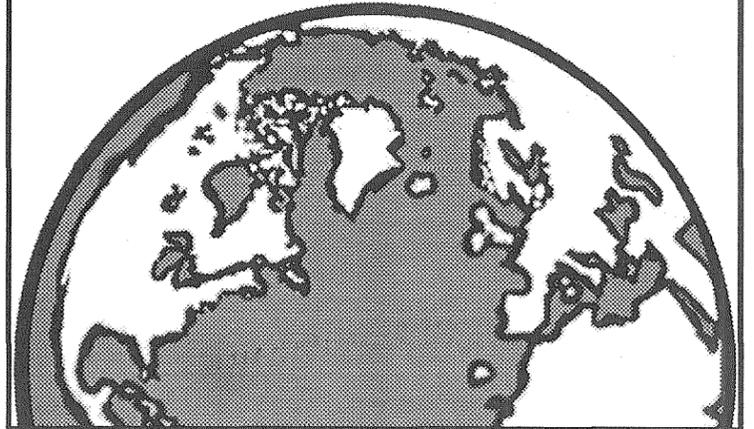
HAMPTON, NEW BRUNSWICK — Steve Fossett aborted his attempt to fly non-stop around the world in a balloon Wednesday. After starting in South Dakota, he encountered severe cold weather and technical difficulties, forcing him to land in a field in New Brunswick.

Such a flight has never been successfully attempted.

KIZLYAR, RUSSIA — Chechen rebels stormed a hospital Tuesday taking 2000 hostages. On a retreat Wednesday, the party was fired upon by a Russian helicopter taking out the only bridge in the area. The group has now taken over a farming village just a few miles from the border.

JERUSALEM, ISRAEL — Palestinians lined up to mourn the death of the master bomb-maker Yahya Ayyash last Saturday. This comes just two weeks before the first Palestinian elections under self-rule.

TOKYO, JAPAN — Japanese parliament officially elected Ryutaro Hashimoto Prime Minister yesterday. He may set a precedent for more assertive and nationalistic leadership in Japan.



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Moore: no more construction!

CONTINUED FROM PAGE 1

students to become motivated to learn electronic parts and to conduct hands-on experiments.

Having received his Ph.D. in chemistry from Caltech in 1954, Dr. Moore has been a long term supporter to the Institute. A co-founder of the Intel Corporation in 1968 with the late Robert Noyce, he now serves as chairman of the company. Often quoted for "if you slow down, you really doom yourself," Dr. Moore oversees the Caltech Board of Trustees, while supporting the investigators in the Caltech com-

munity to make discoveries in science and engineering of significant benefit to industry and to humankind.

The dedication of The Gordon and Betty Moore Laboratory of Engineering at the California Institute of Technology took place in the afternoon on Tuesday, January 9, 1996. Well attended by people inside and outside of the Caltech community, The ceremony began with a welcome speech by Caltech President, Dr. Thomas Everhart, and ended with the Moore family's warm invitation to tour the new-

born Science Center.

The birth of this research head-quarter was not trivial. The summer rain of 1995 definitely made the construction famously challenging. The attendants shared a moment of silent in memory of Mr. Jim Lennox, a construction work who sacrificed due to a construction accident last summer. The Mediterranean styled building erects at the north of the Caltech campus, providing the Caltech students and faculties an environment to tackle the problems that can be solved by science technology.

FRIDAY NIGHT ASCIT MOVIE

Roger Moore is

007TM

A View to a Kill

Baxter Lecture Hall

7:30 & 10:00

\$1.50 ASCIT members
\$2.00 All others

NEXT WEEK:

HAMLET

A.S.C.I.T.

Minutes

JANUARY 8, 1996

Present: The entire BOD plus Jon (not a student) and Peter Manca (Guppy)

Meeting starts at 10:02 p.m. Peter gives us the Movies budget from 1st term. We all discuss P Plant cleaning of Baxter Lecture hall after the Movies and P Plant's subsequent bills to the Movies. Peter agrees to talk to Bill Irwin, as Peter cleans up the Lecture Hall after the Movies every Saturday. Peter also discusses the problems the Movies had and have with the projectors. Peter finally requests the Movies' second term money from

Kanna, and Kanna pays him before he leaves.

- Jon wrote a bunch of recommendations and bylaws and resolutions, many (2) which we passed last meeting/year/term. The BOD discusses Jon's recommendations to the next BOD (notable recommendations deal with setting aside funds during the third term budget meeting to pay for unexpected events/trips/requests later in the year, holding meetings twice per month instead of once per week, and adding a standing invitation which is now SITTING at the BOTTOM of these minutes). We discuss and pass a resolution requiring

the BOD to meet with Caltech administration members once per term. We also talk about two possible Bylaw changes. The first proposed change, allowing the president slightly different voting privileges (he now has to beat a dead chicken in 5/4 time whenever he wants to vote), will be turned into a resolution re-defining a tie and defining the word "infastuous" as "a possible homonym of the word 'arbo-real'". The second amendment, separating the offices of BOC Chair and Vice-President with a 50 terawatt laser, was very incomplete and needs work. We'll rework the schematic and discuss the revised amendment next week.

- Laura has to talk to Graphic Arts about the billing process for the ASCIT copier. Laura also needs to talk to Stan Borodinsky to set up a separate ASCIT account to handle copier-related expenses.

- Dave wrote an agenda for the BOD for all 3 terms. Hopefully, this agenda will serve as a thoroughly redundant, useless re-statement of the already-known duties of the officers. Dave will

also meet with Sharyn Slavin and Stan Borodinsky about funding for the new ASCIT printer (as David Derkits REALLY would like his printer back). Finally, Dave will put up the signups for ASCIT President and Vice President this Wednesday.

Respectfully submitted,

Dave Relyea

ASCIT Secretary

"A standing invitation to all open ASCIT meetings is extended to ASCIT managers, ASCIT-appointed officers, faculty-student committee members, and members of the IHC and the BOC. Additionally, any member of the Caltech community is welcome to attend."

(We took an ASCIT chair hostage because non-appointed ASCIT officers were not invited except as a member of the Caltech community -Eds.)

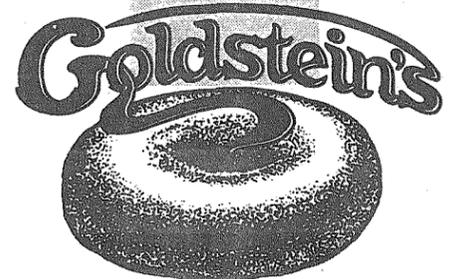
IT CAN NOW BE SHOWN THAT ALL ENERGY STEMS FROM THE VACUUM!

WHAT ITS STRUCTURE APPEARS TO BE, AND HOW IT MIGHT BE USED TO FURTHER ADVANTAGE WILL BE OUTLINED AT CALTECH ON JAN. 17, 1996 AT 7PM IN STEELE HALL IN A DEMONSTRATION/LECTURE SPONSORED BY THE IEEE MAGNETIC SOCIETY. THE SPEAKERS WILL BE PROFESSOR OF PHYSICS R. D. EAGLETON FROM CALPOLY POMONA AND M. N. KAPLAN, A RETIRED AEROSPACE SCIENTIST, WHO HAS MADE A LIFELONG STUDY OF THE SUBJECT.

