



KELROF participants complete another lap in the 24-hour relay race.

## Eight Faculty Get US Grants

Caltech News Bureau

Eight faculty members at the California Institute of Technology are among 200 scientists and engineers nationwide named by the U.S. Office of Science and Technology as recipients of the first Presidential Young Investigator Awards. Each has been awarded a base grant of \$25,000 annually for the next five years to support his research.

Administered by the National Science Foundation, the awards are designed to subsidize promising and original research by scholars near the outset of their careers, and to help universities attract and retain outstanding young PhDs who might otherwise pursue non-teaching professions. The NSF will also extend additional funds of up to \$37,500 annually to match contributions from outside industrial sources, bringing the possible total award to \$100,000 per year. Caltech is currently investigating the possibility of obtaining such extramural support for its awardees.

Caltech faculty members selected as Presidential Young Investigators are Robert W. Clayton, assistant professor of exploration geophysics; Joseph L. Kirschvink, assistant professor of geobiology; Robert D. McKeown, assistant professor of physics; Manfred Morari, professor of chemical engineering; John P. Preskill, associate professor of

theoretical physics; Thomas A. Prince, assistant professor of physics; David B. Rutledge, assistant professor of electrical engineering; and Gregory N. Stephanopoulos, associate professor of chemical engineering.

Dr. Clayton has pioneered the use of tomography—imaging techniques similar to those used in medical X-ray and CAT-scan technology—in the study and measurement of variations in the velocity of the earth's seismic waves. This technique has produced three-dimensional maps of the crust and upper-mantle structure of southern California, and is expected to yield new information on the dynamics of mantle convection, or the heat exchange between earth's surface and interior that leads to the creation and destruction of seafloor and is responsible for the movement of the continental plates. Dr. Clayton came to Caltech in 1981, the year he received his PhD from Stanford. He is a resident of Altadena.

Dr. Kirschvink is conducting research on the nature, properties, and fossil history of magnetite, a magnetic mineral that such organisms as birds, bees, and bacteria generate in their bodies and probably use to navigate by alignment with earth's geomagnetic field. His experimental work has established the existence of magnetite in several species of

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## Trustees and the Campus

By Lily Wu and Chris Meisl

This completes the interview with Stanton Avery, Chairman of the Board of Trustees of Caltech.

CHRIS MEISL: In relation to the Arroyo, how closely did the trustees listen to the campus, not just the faculty and the president but also the students?

RAY STANTON AVERY: If they know about it they are very interested. It's a problem for the

presentations by the faculty to the Board. We have, once in a while, had some contact with the students, but maybe we should find more ways to talk with the students and have them talk with us.

CM: Do you think the Board of

SA: In the absence of any contrary information, it certainly is.

LW: Is there any thought given to weigh the teaching ability of the professor? Or is it that if he's a great researcher and scientist, they will take him no matter how well or poorly he teaches?

SA: Well in that sort of recommendation, I think the trustees are simply unable to judge. Doesn't it come down to this, that if an issue were to come up, say the president wanted to hire his uncle because he needed the job, and maybe the family situation was such that that was a reasonable thing for the President to want to do (this is all hypothetical, of course), then the Board should have the power to say "forget it."

If it looks like the approval is perfunctory or uninformed, you might say it's the reservation of the ability to say, "no

**"If there is a way communication could be improved between students and the Board, it would be very useful and welcome."**

trustees to know. I frankly didn't know the pot [Arroyo] was boiling when it was and that shouldn't be. What the trustees could do about it or what might have been done, I don't know. Whatever would have been done would have to be done through the administration of course, and not the trustees moving in on it. It wouldn't happen that way.

CM: But are the trustees concerned with student opinion on matters and concerns of the students?

SA: They are if they know, the problem is access.

LILY WU: But it's never actually sought.

SA: Well again, you get into this difficult area. We don't want to spy on the administration. So how do you get informed without being intrusive. And that really comes down to the relationship between the trustees and the Chairman or the trustees and the President of the administration; how well they communicate together. They should be and sometimes they're not.

If there is a way communication could be improved between students and the Board, it would be very useful and welcome. You planted a thought there. We have these

Trustees would be interested in more direct communication with the students.

SA: Yes, if there are ways that could be increased, that would be good.

LW: It seems from what you said earlier that most of the issues that concern students,

**"Caltech is not a diversified school. To put it in blunt terms, if a person wants or needs a generalized education, he should go to where it's available."**

say the teaching quality or the social atmosphere, are really more up to the President and the administration. You wouldn't really consider those in your realm, or would you?

SA: They're not irrelevant but they are the responsibility of the President of the administration and the faculty. As I say, you have to avoid dual responsibility even though it would seem desirable for everybody to know everything. Nevertheless you can't run a railroad on that basis.

LW: Another responsibility of the trustees is that every time a professor is hired, it has to be approved by the trustees. Is that approval automatic?

we don't like this person," or "we don't like your paying this person off-scale," or whatever. It's the reservation of a right usually, rather than an exercise of a right or responsibility.

LW: That is a conflict point between the students and the Institute. On the one hand, the Institute has a reputation and excellent departments to maintain so it would always be in their interest to hire the one who can publish the most papers. The students, on the other hand, though they are concerned about the institution, are there primarily for an education, so the students would prefer the better teacher.

But the students have no

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## Meeting to Discuss JPL Defense Projects

Talon Gold and related defense research programs will be the topic of an information meeting next Wednesday afternoon at 3 in Ramo Auditorium.

The meeting is being organized by Robert Christy, chairman of the Committee on Oversight of Classified Research.

The purpose of the meeting is to provide a forum for informing the Caltech community on questions connected with

the possible involvement of JPL with Talon Gold, LODE, and other research and development programs which may in the future be connected with the Strategic Defense Initiative, popularly known as the Star Wars program.

A panel representing JPL and the campus and chaired by Christy will provide background information.

The floor will then be opened to questions and discussion.

## Bonpane on Nicaragua

By Hossein Mohammad  
Blase Bonpane, and American expert on Central America and director of the Office of the Americas, will come to campus on Tuesday, May 29, to speak on the situation in Nicaragua.

Bonpane, who hosts a biweekly radio program on Nicaragua and Central America on a local radio station, will speak at noon Tuesday, downstairs in the Winnett Student Center.

Bonpane has studied the social and political side of the conflict in Central America for many years. He has published several books and articles and spoken extensively on the subject. Since the 1979 Revolution in Nicaragua, he has taken a

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## ASCIT Notes Elections

are today for class officers and bylaws changes. Runoffs will be Tuesday.

# Avery Comments on His Role on Board,

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say in the matter.

