The prefrosh are coming! The prefrosh are coming!

by Erik Streed

Prefrosh weekend starts next Thursday, April 17th when a freshman committee of the Class of 2001 from around the country, at least 15s tender young high school seniors will be testing the institutional waters of Caltech.

On Sunday, these prefrosh will return from whence they came, many returning again in September as fully fledged frosh.

The Admissions Office has a host of official activities planned to introduce the refresh to life at Caltech. Unlike last year, the Noble Laureate dog and pony show will not return and more traditional will dominate the weekend. Lab tours, informational sessions, and a few fresh classes will fill the day on Friday. ASCIT has a party planned for 10:00 p.m. Saturday in Dabney Hall. Most houses have social events planned for the weekend in addition to the usual flocking and other random happenings which occur.

During their visit, each prefrosh will stay with an undergraduate host. More than just occupants of 12 sq. ft of floor space, prefrosh need their hosts to answer basic questions about Caltech and find representatives for more detailed questions. Hosts are also expected to show their prefrosh the campus and in general make sure their stay is pleasant. This is especially important in the South Houses, whose architecture is confused at best.

Requests can range from locating a nearby Tech editor for a prefrosh interested in journalism or finding a friendly, flashlight bearing, Tech editor for a prefrosh interested in getting subterranean. Write for the Tech, prefrosh. Write for the Tech.

For most frosh this event marks the beginning of the end to their froshliness. Prefrosh weekend is the first event where most frosh got a first taste of things to come. Now the Class of 2000 stands on the other side of the looking glass for the first time.

The Tech would like to remind the undergraduates that Rotation Rules are in effect. Don't unfairly bias the prefrosh. Basically, don't rip on other houses or talk about upcoming social events. However, previous social events are fair game.

Jim Pierce leading his flock of prospective students

The schedule of the Conference is as follows:

9:00-9:30: Continental Breakfast
9:30-9:45: Opening Remarks
9:45-12:00: Undergraduate Purpose Committee
12:00-1:00: Lunch, everyone's on their own
1:00-3:15: Student Life Committee
3:15-3:45: Snack
3:30-5:45: Honor System Committee
5:45-6:00: Closing Remarks
6:00: Dinner on the Olive Walk

The aim of this conference is to give the students a forum to express their ideas about aspects of life at Caltech, and how they can be improved. Audience participation is necessary for the conference to fully benefit the Caltech community. Students and faculty are definitely encouraged to voice their concerns and well thought out opinions. All of these committees have met to formulate ideas about specific issues, but the main focus of the conference is to be a vehicle for the expression of student and faculty views about the quality of life, learning, and living here at Caltech. Express your views now, because it will be another three years before the next forum of this kind!

Devi Thota, ARC Secretary

Student/Faculty conference to occur on Tuesday

The California Tech

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Pasadena, California
Friday, April 11, 1997
Research Strategy: Teach

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Roald Hoffmann’s essay "Research Strategy: Teach" (see accompanying article) contains very bad advice for assistant professors at research universities. It is not a "damaging misconception...that research dominates and teaching..." This is the damaging reality. University research faculty who are excellent teachers but unproductive researchers rarely get tenure, but productive teachers who are poor researchers almost always get tenure.

The overemphasis on research has cost the U.S. education system dearly in many ways. Not only are researchers rarely granted tenure, but productive research…

Research universities spend huge amounts on an ever-growing host of obscure, often exorbitantly expensive, for-profit research journals. Such journals often serve as a dumping ground for redundant, flawed, or trivial research articles. Even a part of the nation’s science illiteracy is due to research-university faculty who take little interest in precollege science teaching.

The overemphasis on research has a chilling effect on scholarly publications in the science teaching. While there are many thousands of science research journals, the number of science teaching journals is only a few dozen. Many university libraries, publishing articles in science teaching journals generally is of little or no benefit in tenure and promotion and may even count against you.

Hoffmann’s definition of teaching is so broad that he even includes casual conversations with graduate students and postdocs. University teaching and research are entirely distinguishable by different standards, so it is usually easy to differentiate them. Teachers are judged prima rily by subjective student evaluations. This effectiveness rules out graduate student and postdoc supervision from the teaching category because graduate students and postdocs do not formally evaluate their major professor.

Researchers are judged more objectively, usually by simply counting the number of grant dollars obtained and research articles published. Such counts are up to 10 times more important in the number of courses they can teach. However, researchers who are good fundraisers can get credit for the research produced by many graduate research assistants and postdocs as they can afford to hire them. What a tremendous advantage to the re-
ASTOUNDING ADVENTURES featuring

ADAM VILLANI:

MEDIA GUY

by Adam Villani

The Saint

This spy adventure movie rises above the crowd of action movies not due to anything particularly inventive in the script or exceptional directional flair, but from the sheer fun of seeing Val Kilmer as a master of disguise wielding a vast array of fake accents and personalities. That’s not to say it’s bad in other respects; the recent film The Saint compares best to last Summer’s Mission: Impossible, with a more straightforward plot and without the annoying source-material-defying betrayals, but also not quite reaching the same exciting heights of the earlier film’s elaborate set-pieces. From a thematic viewpoint, The Saint is more likeable, with its title character a thief who reconsiders his mercenary ways when hired to steal a cold fusion formula (!) for some Russian meemies from a woman he falls in love with (Elizabeth Shue). As the scientist, Shue isn’t particularly convincing, and as the love interest, she doesn’t generate much heat. The problem is that she tries to be down-to-earth, while Kilmer wisely approaches his role with over-the-top glee. As a bonus, Orbital’s new version of the theme song is pretty keen.