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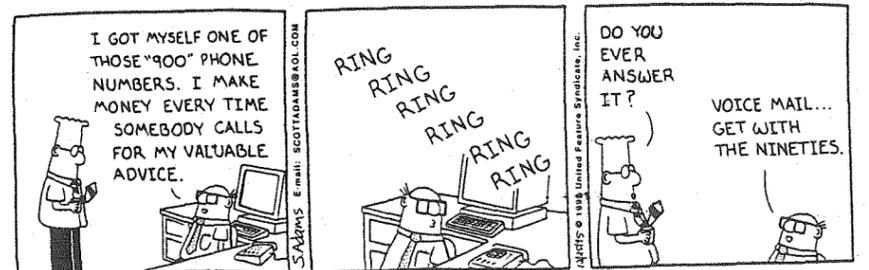
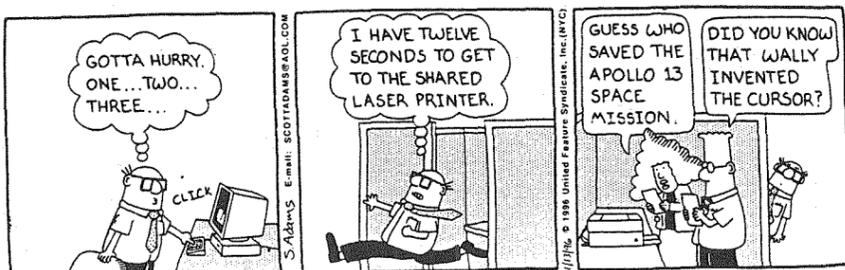
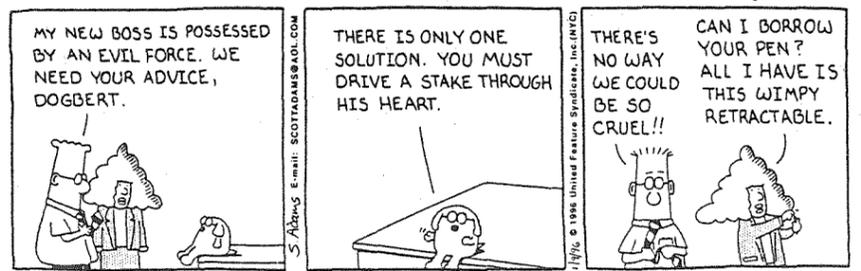
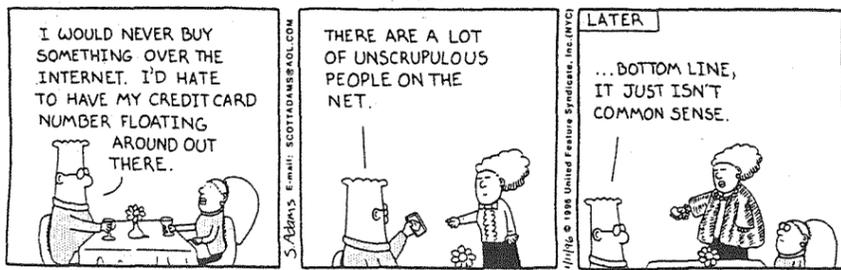
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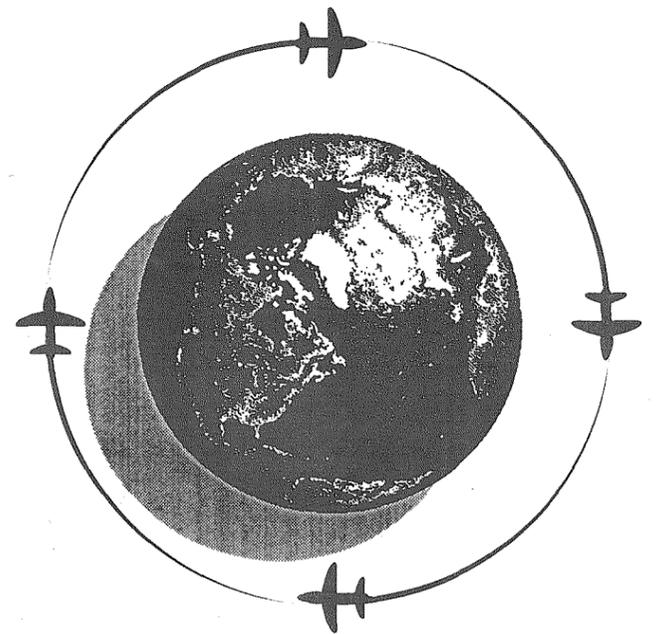
THE BOSTON CONSULTING GROUP

CASE INTERVIEW WORKSHOP

Are you a graduating senior interested in learning how a "case interview" works? If so, please join us for an *informal* session given by The Boston Consulting Group on the "case interview" experience.

Tuesday, January 16
4:00-6:00pm
Winnett Lounge

Please Note the Date Change From January 11 to January 16



- | | | | | | |
|-----------|--------------|--------------|-------------|---------------|-----------|
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| BRUSSELS | Hamburg | London | MOSCOW | Shanghai | ZÜRICH |

ADAM VILLANI: MEDIA GUY

by Adam Villani

Rolling Stone's 1996 Readers' and Critics' Poll

My old nemesis *Rolling Stone* magazine has released the winners of its 1996 readers' poll, and while they're maybe a step ahead of the Grammys, the *Rolling Stone* readers triumph mediocrity as much as ever. While not as grating as the Counting Crows, Pennsylvania's Artist of the Year winners Live, whose "Lightning Crashes" topped KROQ's lamer-than-ever 1995 list, just prove that Bob Seger-type let's-try-really-hard-to-sound-earnest arena rock can be repackaged and sold to today's youth as "alternative" if you shave your head and wear t-shirts. Ultra-middle-of-the-road Hootie and the Blowfish showed up on a lot of the *RS* readers' worst and best lists; a band that bland doesn't deserve to be on either. Inexplicably, Live's win in the Artist of the Year category doesn't merit any of the five "Best Band" slots. Huh? Other ignominious honorees included Alanis Morissette in several category

ries; Courtney Love, of all people, for Best Female Singer; joke group White Zombie as Best Metal Artist; the aptly-titled Rancid as Best Indie-Rock Band; Primus' sophomoric "Wynonna's Big Brown Beaver" for Best Video, and wanna-be alternative station KROQ for Best Radio Station.

As would be expected, the critics' poll showed evidence of much better taste, honoring innovative rocker PJ Harvey in several categories including Artist of the Year. Albums by Tricky, Elastica, Smashing Pumpkins, Neil Young, Oasis, and personal favorite Björk also received mention. On the other hand, they too named White Zombie as Best Metal Band and the reasonably good but not fantastic R.E.M. continued their death grip on the nation's rock critics by being named Best Band. The critics' winners don't really match up with my own, but I can respect their opinions, unlike those of the readers. It's good to see somebody coming out in favor of interesting, talented artists who bring something new to the music scene instead of the tired old fogs and inoffensive tripe-meisters nominated for Grammys or the flavor-of-the-week alternapop that the *RS* readers pre-

fer and the *RS* editors fawn over. Then again, GWAR did get another Grammy nomination this year.

Twelve Monkeys

Twelve Monkeys director Terry Gilliam has always made exhilarating films with visions of fantastic and disturbing worlds that play more like wild dreams than movies, and in his latest effort he has reined himself in enough to allow his skills as a director and storyteller to mature; as such *Twelve Monkeys* is stimulating viscerally, emotionally, and intellectually. The movie is a reworking and expansion of Chris Marker's haunting classic 1962 short film *La Jetée* that stars Bruce Willis as a prisoner from the future sent into our present to collect a pure sample of a virus that will wipe out 99 percent of the Earth's population and force the rest of the human race underground. Willis is considered a madman in the present-day world, but as his psychologist (Madeleine Stowe) begins to trust his sanity Willis himself begins to doubt it. The time travel aspect of the film is handled in a particularly interesting way—instead of trying to change the past, our protagonist is only trying to gather information in the past to help the future. Predestination is just one of many fascinating topics you'll be debating about *Twelve Monkeys* for years to come.

Art the Norton Utilities way

by Devabhaktuni Srikrishna

Contemporary art and Norton Utilities? Surprisingly, the two are related.

"A Glimpse of the Norton Collection as Revealed by Kim Dingle" is now showing at the Santa Monica Museum of Art. The Norton Collection contains contemporary art primarily by young and upcoming artists. Although there is no specific theme that pervades the entire collection, there is some focus on the "post-conceptual movement" and works having to do with identity. Kim Dingle, an LA artist, was chosen to create the exhibition of selected works from the Norton collection. In the exhibition she has tried to give a sense of the 'behind the scenes' efforts needed to maintain a large art collection.