SA: It's the Institute's responsibility, of course, to do both, particularly Caltech. Caltech is not trying to emulate Pomona College or Occidental or Stanford or anybody else. It's not a diversified school and it's very heavy on the graduate student

sciences and I think you can have both at this level. We had a meeting recently for two days on the value of the humanities, and I took part in that because I believe strongly. In my own case, all I had was humanities and that's what made it possible for me to function. I have no specialized training at all.

to be organized off campus, so to speak. I do think there are some unexploited possibilities in that area.

LW: Do you ever find any conflicts of interest in all these different spheres? You're on the Board of Trustees of the Huntington Library and the L.A. County Museum, and you're also very prominent in the business field, and then there's technology. Do those different spheres ever clash?

SA: Financially, yes. Simply because you can't support them all. In raising money for the Huntington, you could look at that and say, "well, if you get money for the Huntington, you haven't got it for Caltech."

But actually, in my observations, money seeks its own life, so to speak. As a donor, I'm more likely to be appealed to by something that strikes me as being important or interesting and I just do it. And if it happens to be the Huntington, that's the way it comes out. And if it happens to be Caltech or a project they have, that's the way it comes out. So it's a competition for support. Some things fail and some things gain.

But, answering your question, the only competition is in

have to look at the mechanics of money and inflation.

LW: Do you find that that was a sensible way to trim the budget, by cutting off all these areas?

SA: I really think if you look closely at the responsibility that he has, that the government has, and the way the House of Representatives right now is almost torn apart between what they would like to do and what they can do, that's what it comes down to.

I would hate to see our defense establishment dismantled or ignored, because the people involved in that have the same need for security in their jobs. The government has to at some point say, "okay, enough of that, we're going to put it over here." But every time they

SA: Well that'll vary as far as individual trustees are concerned. You have those who never come to a meeting, virtually never or once a year. Some local ones are more available, but feel that they are contributing simply by contributing their name. So, you have all the way from that to those who are tremendously involved and effective, and the Chairman tries to maintain the balance.

As a trustee member, contributions are different. For instance, if a man is tremendously wealthy, and some of our trustees are, and doesn't come to your meetings, well, so what? And vice versa.

For instance, Mary Scranton and Governor Scranton are both very active, very thoughtful people. They're on a

**"I hope that any constraints or lacks in that area are due simply to the limitations of size rather than choice."**

side, and the research side, and the scientific side.

MIT, I guess, would be an illustration of what you become if you got bigger, or big enough to accommodate more of the educational side as such. There you have an undergraduate student body of 4,000 or 5,000 and with that change of numbers, you would change substance and quality and flexibility. It's, in my eyes, a very different institution from Caltech. Caltech, by its small size and specialization, is Caltech. So certain things get left out. You stay small, which I certainly hope Caltech continues to do.

LW: It seems everything dealing with Caltech is always viewed in a much bigger picture than students see because they're only there for four years. So if they want the place to be socially pleasant and if they want good teachers, those interests just won't be looked after.

SA: I hope that you are adequately looked after and that any constraints or lacks in that area are due simply to the limitations of size rather than choice.

I've thought a lot about the whole question of the humanities as against the hard

I think that will always be a point which will never be satisfied to everybody's satisfaction at Caltech. Or to put it in blunt terms, if a person wants a generalized education, he should go to where it's available. In the case of Caltech, how can it provide the whole thing?

I think we can do more than we have, I think we're doing more than we have in the past. For instance, in our association with the Huntington Library, the faculty is more active than the students, I'm afraid, but that's certainly a source almost on campus. That should be organized and

**"I would hate to see our defense establishment dismantled or ignored."**

made more available. Same thing at Occidental, which is a good school, a great school, but not as specialized as Caltech. There is a collaboration between them and the students at Oxy have access to Caltech and vice versa. And in view of the closeness of Claremont, there could be, I think, more availability there to excellent professors, stimulating professors. But it would have

time or money.

LW: Has it become harder in the last few years, because arts and academics have suffered under Reagan's administration?

SA: Yes. Of course, then you

whole host of boards and government bureaus and committees; spread very thin, but very effective. They don't contribute large amounts of money, and if they tried to with all their activities, nobody would get very much, even if they were very wealthy. But they're very productive board members. Again, in our pluralism as a society, we try to

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**"I've sometimes said the end of the line is when everything's peaceful and happy, because then you know nothing's going on."**

do that, they're criticized.

I think I'm correct in saying the product of controlling, of cutting down on both defense (as Reagan agrees to do today) and other governmental activities which are valuable and should be done, you end up cutting the whole thing painfully. In our sort of society, that's never going to go away. It's a never ending process. The end of the line is when everything's peaceful and happy, because then you know nothing's going on.

LW: What's the difference between the chairman and the other trustees?

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### The Caltech Y Fly-by

Friday . . . May 25  
Noon Concert - Dreamer, Noon on the Quad (of course).  
Tuesday . . . May 29  
"Nicaragua: The Crisis in Central America," Blase Bonpane, Director of the Office of the Americas, Winnett Lounge at Noon.  
Wednesday . . . May 30  
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# Fundraising, Institute's Responsibilities

**"As you add new board members, you look at them and say, 'is he or she a potential Chairman?'"**

from page 3  
establish a balance of support.

LW: Do the trustees themselves nominate a Chairman when one is needed?

SA: They can. I just learned this year, and don't ask me to explain why it happened, that when I was invited to join the Caltech Board, some of them had in mind that I should become Chairman. I didn't know that at the time, and felt a little manipulated when I learned about it. It's not a mechanical process, and not entirely a consensus either, but a combination of... Well, for instance, right now, in fact for years, one of my duties is to try to make sure that my successor as Chairman is a person who is as good as we have available for Caltech. So that's in the back of my mind continuously and, as you add new board members, you look at them and say, "is he or she a potential Chairman?"

Then you might say, "do you appoint the Chairman?" No, I don't. But I can be quite influential in lining up the troops and making a suggestion. Usually there's no real problem, though I can imagine it happening with two strong people who both have a Chairman in mind they would like to push. But I've never been involved in a strongly political situation like that. Somehow you know who would do a good job and somebody makes that suggestion and others rally around and you end up in good shape. If you're not in good shape then you go through the process in reverse.

CM: Does the Chairman have a lot of influence on the other board members?

SA: Yes, he should and does.

Not in an authoritative sense at all. It could blow the board wide open to be Hitler or to start ordering people around. Everything would fall apart. No, it's much more subtle.

CM: Do you coordinate the efforts of the entire board?

SA: Yes, I suppose it is coordinating. The Board is sort of a

**"You hopefully get people who have a true interest in society as well as Caltech."**

fire department. You mentioned earlier, if anything happens to the president, then the overwhelming requirement would be to fill that gap. That only happened once in the last ten or fifteen years, and you hope that those sorts of crises don't happen often. But when they do, the Board should be ready to put out the fire, or fill in the gap, or whatever.