Crash

Many of you will hate this movie. I liked it a lot. James Spader (White Castle, sex, lies, and videotape) and Holly Hunter (The Piano, Raising Arizona) play car crash victims who get involved in a scary underground group led by a mysterious character played by Elias Koteas (Exotica, Teenage Mutant Ninja Turtles) that finds sexual pleasure in auto accidents. Our protagonists, as it were, react to the cold, unforgiving world they live in by embarking on an ever-intensifying path of single-minded self-destruction, making literal the ever-implicit link between sex, cars, and death. Indeed, while not “hardcore” from beginning to end, there’s more sex in this NC-17 film than any theatrical release in recent memory. Be warned that, like much of Lost Highway, the film moves quite slowly, and that the characters are not supposed to be realistic—they’re surrealistic, living on the fringes of a hyper-modern world. Director David Cronenberg’s (The Fly, Naked Lunch) adaptation of J.G. Ballard’s novel is daring, shocking, and mesmerizing.

A Single Girl

(La Fille Seule)

This tantalizing French film has just been released in Southern California, and is the best movie about realistic people to make it out here from France in quite some time (The City of Lost Children was a fantasy and Microcosmos didn’t have any humans). The film takes place nearly in real time, following the first day of work at a fancy hotel of a young woman (Virginie Ledoyen, the daughter in La Ceremonie) who has just discovered she is pregnant. The magic of this film and the beautiful Ledoyen’s performance is that, since it transpires in real time, a lot of time is spent walking down halls or waiting for elevators, and yet that time is not wasted. Instead, Ledoyen’s body and facial expressions become windows to the inner struggle over her feelings for her boyfriend, mother, co-workers, and the hotel guests. The editing and pacing of the script is tight, moving things along briskly even through the day’s monotonous work. This excellent picture is showing exclusively at Laemmle’s Music Hall theatre in Beverly Hills and Edwards Town Center in Costa Mesa.

The Outside World

by Myfanwy Callahan

ALGIERS, ALGERIA — Attackers from a militant Islamic faction killed about 90 people in less than two days last weekend near the capital of Algeria. Security forces have been fighting the militants since their insurgency five years ago.

HEIRON, WEST BANK — A street battle begun on Wednesday led to three killed and 100 wounded. This is the worst outbreak of violence since Israel began work on a Jewish neighborhood three weeks ago in Arab East Jerusalem.

KINSHASA, ZAIRE — President Mobutu Sese Seko declared a state of emergency banning political activity and removing the civilian Prime Minister from office. Meanwhile, rebels have won another major city in Zaire and are advancing on the capital.

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HOW ABOUT DINNER WITH THE MOSH?

Now is your time to come to dinner with other students, faculty and staff at Steele House.

If you would like to sign up please see Sue Chiarchiaro in the Residence Life office.
Inktomi is coming to Caltech!

WHO: Inktomi Corporation, one of the hottest new Internet technology firms in the Bay Area.

WHAT: Information Session

WHERE: The Student Activity Room 35

WHEN: April 15 from 4-6p.m.

*Food and drinks served. For questions and RSVP, call (510)883-7300.

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The California Tech

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Shaft

By Joe Carroll

Shaft is the quintessential "blaxploitation" movie from the 70's. Richard Roundtree stars as John Shaft, "the black private dick who's a sex machine to all the chicks." The suave Shaft is hired by black gang boss Bumpy Jonas (Moses Gunn) to find his kidnapped daughter Marcy (Sheri Bernard). Shaft spends his time kickin' ass and gettin' laid, and winds up tangled up with the Mafia.

The funky soundtrack, written by blues legend Isaac Hayes, is a major part of the entertainment. It went to number one on the charts in 1971 and won both a Grammy and an Oscar.

Shaft will be shown this Friday, April 11, in Baxter Lecture Hall. Showtimes are 7:30 and 10:00 p.m. Admission is $2.00 for ASCIT members and $2.50 for others. Come watch — if you can dig it.

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ASCIT Movies presents...

Shaft

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ASCIT ExComm Minute

April 7, 1997

Present: Jeanne Wilson (Chair), Brandon VundeBake, Joe Carroll, Myfanwy Callahan, Steve Van Hoose

Meeting starts, 8:14 p.m. Baldeep Sadhal named interim ASCIT Secretary; he performs duties but can't vote. Meeting ends, 8:15 p.m.

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ASCIT

Minutes

April 7, 1997

Meeting called to order 10:35 p.m.

BoD Members present: Adrienne Bourque, Maria Satterwhite, Lori Hsu, Kiran Shekar, Baldeep Sadhal, Kohl Gill, John Lin. Guests present: Gabriel Au, Keoni Pua'a, Melissa Saenz, Valerie Anderson, Rebecca Jones, Wesley Tanaka, Niniane Wang, Jon McDunn.

Keoni Pua'a and Gabriel Au present petition for ASCIT recognition of the Hawaii Club. Motion passed unanimously.

Mike Westover enters. Semana Latina requests $1000 from ASCIT. Melissa Saenz presents proposed budget. It is decided that the issue will be settled at the Third Term Budget Meeting on Saturday the 12th.