In 1983, Peter Norton founded Peter Norton Computing, the software company that introduced the popular PC programs Norton Utilities, Norton Anti-Virus, and Unerase. In 1985, after the company became successful, Peter and his wife Eileen took to collecting contemporary art, fulfilling a dream they had shared since their courtship. Neither of them had any formal background in the visual arts. They established the Norton Foundation in 1988

and became serious art collectors interested in supporting emerging artists and artists from California. Peter Norton Computing was sold to the Silicon Valley conglomerate, Symantec in 1990, and the Nortons now spend much of their time collecting art.

In the current exhibit at the Santa Monica Museum of Art, one well known work is a 9 foot tall mannequin by the LA artist Charles Ray; another is a prison window by Robert Gober of New York. There are exciting sculptures, photographs, and paintings which together form a stunning visual experience. The Norton exhibit will be showing until February 25. In addition to the four galleries the exhibit spans, there is other art including a work that takes up a whole room with six TVs and two projectors.

The locality of the Santa Monica Art Museum is fun, too. There are many exotic shops and the beach is a couple blocks away. To get to the Museum, take the 110 south, to the 10 west, exit Lincoln left, Ocean Park right, and take a right on Main. The address is 2437 Main Street. The hours are Wed. and Thu. 11 a.m. - 6 p.m., Fri. 11 a.m. - 10 p.m., Sat. and Sun. 11 a.m. - 6 p.m. The telephone number is (310) 399-0433.

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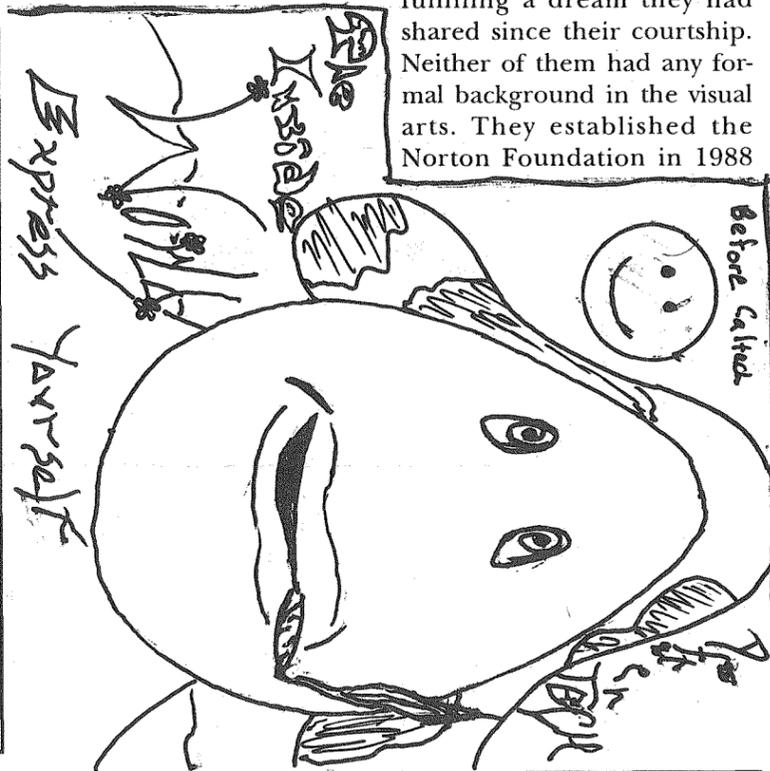
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YNEWS

by Donna Ebenstein

Whether you like poetry or hate it, we have the event for you! Fern Davyes will be giving a poetry reading tonight from 6:30 to 7:30 p.m. in the Judy Library in Baxter Lecture Hall. She manages to make even poetry haters enjoy her readings. Come see how she does it...

Monday, January 15th is **Martin Luther King, Jr. Day**. No, you don't get the day off. However, the Caltech Y has a few events scheduled to commemorate his birthday: 12:00 noon-June Jordan, speaker, Ramo Auditorium 6:30-8:00 PM-Alkebulan Boys Choir "From Cradle to Carriage", Ramo Auditorium, narration and gospel choir

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Book Review: A mathematician reads the newspaper

by Stephen D. Van Hooser

When one picks up a newspaper or tunes-in to the evening news, it seems that the world is in chaos. Crime is in our backyard, pollution is strangling our cities, and education is being flushed down the toilet. All sorts of "numerical" data abide: Politician Bob Smith has the country's best (or worst) approval rating ever, the economic indicators predict good (or bad) trends for the stock market, and a quarter of the population doubt the Holocaust. Does this stuff make any sense?

Enter best-selling author and mathematician John Allen Paulos. His latest offering, *A Mathematician Reads the Newspaper*, explores the ins-and-outs of journalism, offers some insight about interpreting stories, and tells readers how to catch their newspapers' nonsense.

Most of Paulos' conclusions are based upon high school mathematical logic. For example, individuals suspecting that cellular phones cause cancer forgot to take into account the *normal* cancer rate for people who don't use cellular phones. In murder trials using DNA fingerprinting, the probability of matching the print (say, one in a large number) is not relevant, but the probability that a matching suspect is guilty (one in the number of people who match the prints) *is* relevant.

Other conclusions were based on fundamentally misleading practices of some journalists. Paulos might have lambasted an article by appearing in *The Wall Street Journal* this past Wednesday about women's shoes: "Middle-aged and older women have their own reasons for demanding more comfortable dress shoes: 80 million of them suffer from foot problems, says the American Orthopaedic Foot and Ankle Society. And no wonder: The average American woman's foot size is 8 wide, yet the best-selling shoe size is 7.5 medium. Do the math." The author apparently means to suggest that women buy shoes that are too small for them. Unfortunately, he forgets that the most-common number in a series need not be the average. Let us "do the math." Consider the following (hypothetical) set of women's shoe sizes: 7, 7.5, 7.5, 7.5, 8, 8, 8.5, 9, 9. If everyone buys the correct size shoe, the best-selling shoe size is 7.5 and the average is 8; thus, a difference between the average and the most-common element doesn't suggest a problem.

While most of his topics are, like those mentioned above, quite basic, the text is *light*, not boring. Paulos writes in a fun, energetic style, sporting a lofty vocabulary reminiscent of SAT or GRE cram sessions. The book is organized into small "articles"; it definitely makes a good companion to the morning paper. While students of political science or others who do not study mathematics will benefit most from reading this book, the mathematically inclined will enjoy Paulos' occasional puzzles and will probably learn several things about numbers in the news that they've been overlooking.

MOTIVATIONAL GOAL-SETTING

by Samson Timoner

How do you go from student to Nobel Prize Winner or from student to C.E.O. of a Fortune 500 company? Achieving success is like baking a cake: if you follow the right recipe, you will get the desired results. The key is that the recipe for success is known! All you need to do to achieve your loftiest dreams is follow the instructions and use the right ingredients.

The first item you will need is a plan. In 1953 a study of Yale University graduates found that only 3 percent had written down their life goals. A follow-up study 20 years later found the combined financial net worth of those 3% was greater than the remaining 97% of the class combined! What is so powerful about writing your goals? You know what you want to do, why do you have to write it on paper?

When you list your specific

goals, you force yourself to focus. You will question yourself as you write down each goal. "Is that really what I want to do?" This will force you to ask questions such as how are you going to accomplish each goal. For example, suppose your lifelong dream is to earn a million dollars. Writing that on your goals list will force you to answer how you plan to do it, and whether you are willing to put in the time and effort to succeed. Just by writing your goals, you are forced to think about your future in more detail than you ever have before.