LW: It sounds like being a trustee is a lot of pain and responsibility for not all that much reward. Is it just for philanthropy?

SA: Oh that's a combination too. One of the things you have to guard against is people who have an ax to grind or want to join the board because they would meet other people

**"Some heads of businesses believe that their political views should be made the view of their company. I don't feel that way myself."**

to sell something to. You don't want that.

LW: So the only trustee candidates you are interested in are true philanthropists?

SA: I'd say that's right. You hopefully get people who have a true interest in society as well as Caltech and who enjoy their position in the community and want to enhance it if that will; to get pleasure out of contributing to something they think is good. It's self-seeking in that you gain satisfaction from it, but there shouldn't be any way to benefit from any other aspect; either financially or in business or academic the world.

LW: One incident which I heard from an alumnus from a few years ago was that a bunch of student put up a sign on Millikan Library overnight which said "Impeach Nixon."

SA: I remember that very well.

LW: The student was under the impression that some trustees were very concerned over it. How did they even relate to the trustees and why were they concerned?

SA: I was here at that time and I remember that with some amazement. Let me respond to that in my own way which is that yes, he was right that there was concern not from the board as such but to individual board members who were or were not Nixon supporters. My view as head of my company and chairman of Caltech may be a little unique but let me speak to it in terms of being in management.

Some heads of businesses believe that their political views should be made the view of

their company, that he should contribute company money to support his political views. I don't feel that way. I know we have Democrats and Republicans and right and left and black and white and everything. I feel, since that is what makes up my company—and we of course have large overseas operations, too—it would be very arrogant to divert or use the company's power, financially or otherwise, to promote a political point of view. We don't do that.

organization, and Caltech, is sort of diverse, should not be strongly partisan or political or even ethical, I don't mean unethical but...

LW: You mean amoral rather than immoral.

SA: Yes, he should be sensitive to all points of view, and that means he cannot be authoritarian and say "you have to be a whatever or get out." I know I am not alone, but somewhat unusual in that regard.

LW: You mentioned almost

**"Sometimes there were magic circles drawn around me because I'm not quite one of the club."**

That doesn't mean that all companies behave like that, but Avery does not. I, as the leader, insofar as is possible, should be, not neutered, but neutral. And I'm not entirely popular for that reason in the business community.

Sometimes there were magic circles drawn around me because I'm not quite one of the club. There is a tendency for some to feel that business is business and so on. But I feel that the head of any diverse

jokingly earlier the best man or woman for the job of president. Do you think we are close to a woman president for Caltech? There aren't even any tenured woman professors and next year's freshman class will only have about twelve percent women.

SA: You have to find out why there are no tenured women professors—if that is the case—and why only 12% of the freshman class are women. It is not all discrimination.

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## Four Caltech Alumni Receive Distinguished Award

The California Institute of Technology conferred its highest honor—the Distinguished Alumnus Award—on four of its graduates Saturday, May 19, at Alumni Seminar Day on the campus.

The recipients included Arnold O. Beckman, Corona del Mar, founder and chairman of Beckman Instruments and chairman emeritus of Caltech's Board of Trustees; Carel Otte, LaCanada, president of the Geothermal Division of Union Oil Company of California; Eberhardt Rehtin, Palos Verdes Estates, president and chief executive officer of The Aerospace Corporation; and physicist George Zweig, Los Alamos, New Mexico, a staff

member of the Los Alamos National Laboratory.

Dr. Beckman founded his company in 1935 with the development of a pH meter that has become an indispensable tool for analytical chemists. The firm went on to become a major international manufacturer of instruments and related products for medicine, science, industry, environmental technology, and many other fields. In 1982, the company merged with Smith Kline Corporation to form one of the world's leading health care and life science companies.

Dr. Beckman received his BS and MS degrees from the University of Illinois and his PhD from Caltech in 1928. He was a member of the chemistry

faculty at the Institute until 1940 when he left to devote full time to his company.

He served as chairman of the Caltech Board of Trustees from 1964 to 1974, when he was elected chairman emeritus. In 1980, his friends endowed the Arnold O. Beckman Professorship of Chemistry at the Institute as "a continuing tribute to his leadership." He has received many honors for his technical, business, and civic contributions, among them the Hoover Medal of the American Association of Engineering Societies and the Industrialist of the Year Award of the California Museum of Science and Industry.

In giving Dr. Beckman the award, the Institute made its first exception to a rule that members of the faculty, staff, or Board of Trustees are not eligible to receive it.

Carel Otte is president of the Geothermal Division of the Union Oil Company of California, where he has directed geothermal activities since 1962. Under his leadership, Union Oil has developed The Geysers field in Sonoma County, California, into the world's largest producer of geothermal energy. The division has also discovered two geothermal fields in Luzon Island in the Philippines, making that country the second largest producer in the world.

A native of the Netherlands, Otte came to the

United States in 1948 after earning a bachelor's degree in geology from the University of Amsterdam. He received his MS and PhD degrees from Caltech and was employed by Shell Oil and by Pure Oil Company until the latter merged with Union Oil Company of California.

Dr. Otte is a Fellow of the Geological Society of America and a member of the American Association of Petroleum Geologists. He served as chairman of the U.S. Department of Energy Advisory Committee on Geothermal Energy and was a Distinguished Lecturer for the Society of Petroleum Engineers.

Eberhardt Rehtin is president and chief executive officer of The Aerospace Corporation. He earned his BS degree from Caltech in 1946 and his PhD from the Institute in 1950. From 1949 to 1967 he was employed at JPL as an assistant director of the Laboratory and director of the NASA/JPL Deep Space Network.

In 1967, Dr. Rehtin joined the Department of Defense to head the Advanced Research Projects Agency, and in 1970 he became principal deputy director of defense research and engineering. He went on to become assistant secretary of defense for telecommunications.

Dr. Rehtin joined Hewlett-Packard as chief engineer in 1973 and was in this capacity

until taking his present role with Aerospace.

He has served on advisory panels to the North Atlantic Treaty Organization and as chairman of the National Academy of Sciences' Naval Studies Board. For this work, he was presented with the Distinguished Public Service Award, the Navy's highest public service honor. He has received a NASA medal for exceptional scientific achievement, and numerous other honors.

Dr. Zweig was born in Moscow and received in his BS degree from the University of Michigan. He joined the Caltech faculty after earning his PhD at the Institute in 1964, and became professor of theoretical physics in 1967. He joined the staff of the Los Alamos National Laboratory in 1983 and continues with Caltech as a visiting associate.

Dr. Zweig independently conceived the idea of quarks—a concept that has proved to be of immense importance in modern theories of particles. The theory was simultaneously arrived at by Nobel Laureate Murray Gell-Mann, the Robert Andrews Millikan Professor of Theoretical Physics at Caltech.