Devi Thota enters. The four little i editors (Valerie Anderson, Rebecca Jones, Wesley Tanaka and Niniane Wang) are currently scheduled to be paid $500 total for what they estimate was over 150 hours of work per editor. Last year's little i editors were paid $750 each. The four editors are requesting $500 each.

The ASCIT Movies Team is present to discuss the specifics of their movie calendar.

Baldeep Sadhal presents a petition for ASCIT Recognition for the Caltech Electric Vehicle Club. The motion is passed unanimously.

Kiran Shekar had a meeting with a bunch of people about the van. Rules need to be drafted regarding appropriate van usage and reasonable checkout procedures need to be established. The costs associated with operating the van also need to be determined.

John reports that there does exist a surplus of funds in the ASCIT coffers. Maria states that in her best judgement this money ought to be converted to crack cocaine and used to fill hot tubs for her personal pleasure.

Adrienne reports that the deposit has been placed on the room and the band for the ASCIT formal (May 23rd). The prefresh party will be April 19th at 10pm in Dabney Gardens.

Mike tells us that the Student Faculty conference is next Tuesday. Three committees will be presenting: Student Life, Honor System, and Purpose of Undergraduate Education. The format will be a sort of "talk show" format, with presentations and getting questions from the audience. A mass memo will be delivered to all with the schedule for that day. Professors have been asked to make accommodations for students attending the conference.

There will be an open ARC meeting on April 10th at 7:30 in the Sherman-Fairchild Library.

In the IHC meeting last Thursday, Judy Green was elected IHC Secretary. See the IHC minutes for the full details of the meeting.

John has prepared some materials for the budget meetings for better control of the flow of money to various salaries. John proposes that the signups for the various appointed offices stay up for an extra week so that more people may be given the opportunity to sign up. The general BoD consensus is that this should be done.

Maria reports nothing, because if she did she'd have to kill the BoD.

Kohl requests that we schedule a meeting time. Meetings will be held on Mondays at 10:30.

The Meeting becomes closed. The Meeting becomes open again and is adjourned at 12:05a.m.

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Features

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by Bradey Honsinger

The Caltech Y is both presenting and sponsoring a number of programs this term. If you'd like to help us, or if you have any ideas for programs you'd like to see on campus, show up at one of our meetings. The Y Exxon meets each Monday at noon in the Y Lounge.

We're putting on a Y Noon concert today; if you'd like to see the cool sounds of Caltech's own Jazz Combo, head for the Winnnet Quad at noon.

This Saturday, April 12, we'll be sending volunteers to the Adopt-A-Canyon trail main-tenance program. If you're interested in getting out and playing in the dirt for a few hours, stop by the Y today before 5:00 to sign up.

We're also helping to present International Day, which will occur next Friday, April 15th. If you've been before, you'll recall the great food and interesting displays; if you haven't, try it!

Finally, we're looking for volunteers for the annual Christmas in April event; volunteers will travel to low-income neighborhoods and help paint or repair the homes of the sick and elderly. This Christmas in April will be on Saturday, April 26 and Sunday, April 27.

Remember if you're a work-study student you can be paid for volunteering.

If you'd like more information on these or any other of our Y programs, stop by the Y, call x6163, or email Chris Sundberg at sundberge@starbase1.caltech.edu.

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...from the Committee on the Purpose of Undergraduate Education

BY SETH BLUMBERG AND ROBERT ROSSI

The "Purpose of Undergraduate Education" Committee is one of three making a presentation at the April 15 Student/Faculty Conference. Our goal is to investigate Caltech's undergraduate education system. Faculty, graduates, and undergraduates are all represented on our committee. In order to fairly gauge the range of opinions within the Caltech community, the committee has had discussions with a variety of faculty, administrators, and students. We have also looked at previous conference and committee reports, in an attempt to understand the evolution of policy in recent years and the challenges associated with the implementation of new ideas.

We hope to generate a thoughtful discussion concerning undergraduate education. At the conference, we plan to raise questions about undergraduate education at Caltech and suggest possible means for improvement. We hope to supplement the Student/Faculty Conference with a number of smaller discussions in the houses and the community.

Educational Philosophy

What is the purpose of undergraduate education?

Issue: In a broad sense, Caltech is a place for undergraduates to obtain a solid foundation in the basic sciences and to develop sharp analytical skills. However, students entertain a variety of different options once they graduate. Among these are research/academia, technical work in industry, and business development.

Pranks and many Caltech traditions are either extinct or on the endangered list.

Consortial: Some departments have no known ways of dealing with advisor/advisee conflicts and most students have no knowledge of how to change advisors if necessary. In particular, most undergraduates are unaware that they can change advisors at any time and as many times as they wish.

..from the Committee on Student Life

BY ELLIS MENG

Concerned about student life? Well then, be sure to show up for the Student Life Committee presentation for the Student/Faculty Conference on April 15th. We will mainly be addressing problems with the advising system and the decline of Tech traditions, however, your suggestions and concerns about anything having to do with student life are welcome. This conference is a great opportunity for you to voice your opinions and as Kohl said last week, the only way this conference can be successful is with your help. We are here to help you but we can't do anything about problems we don't know about so SPEAK UP! Below is a sample of the issues we have identified and will be discussing at the conference. Note that many of the concerns brought up four years ago at the last conference are still true even today. Should you have any questions, comments or additions, please e-mail Ellis Meng (chair) at fanchain@cco or Christy Edwards (secretary) at cmee@cco.