Once your goals list is written, it will serve as a reminder of what you expect in your future. Put your list in an easily visible place, so you can see it while you're working. When you are doing a difficult homework assignment, look at your list and remind yourself why you are working so hard. In my case, I think

going to M.I.T. is a key to my future. Knowing that I need to work hard enough to get into M.I.T. helps give me an extra push, and extra self-discipline to put that much more energy into my class work and research.

There is power in knowing what you want to do in 5, 10 and 20 years. If you walk around everyday thinking about the things you want to accomplish, you will achieve them! Your goals list can transform you from a talker to a doer. In other words, if you are constantly reminded of your goals, you will make decisions that will help you accomplish them. Conversely, if you "kind of know", what you might want to be doing in 20 years, there is no power.

Go home tonight and make a list of the things that you want to do with your life. If you want to climb Mount Everest, great! If you want to be the first woman on the moon, more power to you. Put down anything and everything you want to do, but make it concrete. Don't say, "I want to go to graduate school." Do some research. Pick a specific graduate school that fits your desires so you can visualize specifically why you are working so hard. "I'm working on this #\$\$#@!! homework set so that I can get into M.I.T!" Your goals list

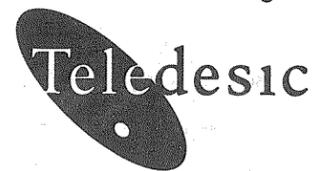
will guide your life. This makes so much sense when you think about it: you should live your life according to what you want to achieve; and, everything you want to achieve is on your goals list. So there are two purposes to a goals list: it will help you focus on what you want and it serves as a constant reminder of your future.

Once you have written your first goals list, make a plan. Figure out what you need to do to achieve each goal. Talk to knowledgeable people; do research. Once you know what you have to do, set deadlines. Don't worry that your plan will be flawed. That's O.K. As you carry out your plan, you can change it to make it more realistic.

The final step in making a goals list work for you is to spend your day thinking about it. This may seem excessive, but it's isn't. Try it for a day; thinking about your future can change your attitude on life. You'll have ideas that will help you toward your lifelong dreams — it's an exhilarating feeling when you have those ideas.

If you walk around thinking, "I really think I can do this," your self-confidence will build and you will put yourself in a position to succeed.

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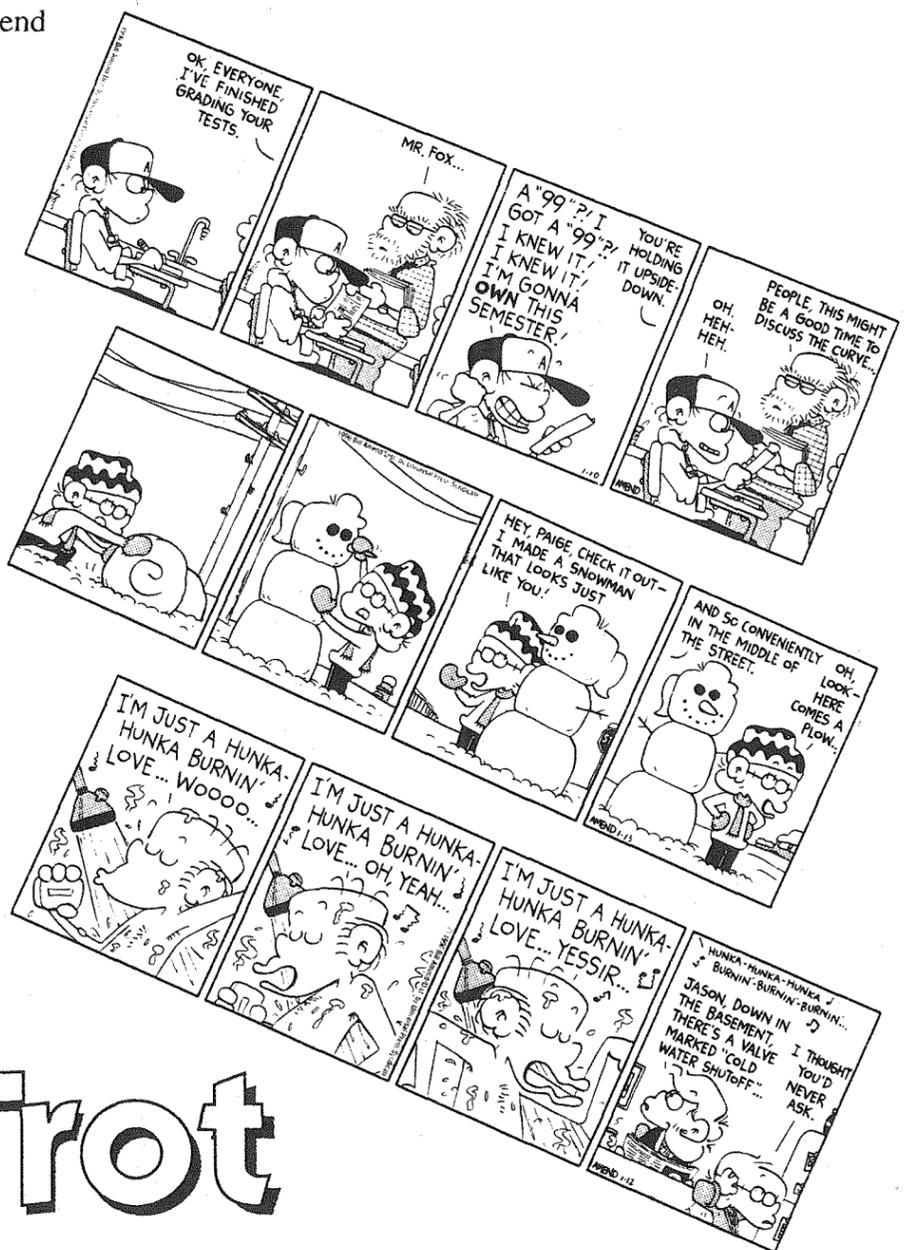
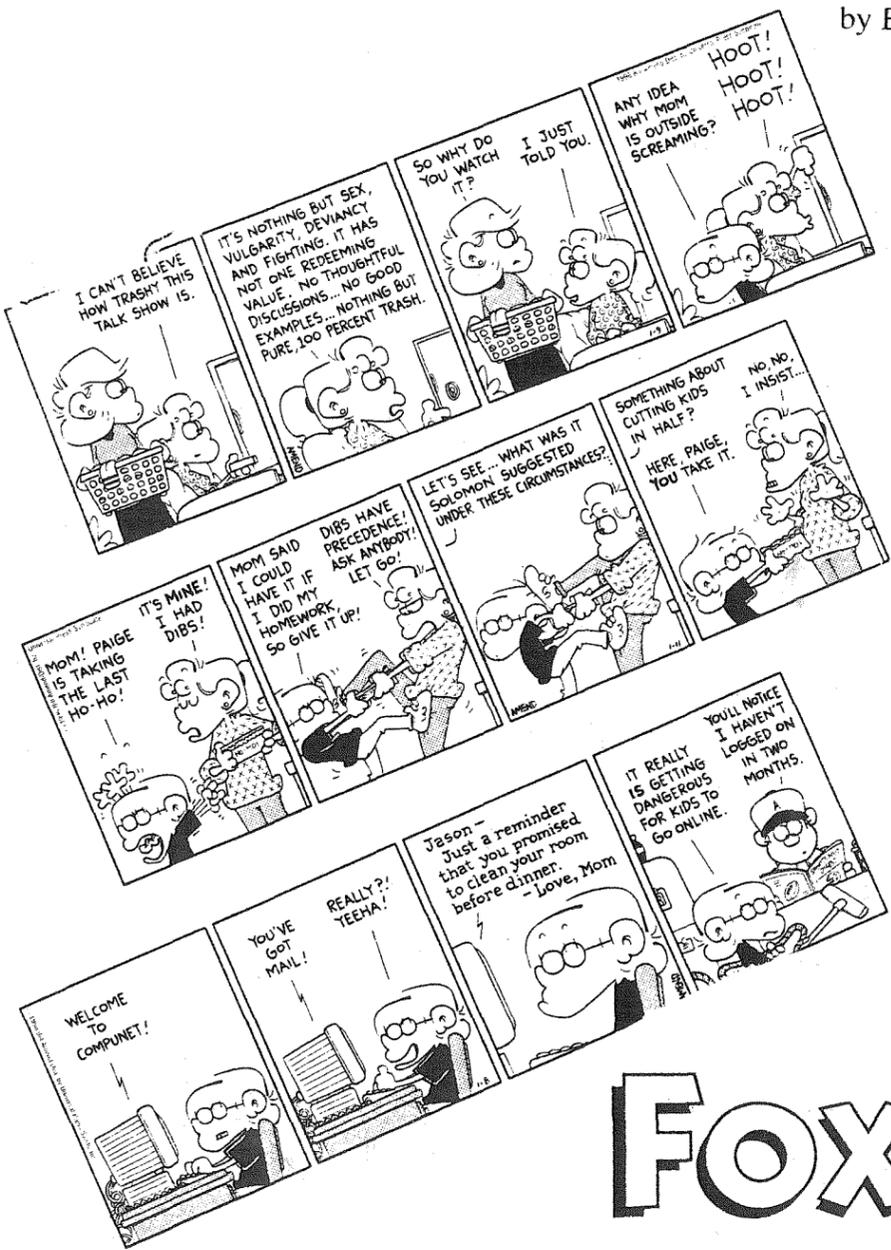
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by Bill Amend