Dr. Zweig holds a MacArthur Prize Fellowship, awarded in 1981, and has twice been an Alfred P. Sloan Foundation Fellow—in physics and in neurobiology.

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## Young Investigator Awards

from page 1

fishes, and he is currently searching for evidence of the mineral in other migratory animals and investigating the process by which it is biologically synthesized. Dr. Kirschvink, a resident of Pasadena, received his BS from Caltech in 1975 and his PhD from Princeton in 1979 and returned to Caltech as a member of the faculty in 1981.

Dr. McKeown is working with particle accelerators at Caltech's Kellogg Radiation Laboratory and at Los Alamos Meson Physics Facility in New Mexico to study the properties and constituents of the atomic nucleus. His experiments at Caltech are directed at finding the quark, a fractionally charged particle believed to be the fundamental building block of matter. At Los Alamos, he is studying the characteristics of the weak interaction, which is responsible for radioactivity, and neutrinos, enigmatic particles that may or may not possess a large percentage of the mass needed to ultimately halt the expansion of the universe. Dr. McKeown came to Caltech in 1980, after earning his PhD in 1979 from Princeton. He lives in Altadena.

Dr. Morari has invented sophisticated new techniques for the design and automatic control of chemical processes. His work has produced a computer program for the design of energy management equip-

ment systems, which has been adopted by several companies. A 1974 graduate of the Swiss Federal Institute of Technology, he received his PhD from the University of Minnesota in 1977, and joined the Caltech faculty in 1983. He is a resident of Pasadena.

Dr. Preskill is developing cosmological models that explore the relationship between the structure of matter as it exists today and its configuration 10 to 20 billion years ago in the initial billionths of the first second (nanoseconds) of the birth of the cosmos. His work in this area also focuses on grand unified theories, which seek to unify three of the four fundamental forces of nature into a single interaction existing at the first instant of the universe's origin. Dr. Preskill received his PhD in 1980 from Harvard and joined the Caltech faculty in 1983. He is resident of Pasadena.

Dr. Prince has developed a gamma ray imaging telescope with the capability to produce photographic representations of the exotic and often violent cosmic processes associated with gamma ray radiation. This instrumentation is expected to relay significant new information about such phenomena as the synthesis of heavy elements inside supernovae, neutron stars, and activity at the center of the Milky Way galaxy, where matter and antimatter in the form of electrons and positrons are colliding and annihilating each

other. Dr. Prince, a resident of Pasadena, earned his PhD in 1978 from the University of Chicago, and came to Caltech as a research fellow in 1979.

Dr. Rutledge is conducting research to develop integrated circuit technology for use in detecting and scanning phenomena characterized by millimeter-wavelength radiation rather than visible light. His work is aimed at developing imaging antennas capable of producing holographic pictures of the internal dynamics of plasma, a superheated, ionized state of matter associated with thermonuclear fusion. This research is also expected to have a wide range of applications in astronomy, communications, and radar. Dr. Rutledge joined the Caltech faculty in 1980, the year he received his PhD from the University of California at Berkeley. He lives in Pasadena.

Dr. Stephanopoulos is working to design and optimize biological processes for the production of novel specialty products by microorganisms and recombinant DNA engineering. His research aims at understanding the basic biological mechanisms by which these products are formed and using this knowledge in a variety of research and industrial applications. Dr. Stephanopoulos received his PhD from the University of Minnesota in 1978, and joined the Caltech faculty that same year. He is a resident of Pasadena.

## sports

## Alumnus Breaks World Record

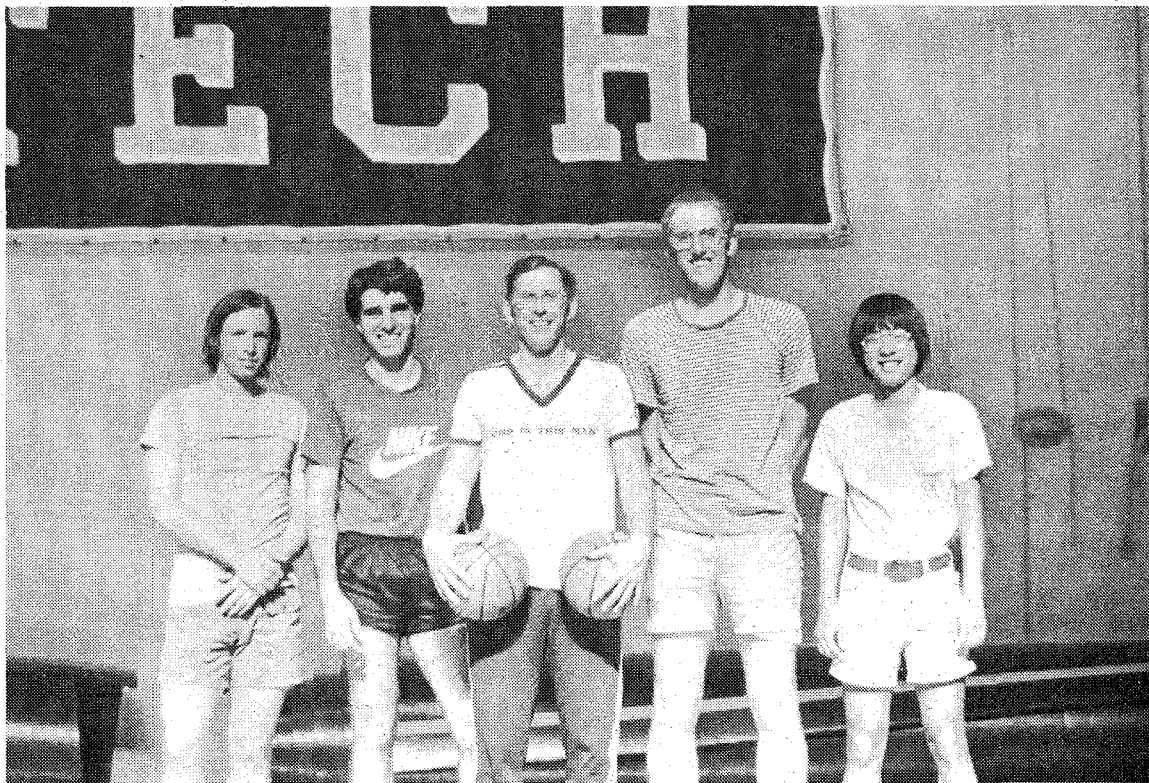
by Ath Man at Large

Fred Newman, a Caltech alumnus from 1960, broke the world record for most free throws made in ten minutes *three times* last weekend at Caltech's Scott Brown Gymnasium. Newman held the old record with 281 when he arrived, but that mark was in tatters by Saturday night.

On Friday night, in his first attempt, Newman made 286 shots to break the record. After a rest, he made 302 shots in his next try. Newman took another shot at raising the record on Saturday afternoon.