The advising system is one of the most valuable resources for both undergraduate and graduate students here. However, it does not live up to everyone's expectations as there are many flaws which need to be addressed.

...from the Committee on the Honor Code

BY GEOFF SMITH

The Honor System Committee was convened to discuss the current state of the Honor Code and suggest remedies for perceived imperfections. We decided quickly that Caltech seems to have a well-functioning Honor System. In appreciation of this, the committee has decided to offer refinements that we think will improve trust and communication within the existing system rather than trying to reinvent the wheel.

Much of our discussion time was spent trying to reduce the complaints that have arisen with respect to the honor code into a few easily manageable categories. The problems we spent the most time discussing fell into two major groups:

1. Education Issues

The members of the committee all agreed that there is not enough awareness among many members of the community about the Honor System and how it is enforced. This leads to reduced trust between different groups and feelings of powerlessness among members who don't know where to turn when they feel victimized. The undergraduate community, because of the much more structured nature of undergraduate life, is generally familiar with the Honor System and its enforcement apparatus. The committee was in agreement that more needed to be done to educate other groups in the community.

2. Procedural Issues

2a. Trust of Community

The current system of dealing with Honor System violations, although admirably set up to remove advantage while still protecting the offender to the greatest degree possible, doesn't address the problem of nullifying the lack of trust engendered by the very fact that a somebody accuses somebody else (justly or not) of an infraction in the first place.

2b. Consistency

One of the major fears produced by bodies of such considerable secrecy as the BoC and GRB is that they may produce inconsistent verdicts over time.

Of course, the committee also has a list of proposed solutions to these problems, but in order to emphasize the importance of the input of the community at large, it is not included in this article. Attend the Conference and take a hand in shaping them yourself.
EQUATION: Learning without thinking?

CONTINUED FROM PREVIOUS PAGE

Questions:
• What specific features of under­graduate education address the skills required for these positions?
• Should Caltech make an effort to prepare students for all the various career options, or should it focus on the needs of a specific group?
• What type of students should Caltech admit?
• What does Caltech gain from being a technical school?

Is there strong correlation between the goals of faculty, staff, and students concerning undergraduate education?

Issue: In order for education to be effective, a general consensus of educational objectives should be reached between students and faculty. Unfortunately, any precise list of goals is unlikely to meet with the approval of all, because normative opinions concerning education seem to vary widely, even within a given demographic group.

Questions:
• Should we develop a statement of purpose for undergraduate education at Caltech?
• How does the admissions office portray Caltech to prospective students? Does it provide an accurate depiction?
• Do the faculty and staff understand the challenges facing undergraduate students? How about the reverse? If not, what can be done to increase communication between students, faculty, and staff?

Educational Infrastructure

What are the effects of Caltech's research emphasis and outstanding reputation?

Issue: Professors receive greater professional encouragement to do research than they do to teach. Ideally, the incredible resources associated with Caltech's research program could be used to enhance the quality of undergraduate education at Caltech; does teaching suffer because of the lack of incentive?

Questions:
• Should a system be set up which provides greater encouragement for good teaching?
• Can the faculty's research interest be benevolently incorporated into teaching?

What are the benefits and problems associated with the high expectations Caltech has for its students?

Issue: Grades are used as an indicator for the level of understanding one achieves in a particular class. Ideally, they serve as a source of motivation for students to learn. However, in a competitive environment, this ideal purpose can be overshadowed by the effect grades appear to have on employment and graduate admissions. The latter concern can lead to unhealthy, unnecessary levels of stress and pressure.

Questions:
• Does the 4.0 grading system work? How well does a top grade correspond to a solid, intuitive understanding of the material?
• Does a good grade often require a lot of extraneous effort which is unrelated to furthering one's understanding?
• Do students understand the relative (or unimportance) of grades? Do they impose too much pressure on themselves for a good grade?
• Do students avoid certain classes because of the grades they fear they might get?

Can interaction among students, faculty and staff be improved in ways which benefit undergraduate education?

Issue: Since Caltech is small, the opportunity for undergraduates to interact with faculty, graduates, and staff is significant. However, just because the opportunity exists, there is no guarantee that such interaction will spontaneously occur. One hopes that current policies encourage mutually beneficial ties between students and faculty. However, no system is perfect, and it is likely that steps could be taken to improve communication and understanding between the various groups at Caltech.

Questions:
• Should there be more emphasis on small-group, "seminar-type" discussions with faculty members?
• How well does the advising system work? Do most students get more out of the relationship than a bunch of signatures?
• Is Caltech's administrative system effective in evaluating educational needs and leveraging support for appropriate programs and policies?

LIFE: The Student Life Committee has some questions for you

CONTINUED FROM PREVIOUS PAGE

They want.
• Certain departments are experiencing a shortage of faculty and thus advisors. The result is that many students have advisors from outside of their option.
• Many new advisors are unfamiliar with Caltech and are unable to offer advice on general requirements or deal with certain problems when they arise. As a result, many students rely on other students.
• In many cases, student-advisor relationships have degenerated into card signing.
• Beyond academics, there is little interaction between students and advisors even though the Deans Office is willing to provide financial support for social activities.