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Baseball Hall of Fame shuts out new members

by Mason A. Porter

On Monday, 470 baseball reporters denied every player on the ballot entry into Major League Baseball's Hall of Fame. This was only the eighth time in this annual process, the first time since 1971, that nobody was elected to the Hall of Fame by the baseball writers who voted. Players become eligible five years after retirement and remain on the ballot for 15 years. A player needs to receive 75% of the votes (this year, at least 353 votes) in order to gain election to the Hall. Any player on the ballot who does not gain at least 5% of the vote (each writer may select up to 10 people, including write-in votes) is dropped from the ballot the following year, although reinstatement is possible. (Former Cub third baseman Ron Santo, for example, was placed on the ballot again in 1985 after not garnering enough votes in 1980, his first year of eligibility. His last year on the ballot was 1995, as the intervening years counted for years of eligibility.) Not all players are even allowed on the ballot. There are various longevity requirements and some players are so obviously not Hall-of-Famers (generally, such people were journeymen during their playing careers) that they are never permitted on the ballot. Additionally, Pete Rose is not permitted to be on the ballot due to a rule tailored specifically for him at the urging of former baseball commissioner Fay Vincent. Rose is currently 'banned for life' for gambling on baseball while he managed the Cincinnati Reds. Nevertheless, he received 14

write-in votes last year.

Nonelection by the writers, however, does not preclude election by the Veterans Committee, and 18-member group comprised mainly of former baseball players and current executives. The Veterans Committee can only consider those who both were on the Hall of Fame Ballot their final year of eligibility and garnered at least 60% of the vote in any one year. Jim Bunning, who missed being elected by a scant few votes several years ago, is expected to be granted entry through this means in 1996.

In each of the past three years (Reggie Jackson, Steve Carlton, and Mike Schmidt in 1993, 1994, and 1995 respectively), only one person per year was voted into the Hall of Fame by baseball writers. In each case, the candidate dominated the rest of the field to be voted into the Hall in his first year of eligibility. There was no such candidate this year. Former knuckleball pitcher Phil Niekro led the voting with 321 (68.3%) of the votes. Following him were first basemen Tony Perez (309 votes, 65.7%) who had his peak years as part of the "Big Red Machine" (the Reds) of the 1970's, and Don Sutton (300 votes, 63.9%), the mercenary pitcher whose gray locks are somewhat reminiscent of Shirley Temple. Niekro, affectionately known as "Knucksie", was in his fourth year of eligibility. He should have been elected, as he won 318 games while losing 274. Addition-

ally, he almost single-handedly kept the knuckleball alive, helping the two main active knuckleballers (Tom Candiotti of the Dodgers and Tim Wakefield of the Red Sox) control their main pitch. Sutton, in his third year of eligibility, won 324 games and lost only 254, and in my opinion should also have been voted into the Hall of Fame. Niekro



pointed out that 300 victories used to be considered good enough for automatic entry. However, nothing should be considered as such, because the player must be viewed on one's entire playing ability. For example, former slugger Dave Kingman hit about 450 homers, but would have become the first player with 500 homers not to be elected to the Hall had he reached that milestone. He was a one-dimensional player; he was horrible defensively and only batted about .230. He failed to get at least 5% of the votes his first year on the ballot, and was subsequently dropped. Both pitchers have similar statistics to Hall-of-Famer Gaylord

Perry, master of the spitball. That in itself is not, however, the reason to vote them in, as somebody who does not think Perry should be in the Hall probably should not vote for Sutton or Niekro. Though I feel Perry does belong there, there are some players (such as Harry Hooper) who most people believe do not.

One can also make arguments for Perez, former closer Bruce Sutter (who saves 300 games), and Steve Garvey, the would-be father of our country. None of the players who appeared on this year's ballot for the first time truly deserve election. In fact, only three of them (including Keith Hernandez and Bob Boone) even received the requisite 5% of the votes to be on the ballot next year. Some of those who will no longer be on the ballot are John Tudor, Claudell Washington, Jeffrey ("Hackman") Leonard, Johnny Ray, and Dan Quisenberry. (Quisenberry, though not Hall of Fame caliber, deserved to remain on the ballot for his role as the premier closer in baseball for several years.) In fact, Leonard, Ray, and a few others received no votes. In the next few years, the Hall of Fame will meet with many excellent candidates not currently eligible. In 1999, for example, Nolan ("The Express") Ryan, George Brett, Robin Yount, and Carlton Fisk will all be eligible for the first time (they all retired after the 1993 season), and should all get elected that year.

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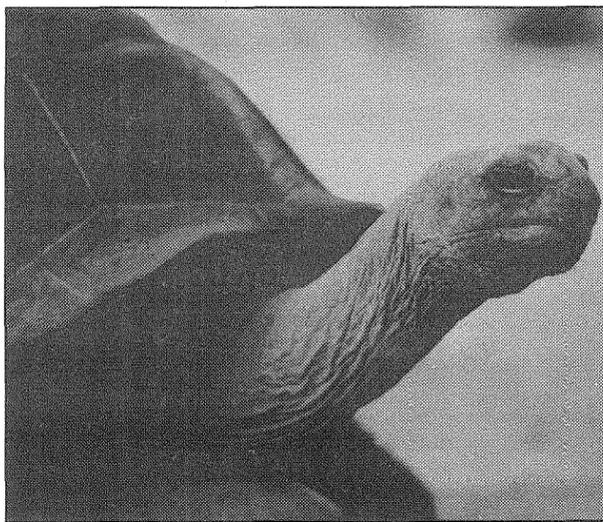
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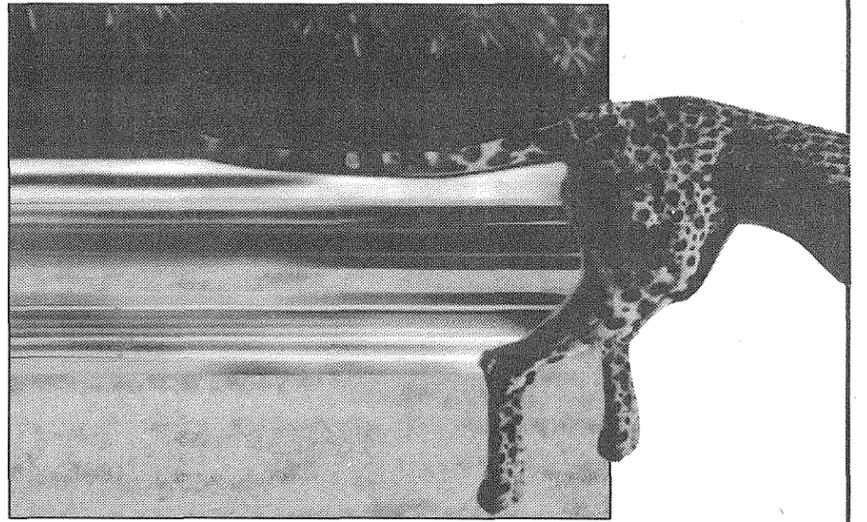
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Swimmers visit Vegas over break