His first attempt fell short, although he did break the original record with 291. After a break and numerous attempts which were aborted due to bad shots, Newman really hit his stride. He made 94 of 96 shots during one stretch and finished with 314, another new record.

A key to Newman's success was the work of Chris Kyriakakis and Stewart Peebles, who fed the two balls in use back to Newman fast enough to enable him to take enough shots so that he could break the record by shooting as well as he did.



Fred Newman after breaking record.

## Waterpolo Team Prevail to End Season

by Skip's Roots

A long, long time ago in a galaxy far, far away... Polo Wars (Dah, dah, da da da dah, dah, da da da dah, dah, da da da dah).

On a hot, hazy day a small band of rebel waterpolo players gather to discuss strategy. Among them is Doc Skywalker, son of a FINA Cup master, and Princess Ute, the only surviving offspring of a great foreign ruler. By Doc's side are his frosh droids, C3Picarillo and Randy-D2. They and the others make up the remains of the upholders of the once dominating force in the Universe. The force of honor, justice, and love. The force of waterpolo.

But the Universe has fallen into the clutches of the Dark side, and its prominent leader, Darth Emery. (The black cape has been replaced by flowing white hair). He has been driving his army of secretaries for decades to build the ultimate weapon—a deathstar made of administrative paperwork. Its completion is imminent unless the rebels can somehow stop him.

Away at the far corner of the pool a faint figure appears to young Skywalker. "Do not be afraid. My name is Obi Wan Doddobi. I was a colleague of your father. he was a great man, your father. Strong in the Force. You can be strong in the Force also. It's in you. It only needs to be developed. Be calm, patient, and feel the Force. It controls inside water, raindrops, vectors, and death alley. But beware of the Dark side, for it can turn you as it did Darth."

In an instant the figure fades out, and two others appear in its place. From their stance and dress it is obvious that they compose an odd couple. "Hey baby, got some spare parts? I need a few to get my Millennium Capri running. Oh, by the way, I'm Harri Solo, and this is Reed. He's a Wookiee." After hearing about the rebels' plight, and fixing the Capri, Harri and Reed decide to join the rebels' cause.

The plan is to destroy the deathstar by burning it. The act would be disguised as a

waterpolo victory bonfire. To do this, the rebels would have to go up against yet another power in a lost corner of the Universe—Jabba the Oxy Coach. The battle would be fought in two phases. First at Jabba's palace, then he would be lured back to the rebels' home territory.

Once over at Oxy, Jabba quickly tricked the rebels into his monster pit, the so-called swimming pool. "Sonna FINA cuppa mastaa. Ha Ha Ha." His initial laughter was short-lived, however. Young Skywalker used his own magic to whip the Oxy creatures. He got help from the laser strikes of his co-rebels: Katie, 4 goals; Barbara, 3; Suzy, 3; the Princess, 2; and Lark, 1. Jabba's zoo got in only 4 hits.

So angry was Jabba that he followed the rebels back to their camp for a rematch. Again the Force was strong with Doc. But it stirred him in an uncomfortable way. "Darth is here. I can feel him. I must go." With Doc gone, the mission's success rested with Princess Ute. She displayed the Force in her by shooting 4 goals, while Lynn had 3, Suzy 2, Barbara 1, Lark 1, and Chris 1. Jabba could only get half that many blows against the rebels.

To get rid of Jabba once and for all, Skywalker had taken off to the Liquor Barn for a keg. Under the false image of a softball game, the rebels got Jabba and his characters very drunk. When they asked for their way back to Oxy, they were steered to the Kellogg Radiation Lab, where they were quickly made into bacon for Servomation. Now all that remained was Darth and the deathstar.

The rebels mounted their attack that evening at 11:11:11. In the Millennium Capri were Harri, Ute, and Reed, along with broken crates and gasoline with which to start the fire. Doc was already at the bonfire site, alone, battling it out with Darth.

"You are strong in the Force, young Skywalker. But you have been misled by Obi Wan Doddobi. Join with me on the Dark side, and together



Moles and Lloydies jump for the ball in Interhouse Football

we will rule the Universe."

"Never! I know there is good in you, Darth. You can join us on the good side—the side of waterpolo. You are but a pawn for the Lord of Evil, Murph. Come join us, and shed that weight of hair on your head. Feel young again."

In that instant, fire broke out between them. Doc staggered out to see the rebels celebrating the destruction of the deathstar. He also caught sight of Darth escaping from the blaze in his Toyota. It is unclear whether Darth will ever return again, and if he does, on which side of the Force.

Note: The women's waterpolo season ended this past weekend with an overall record of 7-6. We would like to thank Clint Dodd, Dave Watkins, the men's waterpolo team, and Warren Emery for making this the best season ever.

## Cricketers Take Revenge

A sweet revenge was claimed by Caltech last Sunday as the Caltech cricketers beat rivals PCC by 12 runs.

Electing to bat on a slow but springy wicket, Caltech got off to their most solid start to date. Openers Brian (12) and Ramesh (12) played comfortably against the medium pace attack, pushing twos and ones and running well. Next man Ramu (13) also benefitted from this patient approach, and raised the score to a highly commendable 55-4 off 21 overs.

## Interhouse Football In Full Swing

by Ath Man at Large

As Interhouse Football entered its second week, Lloyd emerged as a surprise contender for the championship with victories over Blacker and Fleming. Lloyd dominated the Moles, winning easily 24-13. Their victory over Fleming was a comedy of errors. Lloyd scored on a blocked punt and a tipped pass, and Fleming fumbled away the ball with under two minutes to go. Lloyd took the gift and drove for the winning score. Ed Casey's passes to Brett Bush were also key to the Lloyd victory.

Lloyd's streak came to a cropper against Ruddock, however. Lloyd entered the fourth quarter trailing 12-0.

They scored three times to lead 18-12 with less than a minute to go, but the Rudds came back to win, 19-18.

Fleming won its other three games of the week, defeating Ricketts 38-0 (the final points coming on a pass from Stewart Peebles to Fleming's all-around athlete, Linda Liu), and Blacker, 25-18, as Stefan Feurebendt caught three touchdown passes from Ed Zanelli. The Flems, like Ruddock, received a victory when Dabney forfeited.

Blacker had an off-and-on week, losing to Fleming and Lloyd, but defeating Ruddock 33-6 and Ricketts 51-0. Page did not play all week, although they won one game when Ricketts forfeited.

main danger, in fact, came from the PCC openers who put on 18 runs before the No. 1 succumbed to a fine reflex catch by Brian at first slip.

The pace of Rakesh then capitalized on this breakthrough, and was supported marvelously by the sustained accuracy of Ram (7-2-20-3), Zeta (4-4-1-8-3), and Nadeem (3-2-5-1).