Issue: There is little interaction between faculty, undergraduates, and graduate students even though Caltech is such a small school.

Concepts:
• Undergraduates are predominantly bound to a single house or are alienated by the lack of house identity. Graduate students' social circles are far removed from the undergraduate community. Faculty-undergraduate relations have deteriorated to the point where there is negligible interaction at a social level and academic interaction, for most students, is limited to card-signing. There is no central place for interactions to take place (1991).
• Undergraduate activities center around the individual houses, and most faculty members, graduate students, and even undergraduates from other houses don't feel comfortable visiting houses without special circumstances.
• Most faculty and graduate student events occur in department meeting areas, which discourages members of other departments from feeling welcome, as well as undergraduates, who are often not well associated with any department.
• Avery House is meant to be a place where the entire Caltech community can come together and interact informally. However, little interaction exists between the various groups and many professors are unaware of the opportunity to dine there. Also, many undergraduates are unhappy with the disparity in the amount of attention from the administration that Avery receives as opposed to the Student Houses.

Issue: Many of the elements which make Caltech a unique experience are in jeopardy. Many of the freedom students in the past had to be innovative outside of satisfying academic requirements is gone. Pranks and many Caltech traditions are either extinct or on the endangered list. These are an integral part of what makes Caltech unique and should be preserved.

From the 1991 Student/Faculty Conference:
• Information transfer is poor. Few people know where to go to get information about events happening in a department which are organized independently of each other. Events are not advertised all in one place and some hardly advertised at all.
• There has been a gradual decrease in faculty participation in student affairs. Much of the traditional faculty involvement in students' interests has been taken on by administrative personnel. This has removed some of the important channels for student involvement with the faculty.
• There is no social or official route for an undergraduate to become involved in a research group.
• There is no social or official route for a graduate student or a faculty member to become involved with an undergraduate house, other than the few professors in the NRFA program (and the graduate students in the RA program).
Finding a path to the top of the mountain
Educational Science and Science Education

BY ROBERT ROSSI

1. Solving Ability

This aspect of ability generally gets more than its fair share of attention, being a typical test is all about. A given question, can you find the "correct" answer, in numerical or normative terms? This is the easiest aspect of ability to assess and quantify, and I'm sure that I will be given a question primarily as a context.

2. Understanding

Quite separate from the issue of "ability," however, one might ask whether they understand a concept. The ability to crank through a prescribed set of formulas, or regurgitate a given definition, is no indication of whether the grasp of an author does such an understanding guarantee that one will arrive at the "correct" answer. What gives a question its importance? It is possible to probe the depth of one's understanding through "new" questions, and those assaying essay-type inquiries, where an angle falls, or where a variable or descriptor must be carefully reinterpreted in order to extend a known concept. More at many schools, this ability is tested to some extent at Caltech, almost absolutely exclusively as a time-critical skill. Someday I'll summarize my career as a becoming teacher. Of course, then I will fulfill the crucial role of delivering the central yardstick by which grades are doled out at the college level.

3. Explanation

This aspect of ability is often called upon, but rarely quantified. Indeed, whatever one is being required to understand, students vary widely in their aptitude for explaining what they do understand and to others. Such an aptitude may have a slight impact on one's score in a tolerable time-critical "show your work" assignment. A good effort effect where a presentation or report is required. However, this aptitude is not revealed in one's efforts to interactively educate another, say in a tutoring or correspondence environment, and it is hardly ever assessed in this manner.

4. Extension

Although tied to understanding, I feel this is a separate issue. Some students will conceptually grasp material well, but fail to appreciate its applicability beyond the specific situations and problems presented to them as exercises. On the other hand, one rarely sees anyone failing to appreciate the overall significance of a concept. Frequently he or she will be told frequently that effect is to be ascended to and what it attains. But these are generally considered in the control of the student alone, and should ultimately be considered malleable.

1. Slope and Pace

One of the most important determinants of a student's ability to "slopes" their environment will have, and at "what pace" they will expect their studies to proceed. Slope maxims explanations, skip details, and often lose a substantial portion of the class-they are like a trail that skips the switchbacks and goes straight up the mountain. A rapid pace moves lots of students, flowing through topics at great speed, and not stopping to pick up stragglers. Slope and pace are related to each other, in that many combinations thereof can be used to attain the same change in elevation over a given fixed period of time; a shallow slope will require a breakneck pace to attain the same results as a steep slope taken at a slow pace; but a gradual ascent up a very steep slope should hardly be considered feasible; rather, it's more like a rock-climbing expedition. Some students are well-suited to rock-climbing; indeed, a few sicko even delights in it. Others, however, find a steep slope daunting at best, intractable at worst, and would prefer a shallower slope taken at a faster pace.

2. Path Quality

Whatever the slope and pace of a course, the path along which an instructor leads his or her students is a very difficult issue for the student to climb. Students of common understanding, they never want to climb like that. They are not by nature, their academic discipline, but rather the context and manner in which it is presented. I would argue that most of fundamentals of science is of great utility in day-to-day life, but where I've certainly taken science courses that led me to re-examine this belief.

4. Motivation

Students are people too, strangely enough, and they need to be motivated to do well. Sure, to a certain extent motivation derives from the promise of the fruits of academic success, or just plain interest in a subject, but lots of people who can motivate him at a mountain at Caltech do so only to find there they can't climb far faster than the scientists who first conquered any given mountain. Some would argue that they're not holding physical objects with no ability to make their hands, learned through undergraduate and graduate research, where the "instructor" becomes a "research advisor" and plays a very different role.