by Clint Dodd

Seven members of the Caltech swim team worked out over Christmas break and attended the "Rebel Classic" held by the University of Nevada Las Vegas. Led by Mike Greene's times, the Techers went up against the fastest teams they will be facing this year. The teams included the University of Utah, Claremont, Las Vegas, U.C. Davis and eleven club teams. A total of 355 swimmers competed in the three day format. Day one saw Jen Holland and Heather Dean swimming well with fast times for the 50 freestyle, 32.32 and 31.09 respectively. Wes Tanaka took a fast 200 I.M. into the prelims and just missed the finals with a time of 2:12.80. Mike Greene made it into the finals in the 50 freestyle with a 22.29 and returned that night to place 5th in the consolation finals.

The relays also did well with Sooketoo Bhuta sprinting to a 23.65 on the second leg of the 200 freestyle and Wes popping a 1:01.54 in the fly, and Greene a 1:01.94 in the backstroke of the 400 medley relay. Day two was highlighted by Wes' 100 yard fly 1:03.21 and Colin Humphries and Brian Collins kept improving in the 200 freestyle. Heather swam a nice 100 backstroke holding solid splits of 22 seconds per 25 yards. Greene, who normally does not swim the backstroke, lowered his time to a 58.90 and made it into the bonus consolation heat for that evening.

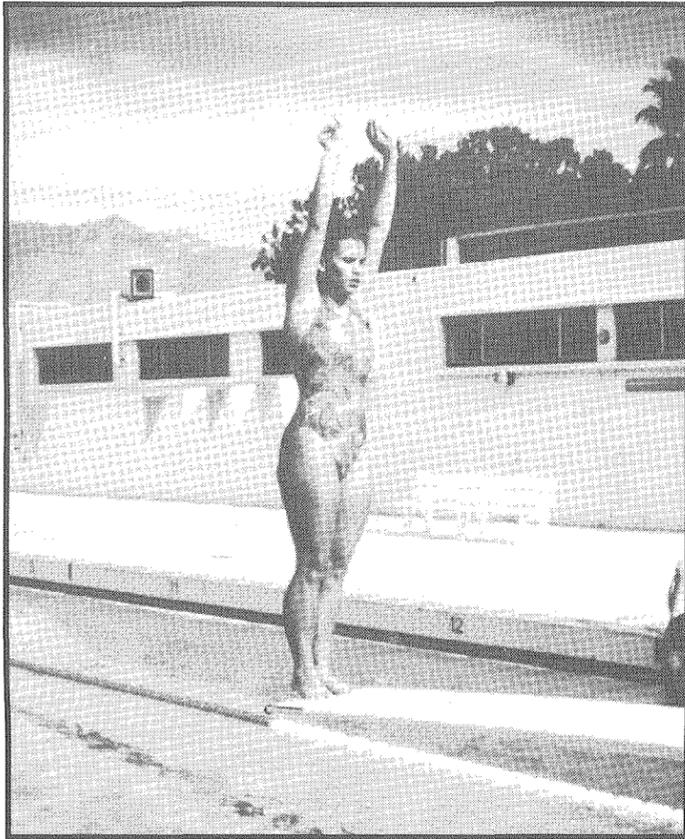


PHOTO BY ANGIE BEALKO

Sophomore Liz Callaghan enjoys a moment of calm before her descent into the pool.

Greene, swimming in lane eight, took the race out quickly with a 27.79 for the first 50 yards and was in third place at the wall and held that spot going into the final lap. Five swimmers were even ten yards from the wall as Greene turned it on, out touching everyone to win the race with his best time of a 56.77. The final day saw the team swimming solid with Brian Collins again lowering his time by dropping three seconds per 50 yards freestyle over the weekend. Ev-

everyone swam a good 100 yard freestyle with Bhuta working a hard 200 breaststroke swim. It was four years ago that a large Caltech team traveled to the "Glitter City" for the "Rebel Classic". This year the team effort was hurt by the timing of this year's event occurring during Christmas break. "Although sending a small group of athletes, the team did extremely well and will benefit from the experience of a big time meet" reports Coach Dodd.

Men capture first place in Hi-Tech Basketball Tournament

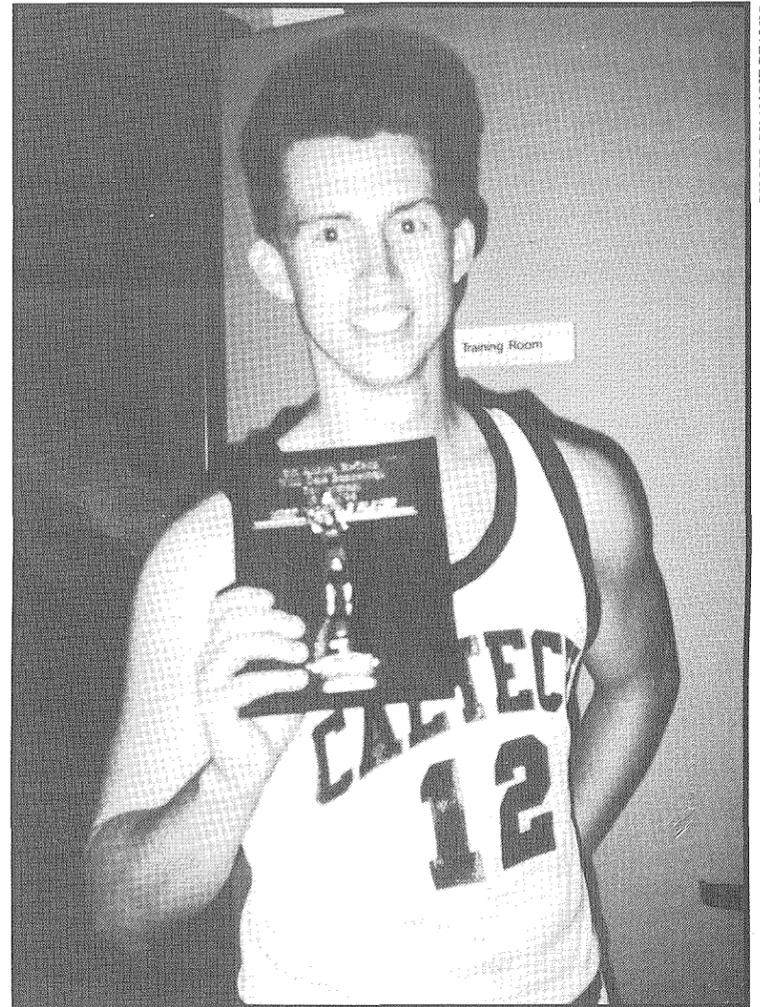


PHOTO BY ANGIE BEALKO

Junior Josh Moats shows off the first place trophy

by Angie Bealko

Fire. That's what Senior Matt Doff and Junior Josh Moats were on this past weekend as Caltech held its annual Hi-Tech Basketball Tournament. The Gentlemen Beavers posted an easy win on Friday night against Arizona College of the Bible as they strolled past ACB 76 to 55. Goff played outstanding, throwing in 21 points for the Beavers. Senior captain Steve Tsai also hustled his way toward netting 14 points that night, helping Caltech advance to the finals. On Saturday night Tech met Southwestern (AZ) in a rematch of last year's final in which the Gentlemen Beavers fell short to their opponent. This year, a different hand was dealt, and Tech walked away with a royal flush and enough hardware to satisfy a king. The first half gave the fans a heated neck and neck battle to watch as both sides played aggressively

from the tip off. Goff shot well from the key, while sophomore Arun Durairaj put heavy pressure on the opposing point guard and tallied an amazing steal, finishing the play off with a coast to coast lay-up. Moats sank two "three" pointers in the first half adding to Tech's strong shooting effort. That trend wasn't to be broken in the second half as Moats sank five more threes. Tsai also put in a pair of threes in the second half, as the Beavers began to pull away. Sophomore Matt Letterman had some great offensive rebounds and a powerful block near the three point line, giving Tech the strong fifth man play they needed. Sophomore Ben Turk added to his season block tally and controlled the key along with Goff. Tech captured first place honors with a score of 71-61. Goff and Turk received all Tournament honors, while Moats took home the coveted Tournament MVP award.