The fielding side had taken full control, and did not let victory out of its sight.



## John Altoon Featured at Baxter

by Jane Crawshaw

The exhibition currently appearing at Baxter Art Gallery (until August 15th) is an amazingly concise yet comprehensive documentation of John Altoon's development as an artist.

It is generally agreed that his evolution as a painter can be split into three distinguishable phases. Although the emphasis in the show leans heavily toward Altoon's later period (either due to design by organizer Jay Belloli, Baxter Art Gallery Director, or due to lack of accessibility of later pieces), we are fortunate enough to have on display works representing all three phases.

One does not need to know the background details of Altoon's development as an artist and his unique brand of Abstract Expressionism to relate, in some fashion or another, to the sheer energy, emotion, sensuality and humor in his work.

Abstract Expressionism is a very personal mode of artistic self-expression. Altoon portrays himself very vividly in a variety of moods. In "Untitled, No. 26, Sunset Series," we can detect the more sombre emotion of angst present in the darker, more drab, coloration contrasting delightfully with the more positive, exuberant yellow, pink and violet.

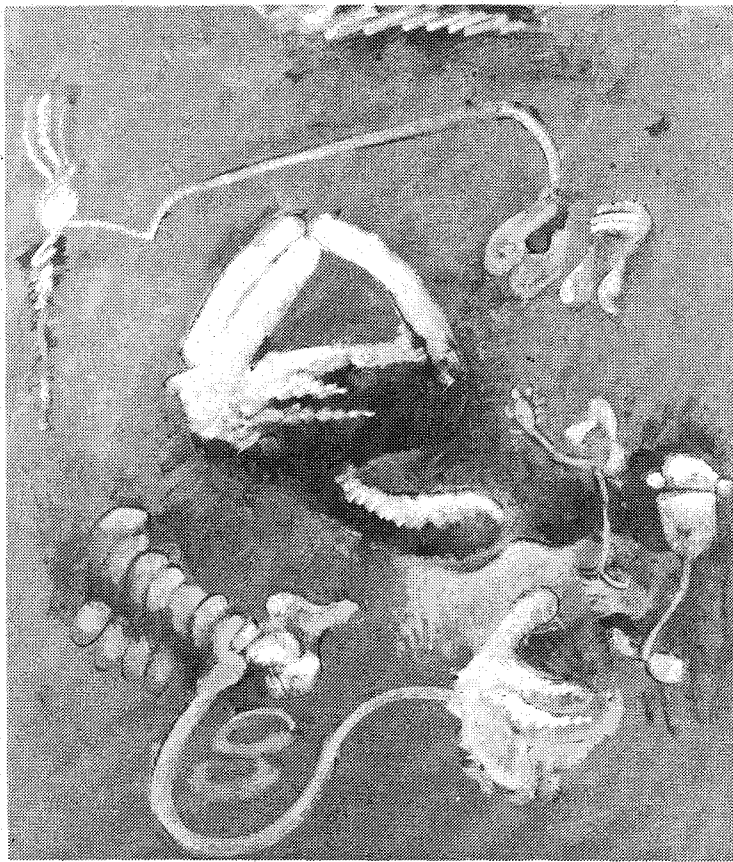
Altoon's intense *joie de vivre* and humor assert themselves very brazenly in a mixture of ways. As we have seen already, he can portray positive emotions superbly by

his use of color. He can also reveal them to us by the seemingly careless handling of his brushes and his uneven application of paint onto the canvas, as seen by the random drops of paint on some of the works. In several paintings (Nos. 1 and 5) bold slashes of color demonstrate his openness and the eager immediacy (a feeling of transient inspiration) which he has to capture before it dissipates.

His humor and sensuality is depicted very clearly in his normal(?) obsession with fleshy

pink and brown forms resembling parts of the human anatomy, especially those of the male and female genitalia. Look at any of the paintings in the show, and this is very evident.

These are the main points of interest which struck me when I went to see the exhibition. But, whether you become a firm devotee of John Altoon or an enraged disparager of his art, you will not be able to leave the gallery without having exercised some intellect and sensibility.



## The Inside World

**Blacker:** What do you get when you take a bunch of Moles and throw 'em together with a bunch of professorials and feed them? Ass-tea. Because what do you get every single day of your life? Ass-tea, that's what! Now, it's just not the same. (Note: those of you who have no idea in Heck of what I'm doing (and there are a lot of you I might have had a better chance had I not been [edited] one week in semi-recent memory.)

In any attaché, what do you get when you taste wine and fondue? And what do you get when you put all the tables in the courtyard, feed giblets to white mice without even knowing exactly what giblets are, and then do it again? And what do you get when you take "h," an "f," a "r," "b," "p," and add an "l," and a "t" with a "f" and an "h?" (Hint: change one of the letters and you get something else.)

**Dabney:** No entry.

**Fleming:** As the year draws to a close and the boys are all snaking, men have continued to be socially active. Last weekend was the Magic Mountain trip, Wednesday was Indiana Jones' premiere, and this weekend is the Beach Party.

In addition, the house of men clinched the Interhouse trophy with a victory over Blacker in football. Animal meal TBA, keep your eyes open for flying mashed potatoes. Members Only.  
No lesbians factorial.

—Al Fansome

**Lloyd:** The results of the Roommate Game is clear: John's earlobes are the best part of him.

Don't forget ice-skating Friday night with Blacker and maybe Indiana Jones after that.

—Rod

**Page:** And so it was...

The Penthouse was invaded by a preposterous number of people sporting plaids, polka dots, and pinstripes last Saturday night. Some folks almost drowned in the Daiquiris, but they were promptly saved by the ONE lifeguard attending. Unfortunately, we could not save the ½keg from all of the voracious appetites. Roberto played quite a selection of tunes. P cubed was (almost) perfect except for the ever haunting RATIO. (CSULB is my type of place, where the women outnumber the men) Thank you RUDDOCK. You helped make our party a success.

KELROF lost to the unstoppable Frosh who accumulated over 200 miles. They are already talking about next year. Congratulations to everyone who participated.

Yes, the UCLA Mardi Gras did happen. Yes, there were oodles of wonderful Co-eds. Yes, I had fun (take notes, Junior G-Man). For those of you who missed it... well, there is always next year.

Rogue is slowly penetrating our ranks. Some of have already fallen to this incurable disease. For you hardcore addicts see the movie: Indiana Jones and the Dungeons of Doom.

**Word of the Week:** CALLIPYGIAN

**Quote of the Week:** "We live moments, no days." So get out and enjoy those moments (the camping trip this weekend is a good opportunity to do so!). Only two more weeks.