1. On the surface, Caltech's core doesn't look too unusual.

Why, then, do undergrads often describe their Caltech experience as "drinking from a firehose?" among many other methods.

3. Explanation

This aspect of ability is often called upon, but rarely quantified. Indeed, whatever one is being required to understand, students vary widely in their aptitude for explaining what they do understand and to others. Such an aptitude may have a slight impact on one's score in a tolerable time-critical "show your work" assignment. A good effort effect where a presentation or report is required. However, this aptitude is not revealed in one's efforts to interactively educate another, say in a tutoring or correspondence environment, and it is hardly ever assessed in this manner.

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One of the most important determinants of a student's ability to "slopes" their environment will have, and at "what pace" they will expect their studies to proceed. Slope maxims explanations, skip details, and often lose a substantial portion of the class-they are like a trail that skips the switchbacks and goes straight up the mountain. A rapid pace moves lots of students, flowing through topics at great speed, and not stopping to pick up stragglers. Slope and pace are related to each other, in that many combinations thereof can be used to attain the same change in elevation over a given fixed period of time; a shallow slope will require a breakneck pace to attain the same results as a steep slope taken at a slow pace; but a gradual ascent up a very steep slope should hardly be considered feasible; rather, it's more like a rock-climbing expedition. Some students are well-suited to rock-climbing; indeed, a few sicko even delights in it. Others, however, find a steep slope daunting at best, intractable at worst, and would prefer a shallower slope taken at a faster pace.

2. Path Quality

Whatever the slope and pace of a course, the path along which an instructor leads his or her students is a very difficult issue for the student to climb. Students of common understanding, they never want to climb like that. They are not by nature, their academic discipline, but rather the context and manner in which it is presented. I would argue that most of fundamentals of science is of great utility in day-to-day life, but where I've certainly taken science courses that led me to re-examine this belief.

4. Motivation

Students are people too, strangely enough, and they need to be motivated to do well. Sure, to a certain extent motivation derives from the promise of the fruits of academic success, or just plain interest in a subject, but lots of people who can motivate him at a mountain at Caltech do so only to find there they can't climb far faster than the scientists who first conquered any given mountain. Some would argue that they're not holding physical objects with no ability to make their hands, learned through undergraduate and graduate research, where the "instructor" becomes a "research advisor" and plays a very different role.
By Robert Ross, with suggestions from Aine Faistando and Will Royea

I sincerely hope that Caltech never develops either of the anti-utopian worlds presented in the following scenarios. Thankfully, that isn't likely. They are intended to provoke extremes in direction, and thus highlight some of the factors I think deserve consideration when planning the future. Caltech's educational paradigm is possibly and should be.

Scenario #1: The CTTidel

Excerpts from an interview with Drill Professor Stewart Corbin (USMC):

"These kids come in here thinking they know everything. First we have to break them, show them how stupid they really are. Then we can train to build them back up again. Learning is pain.

"The CTTidel is not for everyone. Some of the brightest, ablest students will find it too steep for some students, and/or the course of a term, and will feel paced with the discussion we are having. We wait until this happens, we help them understand, so that we do not lose or alienate them. This is so very important. We do not want anyone to feel left out of the special circle of understanding that we work to develop. We succeed only in so far as the entire community moves with joy toward enlightenment. We try to help everyone discover the adventure of discovery.

"The switch from scientific to non-scientific thinking could be beller for all involved to reconsider the focus of the CTTidel. They seem so unhappy, and so confused. Brother Stewart seems to have completely missed the point of Indiana Jones and the Last Crusade, and that of OPI."

"We want them to become one with the quantum mechanical reality of our transcendent existence."

"The CTTidel is not for everyone... We don't stop to pick up stragglers."

Conclusion

It seems that somewhere between these two extremes lies a reasonable balance—perhaps at many points in between. But clearly in a CTTidel recruits wouldn't appreciate a trip to Techcidental, and vice-versa. It seems Caltech is not so focused on once was, that there is now a wide range of both professorial and student opinions spanning the CTTidel to Techcidental spectrum. Is it a healthy development, or would it be better for all involved to regain the focus of the past?

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Should Caltech Have a policy of educational Darwinism?

CONTINUED FROM PREVIOUS PAGE

could give something to science and that it could give something back to me."

When that feeling takes root in anyone, however bright or capable, they will not strive for a future in a given science discipline.

Whatever the "quality of a course, it is possible for its objec-
tives to be stated, to lay out trails being blazed. Many students will not make it to the summit. Some, perhaps, will just give up, they won't be smart enough to begin. But every mortal has physical and mental limits beyond which they cannot climb. In the way, Caltech has forced me to accept that these limits do indeed vary from one individual to another, and from one time to the next. As such, it is possible for a slope to be too steep for some students, and/or a pace too rapid. In such situations an instructor is put in an extremely awkward situation: a steep slope at a slow pace will allow one group of students to succeed; a different group of students will benefit from a shallower slope taken at a more rapid pace. Approaching either extreme, and at all points in between, some subset of the students will not be able to keep up. Others will succeed regardless, but may resent hav-

ing to do "tedious" homework relating to things they already know. Indeed, these students could prob-
ably have climbed ever higher over the course of a term, and will feel "held back" by the "stupider" pace of presentation of new material.