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Tech hoopsters looking for a win in rematch tonight

by Angie Bealko

Oh and Five. That's the streak the Beavers Basketball team is looking to break. Friday night may be the time for the turn around. That's when the women take on Pacific Christian for their third match up of the season. The first contest against PC proved to be mainly a game

between one extremely fine tuned team that had seen over a month of practice and one team full of many newcomers with only a few warm-ups under their belts. Unfortunately, Caltech filled the shoes of the newcomers. PC's offense and endurance was too much for the Beavers to handle opening night in Caltech's Braun Athletic Center.

The second matchup featured a fantastic first half showing by Caltech. The ladies demonstrated a much more controlled offensive and played extremely aggressive defense. However, PC came on strong the second half and clinched the win. The third and final matchup brings Pacific Christian back to Braun Athletic Center tonight (Friday) at 7:30

p.m. Coaches Sherry Roche and Mike Tice have helped developed stronger offenses for the Beavers and imbedded more aggressive defensive traps as well. These changes should enable Caltech to make a powerful showing Friday night at their final home appearance. The women are playing more cohesively as a team in recent games,

since all of the players are seeing large amounts of playing time. Inconsistent passing and rebounding still plague the Beavers, but an increase in hustle has helped dampen the effects of the turnovers. Look for Tech to fight hard for a win tonight as the 1995-96 home season comes to a close. Go out to Braun and support the team at 7:30 p.m.

This week's calendar

by Angie Bealko

- Friday 1/12**
Women's Basketball 7:30 p.m.
Home vs. Pacific Christian
LAST HOME GAME!!!
- Saturday 1/13**
Men's Basketball 7:30 p.m.
Away at Whittier
- Wednesday 1/17**
Men's Basketball 7:30 p.m.
Home vs. Redlands
- Thursday 1/18**
Women's Basketball 7:30 p.m.
Away at La Sierra

Scoreboard

by Angie Bealko

- Friday 1/5**
-Men's Basketball Won 76-55
Arizona College of the Bible
(Hi-Tech Tournament)
- Saturday 1/6**
-Men's Basketball
Won 71-61 Southwestern
(Hi-Tech Tournament)
- Women's Basketball
Lost 23-72 Swarthmore
- Men's Swimming
Lost 72-155 Pomona Pitzer
- Women's Swimming
Lost 31-162 Pomona Pitzer
- Tuesday 1/9**
-Women's Basketball
Lost 33-57 La Sierra

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PASADENA-BASED COMMUNICATIONS software company is looking for a C and Visual Basic 3.0 programmer. Also required: an understanding of state machines, Client/Server experience, B-trieve experience, and Windows knowledge. Please call Derek Backus at (818) 449-2852 to set up an appointment.

RATES: \$4.00 for first 30 words; 10¢ for each additional word. Send written ad with payment to 40-58. Deadline is 6 p.m., Monday before issue. No charge for on-campus lost & found.

Announcements

Caltech **Guitar Classes** for the Winter quarter will meet on Tuesdays starting on January 9th in Room 1 of the Student Activities Center (SAC). Beginning classes will be held from 4:30 to 5:30pm, intermediate from 3 to 4pm, and advanced classes from 5:30 to 6:30pm. Classical and Flamenco repertoires are explored but techniques transfer to other styles of guitar. The Beginning Class includes a jazz/folk chord system. Classes are free to Caltech students and other members of the Caltech community (space permitting). Undergraduates can receive 3 units of credit if they choose. Private instruction on any level can also be arranged. The instructor, Classical Guitarist Darryl Denning has an international background in performance, teaching and recording and can be reached by phone at (213) 465-0881 or by e-mail at ddenning@co.caltech.edu.

Events

Σ This evening **Hal McClure** will narrate an Armchair Adventures travel film entitled

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Σ denotes a new announcement.

Istanbul-Travels in Turkey at 8pm in the Beckman. Tickets to this film are priced between \$7 and \$9.

Σ On Monday, January 15th, a special celebration of the observance of Dr. Martin Luther King's birthday entitled **From Cradle to Carriage** will be held in the Ramo Auditorium starting at 6:30pm. The observance will include highlights of Dr. King's and civic rights struggles complemented by a medley of gospel songs by a mass choir. Participants in this celebration will include the Pasadena City College Gospel Choir and members of the First AME Church. Admission is free.

Σ **Larry I. Palmer**, Professor of Law at the Cornell Law School, will be giving a Science, Ethics, and Public Policy Seminar entitled **Law and Ethics at the Beginning and End of Life** on Thursday, January 18th, in the Judy Library.

Σ The **Dorian Wind Quintet** will present a Coleman Chamber Music Concert on Sunday, January 21st, at the Beckman Auditorium at 3:30pm. The program includes Bach's Concerto after Vivaldi (arr. M. Rechtman); Mozart's Divertimento, K. 439b (flute, clarinet, bassoon); Schiffrin's La Nouvelle Orleans; and Beethoven's Quintet in E-flat Major, Op. 4 (arr. M. Rechtman). Admission starts at \$22.50.

Σ A one day **blood drive** will held in the Winnett Student Lounge on Wednesday, January 31st, between 9:15am-2:30pm. To make an appointment, please contact Villa Zmuidzinas at x6001, although walk-ins are welcome and much appreciated.

Storyteller Jackie Torrence will appear on Saturday, January 13th at 2pm in Caltech's Beckman Auditorium for a 60 minute Family Faire presentation designed especially for children. Tickets are priced at \$9 for adults, \$5 for children and can be purchased at the Caltech Ticket Office. For more information, please call x4652.

The **Pacific Classical Winds** will give a free Paco A. Lagerstrom Chamber Music Concert on Sunday, January 14th at 3:30pm in the Dabney Library. The program will include Beethoven's Sonata in F, Op. 17 and Quintet in E-flat, Op. 16, as well as Kreutzer's Trio in E-flat, Op. 43 and Weber's Variations, Op. 33. The performance will be played in total on instruments authentic to the music's period.

The **Caltech Jazz Bands** will hold a concert with guest trumpet soloist Bobby Rodriguez on January 27th, 1996 at 8pm in the Beckman Auditorium. The concert and parking are free.

Club Announcements

The **Caltech Swedish Club** will meet at 3pm on Sunday, January 14th, at 975 San Pasquel Apartment #118 for a "julgranspunding" (post-Christmas celebration). Anyone interested in Scandinavian culture or speaking Swedish is welcome. For more information please contact Mikael Sahrling at either phone: (818)583-9001 or e-mail mikael@tapir.caltech.edu; or Lena Peterson at phone x6994 or (818)683-9102 or at e-mail: lena@pcmp.caltech.edu.

From the Counseling Center

Looking for a safe and supportive place to discuss issues such as coming out, being out, dealing with family, coping with a homophobic culture, and being GLB at Caltech? Want somewhere just to make new friends? You are invited to the **Gay/Lesbian/Bisexual Support Group**, which meets on the first and third Tuesdays of each month from 7:30pm till 10:00pm in the Health Center lounge. This is a confidential meeting and attending does not imply anything about a person's sexual orientation—only that he or she is willing to be supportive in this setting. The group usually discusses a particular relevant topic and then moves on to the general discussion. Refreshments are served. If you would like more information, please call x8331.