—G-Man at Large

**Ricketts:** "Never more" quoth the Kelrofers as they staggered, limped, and hobbled back. Congratulations to the 9 Scurves (and Yvette too!) who survived this year's running. End of the term issues such as Rotation and RA's were handled at last night's house meeting. Meanwhile, the end of the term approaches rapidly with a 3-day weekend for now as a reprieve before finals. Don't forget the barbeque tomorrow, let's hear it for food for the masses. For those awaiting the souvenirs of Ditch Day, Rolf's may not be back but Keith has some fine wedding pictures for those who want to recall the blessed event. Pardon me, gotta run...

—Bob

**Ruddock:** Well, the big event this weekend is of course the Tanning Invitational on Monday out at the Chester. There will be competition in such events as Underwater Bicycle Racing, Least Untanned Area, and the Wanda Snoid Whitefish Competition. We'll have free food and beer, and I'll be tending bar, so come out and see your new controller in action.

And believe it or not, that's not even "the social event" this weekend. On Friday night (or Saturday night—I'm not sure which. Ask your local Social Team person), Buddock house goes out to see Utah Jones and the Temple of Doom (Jorgasm). The movie is rumored to have no plot whatsoever, so it should be a pretty good flick.

Storm is threatening  
My very life today  
If I don't get some shelter,  
Oh yeah I'm gonna fade away.

—Hos

## Brock and Murray Receive Math Awards

Several Caltech undergraduates were honored last night at a Mathematics Awards Banquet.

Bradley Brock and Alan Murray each received the E.T. Bell Undergraduate Mathematics Research Prize for outstanding original research in Mathematics.

Bradley Brock, a senior majoring in Physics and Applied Mathematics wrote a paper on

the non-existence of certain generalized Hadamard matrices.

Alan Murray, also a senior majoring in Physics and Applied Mathematics, submitted a paper giving a graph-theoretic approach to integrated circuit layout compaction.

The dinner also honored the recipients of the 1984 Summer Fellowships in Mathematics, Everett Howe, Jung Im, Kaveh Telegani, and Julian West.

## Bonpane

from page 1

number of trips to the country and has met many of its political figures, including Eden Pastora, the so-called Commander Zero, who leads a conter-revolutionary, anti-Sandinista guerilla force out of Costa Rica.

Furthermore, he has spent much time in the local villages and smaller towns of the country among the people. In particular, he has first hand obser-

vations from the effects of the CIA-sponsored, conter-revolutionary war of Contras operating from Honduras on the Northern villages of the country.

Tuesday's program will feature a presentation by Bonpane and an extended question and answer period. The talk is entitled "Nicaragua: The Crisis in Central America." According to the organizers, the talk is free and open to the public, and refreshments and hors d'oeuvres will be served.

Blase Bonpane's visit to Caltech is arranged by the Caltech Y. The program will be funded by the Distinguished Speakers' Fund, which is administered by the Caltech Y and the World Affairs Forum. Bonpane will speak as part of the Distinguished Speakers Series at Caltech.

## ON THE RECORD

by Chris Meisl

If you don't have the skill, at least entertain. That was exactly the excuse offered for last week's "Annual Home Concert" of the Caltech Glee Clubs.

The first half of the program demonstrated precisely how much skill the Glee Clubs lack, or perhaps how poorly they were trained. Fortunately the women started off, giving a pretty rendition of four spring songs, with Tad White's truly excellent accompaniment. Unfortunately, the final song required a solo, which the chorus apparently does not have. The result...well, a whisper does not project in Beckman.

After an incongruent, albeit good, performance of Dvorák's Slavonic Dances by Tad White and Wendy Caldwell (the conductor's wife) the men came on stage with a death blow to French and German songs. If you cannot pronounce it, please just hum!

Thankfully, intermission followed, after which the entertainment began. *Trial by Jury* was played with the charm and humor only enthusiasm can inspire, especially Jon Flower's Judge and Jung Im's Edwin. It saved the evening.



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## TANNING INVITATIONAL

The Caltech Tanning Club, the Master's Office, Page House, ASCIT and the Dean's Office bring you the annual tanning party/competition. Margaritaville Bar, beer, food and the sun will all be there. So everybody come on out!

Monday May 28 at 11:00 AM  
At the 150 S. Chester apartment's pool.

The Body Shop

# Be Careful When Exercising

In this high-tempo, exercise-crazy, aerobic, jogging, active wild world, recreational safety is becoming more important in helping us to enjoy and get the most out of our enthusiastic efforts.

The sad truth is that every year over 20 million Americans are injured in recreational activities. Physical injury can cause acute or chronic pain and in some cases long term disability. Other consequences can result in various financial problems due to increasing medical costs and extended leave from work.

Fortunately, most recreational activities can be avoided with common sense and some

considerations: know your limits before you start, understand the hazards, and preparing beforehand.

Pushing your body beyond its capacity is an invitation to injury. Choose exercises that are appropriate for your age and physical condition. People over 30 are recommended to have a complete physical exam before starting rigorous exercise. Those with other special problems, high blood pressure, diabetes, old injuries, should also have their physician's approval for physical exercise.

Plan to start out slowly, increasing exercise periods gradually. Pace yourself—don't go "all out" in the first few

minutes. Fatigue will make you more prone to injuries, many of which are easily obtained by poor technique due to overexhaustion.

Common hazards are caused by trying too much too soon—especially after long periods of inactivity when your body is not ready for strenuous activity. Weekend workouts are worthless! Physical activity once a week does not get you in shape. In fact—a one day exertion without proper conditioning can put you out for the entire week, or longer.

Overdoing it by long stretches of exertion without enough breaks tends to cause muscle soreness, aches and

blisters. Be aware that competitive team sports can be hazardous as physical contact increases chances of blows, trips and collisions. Appropriate dress and physical conditioning can lessen your team's chances of injuries.

Running on hard surfaces can cause shin muscles to become inflamed, making even walking very painful and may take weeks or months to improve.

Also, stiff, weak, unused muscles are more likely to be strained or pulled. Ankles and wrists are especially vulnerable.

Dress right, choose proper footwear and know any appropriate safety rules. Avoid exercise for at least one hour after eating, two hours after a heavy meal. Wait one hour per drink after drinking alcohol.

Warm up slowly every time before you exercise and take precautions while you play, be-

ing alert for danger signals.

Never ignore pain, numbness or other physical signs. They are warnings that your body is reaching its limits. Slow down, rest or stop if signs occur repeatedly. Pay attention to feelings of fatigue and allow your body time to recover. Rule of thumb: alternate 15-30 minutes of exertion with 5-10 minute rest periods.

Drink whenever you feel thirsty. Thirst is a sign that your juices need to be replaced and cool water or juice should be drunk before, during and after exercise as required.

By practicing daily good health habits and adhering to simple safety measures you will enjoy the benefits of recreational activity. Besides being fun, it's healthy gaining better cardiopulmonary health, improved fitness and weight control, and a more positive attitude and outlook.