On the surface, Caltech's core doesn't look too unusual, perhaps a bit more physics and a bit less of the humanities than is typical, but nonetheless the load looks reason-
able. Why, then, do undergraduates often describe their Caltech experience as 'drinking from a firehose'? The "elevation change" expected in a single Caltech course is, on average, much larger than that expected elsewhere. Although Caltech tends to admit students already at reasonably high elevations, it is very difficult to tell how well each student will be able to keep up, to climb at the incred-
ible rate Caltech expects. This is particularly true in the light of the highly variable path qual-
ity found here at CIT. Consider the fate of Tom Wonhen, as de-
scribed in 'I'm Not Dumb. They're Different' by Sheila Tobias.

Tobin, when he might have become a scientist had he "not hit the wall," as he put it, 30 years earlier as a Caltech freshman. Coming to this western "shark tank" from a less competitive high school environment in Utah, Wonhen's successful background in high school science and mathematics turned out to be inadequate to the Caltech chal-

enge. He left Caltech after one year, and returned, defeated, to Utah. After a break, his mathematical inter-
ests were redirected to another, anc- cient languages. In time he re-
ceived a Ph.D. in Greek and Latin and became a professor of classi-
cal languages and history at the University of Arizona.

It is easy to say Tom just wasn't Caltech material. (Hey, we all know that real scientists don't like languages, right? See Anne Roe's The Making of a Scientist). On the other hand, it does take a wee bit of brain power to master Latin and Greek... and history. Ok, so slow-
ing down the pace of learning at Caltech would have been a success-
vie to some of the "sharks" in Tom's class, those who easily clam-
bered up the mountains Tom fell off of. But that raises the question of whether admitting Tom to Caltech was a cruel thing to do, something not in his best interest. He may well have gone on to a happy career in science, had he started at a "lesser" institution.

This all bears relevance to the issue of undergraduate education at Caltech. Should Caltech's trad-
emark be courses demanding huge elevation changes? Does that sort of teaching really stick with people, is it effective in the long run? Should Caltech let people sink or swim, or should it go to great lengths to protect weaker fish in the "shark tank?" Or is the shark tank no place for fish at all—perhaps a more demanding selection process on the part of the admissions office is called for? Although Caltech may be one of the last places to feel its effects, I think a paradigm shift in col-
lege science education from "weeder" courses and toward out-
of-field literacy is long overdue and is beginning to take place. Professor Goodstein com-
tains eloquently on this issue at http://www.caltech.edu/~goodstein/ elites.html, as does Sheila Tobias in They're Not Dumb, They're Different.

The switch from scientific Dar-
winism to inclusivity will require increased motivational content, shallower slopes, and more focus on the skill set in the science curriculum. Path quality will continue to be important, but it will be even harder to maintain with all new instructional traits being blurred.

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Alternate Futures: the CTTidal, Techcidental, or a middle ground?

BY ROBERT R OSSI, with suggestions from AINE FAISTANDO AND WILL ROYEA

Contents from Previews Pack
glishly as a reaction to the criticism of Cable Guy, this movie puts some necessary "heartwarming" touches, but that doesn't stop some very inspired scenes of high though, touches, but that doesn't stop right now.

lIer dialogue, or tight direction. Characters interesting characters, snappy Frighteners story 61m.
P asadena, CA

This movie is kind of like a when Harvey Keitel, on the action is alternately con-

This movie is a reaction to the criticism of Ford Coppola's The Godfather to a limited number of theatres (in L.A., Mam's Chinese). This isn't anything like a "director's cut," just a new print with cleaned-up visuals and sound. But if you've never seen it, or have only seen it on video, you owe it to yourself to see one of the few truly great movies ever. Perhaps its greatest strength is that there are a vast number of characters in this film, portrayed by the likes of Robert Duvall, James Caan, Diane Keaton, and, of course, Marlon Brando in supporting roles that are more fully realized than the one or two lead roles of ordinary or even most great movies. As good as a movie is it, I can understand the criticism of The Godfather as spreading the impression that all Italians are gangsters and glamorizing the mob, being part Sicilian myself. The recent release Donna Brasco is anything but a glamorization of the mob. Lefty Ruggiero (Pacino again), the guy who takes Johnny Dep as Donna Brasco into the mob, talks big but is in reality a "spoke on a wheel," relegated to busting apart parking meters to pay the higher-ups in his organization while he worries about whether his buddies who passed him up will kill him. Donna Brasco is a personal film, making us feel pity and sadness for the character who loses the best movie since 1990's Goodfellas.

Private Parts

Howard Stern's Private Parts is a well-crafted work, accomplishing the impossible task of turning Howard Stern into a sympathetic character who loses his spoken word career to snivelling, humorless radio executives. It's also a very funny movie, smoothly scripted by Len Blum and Michael Kalesniko and recreating some of his best-known radio segments. The problem with the whole Stern phenomenon is that, the movie aside, his show just isn't very funny. There are not a lot of opportunities to listen to his show to see what the fuss was about, and each time it just sounded like one guy talking about how great he is surrounded by one-liners that bring out every word. Some of his fans say that they'd listen to himself to a regular basis, but it was pain enough to force myself to listen to his show for half an hour.