Fellowships and Scholarships

From the Fellowships Advising and Resources Office, extension 2150, e-mail lauren_stolper@starbase1.caltech.edu:

If any interested Juniors, Seniors and Grad students missed the December 1st **Rotary Scholarship** meeting, the application is currently available in the Fellowships Office. The deadline date for this application is **February 1st** for those applying through the Pasadena branch. A completed application and all supporting material including references and transcripts are due to Lauren Stolper in the Fellowships Office on that date. Students can also look into applying through the club in which their permanent residence is located.

Women who are U.S. citizens can apply for a **travel grant to Sweden** if they plan to study or research in Sweden. More information is available in the Fellowships Advising Office. Students can request an application from The American Women's Club in Sweden, Scholarship Foundation, P.O. Box 12054, S-102 22 Stockholm, Sweden. *Be sure to include a self addressed envelope with your application request.*

Summer language fellowships are available through the **University of Michigan's Japan Technology Program** to students interested in Engineering Science or Management from any U.S. institution. The fellowships are not for study in Japan, but fund study at the University of Michigan's Summer Intensive Japanese Language Program in Ann Arbor. Fellowships include tuition, fees, and a living stipend, but no travel costs.

Work as a volunteer in one or more of 23 countries this summer: Volunteers receive room and board and can work from 2 to 4 weeks on a project. More than one project can be scheduled. Projects include tasks such as restoring a castle, organizing a festival, planting trees, building a playground or implementing a recreation program for children. This program is sponsored by the Council

on **International Exchange (CIEE)**. It is a very popular program, and it is highly advisable to apply early. No language skills are needed with the exception of Spanish for Spain and conversational French for North Africa. There is a placement cost of \$195 for one 2-4 week project. Information brochures are available in the Fellowships Office or we would be happy to send you one via campus mail: e-mail your name, the fact that you want an International Volunteer Projects 1996 brochure and your mailcode to lauren_stolper@starbase1.caltech.edu. A listing of last year's volunteer projects is available for review in the office. Note that special fellowships for minority students interested in this program are available through the CIEE.

Attention seniors interested in pursuing a Masters of Science degree in aeronautical, astronautical, or aerospace engineering: Student members of the American Institute of Aeronautics and Astronautics who are planning to attend graduate school next fall can apply for a one time **Francois-Xavier Bagnoud Fellowship**. The award will provide six students with full tuition up to \$20,000 plus an \$18,000 stipend for one year. The Fellowships Advising Office has applications; the deadline for this application is **February 1st, 1996**.

The **Computational Science Graduate Fellowship Program** supports full time doctoral study in an applied science or engineering discipline with applications in high performance computing. Applicants must be in their first year of graduate study and be either U.S. citizens or permanent residents. The postmark deadline for completed applications is **Wednesday, January 24th**. Applications are available in the Fellowships Advising Office.

Attention seniors and first year graduate students. Applications for the **National Defense Science and Engineering Graduate Study Program (NDSEG)** are available in the Fellowships Advising and Resources Office. Applications are also available via the web at <http://www.battelle.org/ndseg/ndseg.html>. At this point the application is not live-it can only be printed from the web. A live application is still under development. Although, it was hoped that it would be available this year, this will probably not be the case. The NDSEG supports work in almost all fields of science and engineering. If your field of study does not appear on the list (e.g. astronomy), then list the field closest to it as your main field of study and your actual field under subdiscipline. (In the case of astronomy, a person would probably list either physics or math with astronomy as the subdiscipline.) If you have any other questions, please contact Lauren Stolper at the Fellowships Office. The NDSEG provides three years of support for graduate level study. Applicants must be U.S. citizens or nationals and be graduating seniors, recent alumni who have not yet begun graduate school, or 1st year graduate students. No military service or sponsorship of the Department of Defense is required of applicants. All NDSEG materials including transcripts and references must be received by, not postmarked by, **January 17th**.

The **Department of Energy Computational Science Graduate Fellowship** supports full-time Ph.D. level study in areas where the computer is used as a tool to solve problems in a scientific or engineering discipline. Examples of projects in this area might be computer based predictions of environmental changes, plasma dynamics for fusion energy, semiconductor design, or the study of fluid flow through geologic structures. etc. Therefore, students from a wide range of fields may find themselves eligible to apply for this fellowship. The application deadline is **January 24th**. A small number of applications are available in the Fellowships Advising and Resources Office.

From the Deans' Office, 102 Parsons-Gates:

The National Academy for Nuclear Training

awards scholarships to engineering undergraduates with outstanding academic achievement and interest in careers in the nuclear power industry. For the upcoming year, 200 college sophomores, juniors and seniors will be awarded scholarships of \$2,500 each. To be eligible, you must have 3.0 or better GPA and be majoring in one of the following: nuclear engineering, power generation health physics, mechanical, electrical or chemical engineering (with nuclear fission or power options). If interested, contact the Dean of Students Office, 102 Parsons-Gates. The deadline for applying is **February 1st, 1996**.

The Morris K. Udall Scholarship and Excellence in National Environmental Policy Foundation has created a scholarship program to attract students into careers in environmental public policy, health care, or tribal public policy. Scholarships are awarded on the basis of merit to students who are sophomores or juniors during the 1995-96 academic year and who have excellent academic records and demonstrated interest in and potential for careers in environmental public policy or are Native Americans or Alaska Natives who have excellent academic records and demonstrated interest in and potential for careers in health care or tribal public policy. The scholarship covers eligible expenses for tuition, fees, books, and room and board to a maximum of \$5,000 for one academic year.

From the Financial Aid Office, 515 S. Wilson, second floor:

The **Elie Wiesel Foundation for Humanity** is sponsoring its annual essay contest for full-time undergraduate juniors and seniors. Students are challenged to examine and analyze urgent ethical issues in essays of 3,000-4,000 words. First prize is \$5,000, second prize is \$2,500, and third prize is \$1,500. Essays must be postmarked by **January 12th, 1996**. For essay guidelines and additional information, visit the Financial Aid Office.

The **American Concrete Institute (ACI)** is offering several awards. The Peter D. Courtois Concrete Construction Scholarships are two \$1000 awards for undergraduate study in concrete construction for the 1996-97 academic year. Eligible students must be enrolled at least half-time and must be seniors in 1996-97. The application, available at the Financial Aid Office, with all required supporting documents is due **January 15th, 1996**.

The **Chinese-American Engineers and Scientists Association of Southern California (CESASC)** is offering scholarship awards for outstanding achievement. Approximately 10 awards will be made to undergraduate students for the 1995-96 academic year. The award consists of a certificate and a scholarship of at least \$400. Full-time undergraduate students with a minimum GPA of 3.5 are eligible to apply. Applications and all supporting documents are due **January 25th, 1996**.

The **Korean American Scholarship Foundation, Western Region**, is offering scholarships of \$1,000 to \$2,000 for full-time undergraduate and graduate students of Korean heritage. Application forms are available upon written request from: KASF Western Region Office, P.O. Box 486, Pacific Palisades, CA 90272. The deadline to apply is **January 31st, 1996**.

GLAMOUR Magazine announces its **1996 Top Ten College Women Competition**. Women who are currently full-time juniors are invited to submit applications to receive one of ten awards consisting of a cash prize of \$1,000, the opportunity to meet with top professionals in your field, and national recognition in **GLAMOUR's** October 1996 issue. Applications are available in the Financial Aid Office and must be completed and postmarked no later than **January 31st, 1996**.

The **American Mensa Education & Research Foundation** announces its 1995-96 Scholarship Essay Contest. Applicants must submit an application/entry form and an essay of fewer than 550 words describing their academic or career goals. Applicants must be U.S. Citizens or permanent residents. Applications must be postmarked on or before **January 31st, 1996**.

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