**BLOOM COUNTY**

by Berke Breathed



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Well if you did and haven't gotten it yet come and claim yours from Karla Peterson (208 Ruddock) this week. They cost \$6.50 each and there are over 40 shirts of different sizes and colors. Claim them now because we will be selling the left overs next week.



## announcements

### Attn: Graduates

Graduating students: please remember to turn in your Career Development/Alumni Association questionnaire to the Career Development Center, Mail Code 8-31, x6361, before you leave campus.

### Frosh Camp '84

There will be a meeting for students interested in next September's Frosh Camp in Winnett Center next Tuesday, May 29th, at 4:00 pm.

### CLASSIFIED

#### FOR SALE—

**1977 CHEVY/LUV/TRUCK:** One owner, excellent condition, many extras, \$2300. Call Sheri at x6393 or 359-9486.

#### GENERAL—

**SWIMMING LESSONS** Stroke improvement. Individual/Pairs. Ages 3 yrs. to 90+. Your own pool. Margaret at 449-8634.

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#### HELP WANTED—

**HELP WANTED.** Test question writers. \$5-\$20 per question. Mechanical comprehension, data interpretation, and general science. Call Psychometrics at (213)829-0248. Ask for David or Pat.

#### HOUSING—

**HOUSING WANTED:** Room or apartment wanted for summer 1984. Call Mark at (301)366-3559 evenings, (301)338-8375 days, or (814)536-5882. I am a summer engineering student.

**APARTMENT FOR RENT:** Unfurnished 2 bedroom upstairs apartment (no pets) at 600 S. Mentor. \$550/month. Call 796-4160.

**ROOMATE WANTED:** Female Non-smoker wanted to share cute 2-bedroom apt. \$212.50/mo. plus util. You would need your own bedroom furnishings. Available June 15. Call Sue: x4538 or 798-7309 eves.

**APARTMENT FOR RENT:** Unfurnished studio apartment in small complex. Near Caltech, \$315 per month. Call Mary at 289-4088.

#### TYPING—

**TYPING AND WORDPROCESSING:** Reports, Term Papers, Letters, Resumes. Low rates and prompt, neat service. Call 795-8467.

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### Dinner Winner 5

This was the last week of the *little t's* restaurant review contest. If you are still interested in submitting a review for the restaurant guide just send it to: *little t*, 107-51. This week's winner was Diana Foss.

### Staff Honors

Eighty-five staff employees of Caltech were honored for their years of service on campus at the Institute's 29th Annual Service Award Ceremony on Wednesday. Employees with records of 10, 15, 20, 25, 30, 35, 40, and 45 years were acknowledged in the program in Dabney Lounge.

Caltech President Marvin L. Goldberger presented a certificate to each of the awardees, and Dr. Edward C. Stone, professor of physics and chairman of the Division of Physics, Mathematics and Astronomy, delivered a brief tribute to the employees.

### Dragon's Tale

*The Dragon's Tale*, a comedy Arthurian style legend written by Mike Pettersen, will be presented in Braun Court (between Church and Noyes) on June 2 at 2:30 and 5:00, and June 3 at 2:30. The tale involves the usual characters from Camelot, including Merlin and King Arthur, as well as a neophyte Knight and a Dragon named Noopers. But the puns and jokes fly faster than the swords in this story of medieval England. Admission is \$1.00 for Caltech students and \$3.00 for the general public. Tickets can be obtained through the Office of Public Events.

### Housing Office Jobs

The Housing Office will be offering part-time Summer jobs, that can be worked around most schedules. Stop by the Housing Office to see about earning some extra money this summer.

### Pizza with IBM

Dr. Alan Fowler will discuss opportunities with the IBM Fellows program and his own experiences with it in the field of semiconductor device research. Dr. Fowler is himself an IBM fellow at the Yorktown Heights Research facility. The presentation will be at 7:30 p.m. on Tuesday, May 29 in Winnett Lounge. Free pizza and drinks will be provided by Tau Beta Pi.

### Clubs/Activities

If your club or activity was not listed in last year's *little t*, please send a short description of what your group does, along with the name, mail code & phone number of a contact person for next fall, to: *little t*, 107-51.

### Grad Jobs

If you have not yet decided on a permanent position, be sure to check the "New Grad" job folder in the Career Development Center. Companies who were unable to recruit on campus have sent us job descriptions hoping to attract one of you. There are some attractive openings available.

### Pop Evening

The Pasadena Community Orchestra presents "An Evening of Pops," directed by Wayne Reinecke, Friday night, June 1, 1984 at 8:15 pm. The program will be presented at the First United Methodist Church, 500 E. Colorado Blvd. in Pasadena. Music by Offenbach, Kodaly, Gershwin, Reznicek and Handel. Admission is free.

### Advocate Health

Applications for the 1984-85 Health Advocate program are now being accepted. If you would like to become a paraprofessional member of the Health Center trained in health education, common student health concerns, standard first aid and CPR, applications are now available at the Health Center. Any student from any major may apply who is interested in helping other students with medical self help, health information, informal counseling, first aid and referrals. No experience is necessary. The course is a three term commitment, September 27 through May 23, and offers three units of credit (P/F) each term. One hour per week is spent in lecture/discussion, and one hour internship at the Health Center. Return applications by June 7 to Health Center, 1-8.

Four students successfully completed the course this past year and are presently providing peer health services on campus: Stephen Brown—Ricketts Hideki Garren—1116 Lura Scott Lewicki—Page Marc Turner—Blacker

### Cycling Club Keys

The Caltech Cycling Club will be issuing keys to its repair shop for the summer. If you are interested in using the shop this summer or you would like more information about the club, contact Irene Replogle, mail code 1-54 and phone number 578-9918, or write to the Caltech Cycling Club, mail code 218-51.

### Undergrad Women

The Undergraduate Women's Group, a support group for female undergraduates of all houses, will be having a VERY IMPORTANT meeting on Saturday at 3:00 pm in the Y Lounge. If you are at all interested, PLEASE PLEASE attend! We have much to talk about, including bigger and better plans for next year, an end of school rampage, and choosing officials to actually get things done. Questions: call Felice at x6171, but it would be MUCH better to show up to the meeting so we can all talk at once.

### Master's Grad Party

REMEMBER! All graduating seniors are invited to the senior party at the Master's house (355 S. Holliston Ave.) this afternoon, 4:30 pm. Food, drink, music, old friends.

### Montreal Olympics

*Montreal Olympics 1976*, a film, will be shown at Baxter Lecture Hall this Sunday at 6:30 p.m. Admission is 50 cents. Co-sponsored by OASIS and GSC.

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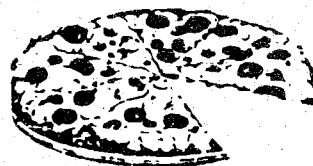
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