MEDIA GUY: Find out what you should see at the movies

FEATURES

your experience by rating the section below.

The Godfather and Donna Brasco

Perhaps lost in all the hoopla of the Star Wars trilogy's return, Paramount has re-released Francis Ford Coppola's The Godfather to a limited number of theatres (in L.A., Mam's Chinese). This isn't anything like a "director's cut," just a new print with cleaned-up visuals and sound. But if you've never seen it, or have only seen it on video, you owe it to yourself to see one of the few truly great movies ever. Perhaps its greatest strength is that there are a vast number of characters in this film, portrayed by the likes of Robert Duvall, James Caan, Diane Keaton, and, of course, Marlon Brando in supporting roles that are more fully realized than the one or two lead roles of ordinary or even most great movies. As good as a movie is it, I can understand the criticism of The Godfather as spreading the impression that all Italians are gangsters and glamorizing the mob, being part Sicilian myself. The recent release Donna Brasco is anything but a glamorization of the mob. Lefty Ruggiero (Pacino again), the guy who takes Johnny Depp as Donna Brasco into the mob, talks big but is in reality a "spoke on a wheel," relegated to busting apart parking meters to pay the higher-ups in his organization while he worries about whether his buddies who passed him up will kill him. Donna Brasco is a personal film, making us feel pity and sadness for the character who loses the best movie since 1990's Goodfellas.
... and hail Bopp... the two guys who discovered the comet that has made the news in the last month. I have been blown about comets myself, until very recently. After all I have seen lots of pictures of comets; I have read about them, and as a boy, in my Walter Mitty stage, I dreamed of finding one. Actually I still dream but I'm a grown-up now and must contain my youthful enthusiasms.

I got very excited at the time of Halley's comet, even though it was a bust, in spite of the expectations. But while the view from earth was not what it was predicted to be, the close up views taken by the European space probes were so exciting!

I had imagined a comet to be a ball, spherical, but instead it was, in the poetic words used,

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Events

40 This week's ASMC Movie is Shflf. Can you dig it? It will be shown at 7:30 pm and 10 pm in Baker Lecture Hall. Admission for ASMC members is $2.00 and $2.50 for non-members.

41 Are you a runaway? Can you dig it? Then come to a Swing dance Thing from 8 pm-12 am this Saturday, April 12th, at Avery House. Live swing music, hors d'oeuvres, and drinks will make for a rip-roarin' time for all Swing enthusiasts. Permission from the adviser was provided during the event.

42 Terry Moran, ex-editor, turned 21 yesterday. Congratulate him — now he has as many years behind him as hair colors. Blacker's excellent president, Jon " Marty" Allen also turned 21 yesterday, it's sure too late to give him your 43 The first movie to screen in the German Film Series for Spring term is Der Konig und sein Narr (1983). It will be shown in Baker Lecture Hall on Wednesday, April 16th, at 7:30 pm. The film features English subtitles, there will be an introduction and discussion afterwards. Admission is free. For more information call x8110.

The Prefrosh are coming! Prefrosh Weekend will be held from Thursday, April 17th until Sunday, April 20th. Any organizations, groups, or departments wishing to hold Prefrosh Weekend activities are encouraged to contact Prefrosh Weekend Planning Committee to organize scheduling, etc. Also, any comments or suggestions about Prefrosh Weekend will be welcomed. Send email to dudas@caltech.edu or call the Admissions Office at x6341. If you want to get your own personal prefrosh, turn form in to the Admissions Office today.

The Caltech Division of the Humanities and Social Sciences will be presenting the following seminars for the Spring Quarter 1997.

Science, Ethics, and Public Policy in conjunction with William Bennett Moses Memorial Seminars Thursday, April 17th, 4:00 pm, in the Judy Library, Baker Reading "Sexuality in France: The History of Lega­ lized Prostitution" by David J. Sklansky, from the University of California at Berkeley and Dr. Robert Nye Thomas Hart and Mary Jones Honoring Professor of Humanities and Pro­ fessor of History Oregon State University.

The Astronomers (Geology 0.1) lectures, pre­ sented by the Caltech faculty, are devoted to a variety of the central problems and techniques in earth and planetary science and are open to everyone. All will be directed at a taste­ level audience. No prior knowledge of geology or planetary science will be necessary to understand them. For more information, please contact the Office of the Provost at x5331.

The John Gyles Education Fund is accepting applications for scholarships for students majoring in the sciences, physics, chemistry, engineering, education and the humanities. Applications for the 1998-99 academic year are due by April 15th, 1997.

The American Association of University Women offers a number of fellowships and scholarships. Information is available to students at Caltech.

The American Electroplaters and Surface Finishers Society is offering several scholarships to undergraduate and graduate students who are residents of San Francisco, the San Jose, and the East Bay areas. For more information, contact the American Electroplaters and Surface Finishers Society at x6341.

The American Women's Club in San Francisco is sponsoring a $500 scholarship for female students at Caltech.

The Annenberg Foundation has established a scholarship program for students who are residents of Los Angeles County or San Diego County. The program is open to students who are residents of Los Angeles County or San Diego County. For more information, contact the Annenberg Foundation at x6341.

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The French American Association of Advancement, Inc. (4A) is accepting applications for their 4A, San Francisco Bay Area Application for undergraduate students who are residents of the San Francisco Bay Area. Students must be a sophomore or higher by April 15th, 1997.

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