



Return of books to bookstore is still uncertain

DAI WEI
Contributing Writer

In a dimly lit office in Sloan Building for Mathematics, Professor Matilde Marcolli is quietly reading a research monograph she pulled from her bookshelf. On that bookshelf, which covers an entire wall of her office, lie another 900 specialized science texts she has collected.

“During one quarter I would buy perhaps 20 or 30 books from the Caltech Bookstore,” Professor Marcolli said.

But no longer. The Caltech Science Bookstore was partially closed down in May 2009. While the front section of the Bookstore continues to sell Caltech T-shirts, souvenirs and stationery, the back areas that used to sell textbooks and research monographs are no longer available.

The reason traces back to the school’s response to the country’s 2008 economic meltdown.

“We had to make some adjustments for the fiscal crisis,” said Anneila Sargent, vice president for Student Affairs who

oversaw the reorganization of the Bookstore two years ago. “We wanted to ensure that research and education were maintained at the same standard, while we were still trying to save money across the institute.”

“This includes student affairs, admission, counseling,

were talks with Barnes & Noble,” said Dimitris Sakellariou, Chief Business Administrator for Student Affairs since 2006, who was on the committee.

Earlier this term, Professor Marcolli started a new initiative to reopen the Caltech Bookstore. Within less than two months, she

“I’m going to give you an example of why we are losing money on the textbooks,” said Sakellariou. “Let’s say we ordered 20 copies of books to be sent to the bookstores. Once the books get here, only 5 students buy the books. We then have to ship back 15 books. We are not only paying

scale?” Sakellariou said. “We simply don’t have a large enough market to support the Bookstore on campus.”

Despite the losses, Professor Marcolli said that the Bookstore had substantially assisted her research. “[Before the bookstore was closed,] once or twice a day I would go there for fifteen to twenty minutes to browse new books.” In the online petition, she wrote: “Many of the research papers I have authored so far in my career started out by an idea I got by coming unexpectedly across an interesting book in a bookstore shelf... I would



not have been able to find on Amazon.”

So this is the question: Is the Bookstore a service to the Caltech community, like a library or a lab, or is it a business arm of the school?

Professor Marcolli believes that it is the former. “The bookstore is a service to the educational and intellectual life on campus, it should not be only regarded as a business, like the dining facilities, that has to make as large a profit as possible,” she responded in an email.

Michael Maseda, class of 2011, who was the only student on the Future of the Bookstore Committee, pointed out that this was the challenge for the committee.

has collected over 400 signatures at an online petition site.

The signatories range from students to alums, and several faculty members such as Professor Sandra Troian from Applied Physics.

“The closing of the bookstore is an issue very dear to my heart and I would very much like to see it opened again,” Professor Troian said.

“In a community as small as Caltech, this shows that people want the Bookstore back,” said Professor Marcolli.

Service or Business?

But the reality is that the Bookstore was losing money selling science textbooks.

for the shipping here, but shipping it back.” Moreover, the prices for books at the Bookstore were simply uncompetitive.

“Because we are a small bookstore, we cannot compete with Amazon,” Sakellariou said. “Sometimes our cost for even purchasing the book is higher than the sale prices on Amazon.”

How much did the Bookstore lose annually? “Over half a million dollars,” he said, and that was the number two years ago, before the textbook and research monograph sections were closed down.

Last year, according the Sakellariou, the Bookstore lost around \$180,000. The loss is projected to be lower this year from cutting back managerial staffs. “You know ‘economy of

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News briefs from around the globe

Helping readers burst out of the Caltech bubble

Need to know

< **100** words about the world this week – topics sorted from good to bad

by Sam Barnett – links to full stories available at barnett.caltech.edu/news

Existing home sales rise	2% in 2011 – another 12% increase expected in 2012	[USA TODAY]
Aon creating US jobs	> 1,000 hires planned for 2012 – profit growth of 38% in Q3 2011	[WSJ]
Wikipedia protests SOPA	24 hour shutdown – founder says proposed bills threaten free speech	[CNN]
European debt issues	9 countries receive credit rating downgrades by the S&P	[WSJ]
Tension in Romania	59 people were injured in clashes between demonstrators and police	[AP]
Iraq detains Americans	> 100 contractors and embassy staff – Baghdad asserts authority	[NY TIMES]
Cruise ship capsizes	11 deaths – \$570 million ship foundered with over 4,000 aboard	[USA TODAY]

Food with Mannion!

Do you like eating food?

How about free food at nice restaurants?

Ever want to tell the world exactly what you think of said food?

The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week... The Catch: They'll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now's your chance to prove it!

Email us for a spot on the list at tech@caltech.edu

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ASCIT Minutes

Officer's present: Chris Hallacy, Margaret Chiu, Laura Conwill, Mario Zubia, Michelle Tang, Laura Santoso

Officer's absent: Diego Caporale

Funding Request

1. Veritas forum: For January 26 asking \$300, Religious, exploring questions of truth, have speakers from Caltech that are both scientific and religious, inviting Pat Gelsinger (former CEO of Intel), last year 200 people came (unsure of the number of undergrads), have other funding sources:

PASSED: has been funded in the past, seems like an interesting speaker who will relate to Caltech students

2. Active minds: For February 23, asking \$250, want to have an event for Eating Disorders awareness week, want to have a speaker, Ragan Chastain, to talk about health at every size (she markets herself as the "fat dancer")

PASSED: Don't think the speaker is good for this school in particular, but will give Active Minds recommendations

President's Report

1. Athletics: new token towel system, cut PE classes mostly a result of management or lack of interest, but not all classes cut permanently – working on a rotating schedule

2. Dues: on administrative side, submitted proposal to officially increase dues (already passed student vote)

Officer's Reports

1. ARC (Margaret)
a. No meeting, so not much new: working on course capturing (most profs actually don't want course capturing b/c they think it reduces attendance)

2. IHC (LC)
a. Haven't met yet

3. Treasurer (Mario)
a. Yearly ASCIT budget: IRS form has been reviewed, should change soon

4. Social Representative (Michelle)
a. ESC: Met last week, organized all the interhouse events, but all interhouses are after midterms

b. Ice event?: hoping to have an event on the 4th week, either bringing an ice rink to campus or going to an ice rink as a school (will be expensive though)

c. Concert-party: will be in April, looking for people who will be in the area (Coachella artist?), can't get MHF funding so looking for other sources

5. Secretary (Laura)
a. Big T Editor: Posting sign ups

b. SFC committees: need to schedule meetings with them

Administration considers future of Caltech Bookstore

Continued from page 1

“There was no consensus, because people disagreed about the principle of the bookstore: a service or a business,” he wrote in an email.

The debate over principle, however, might not have occurred three or four years ago. “In good times, you subsidize the Bookstore from other things, and you don’t think about it,” said Sargent. “In bad times, you don’t have anywhere to go to find the money to prop up something like that, and that’s the real problem. In some ways, the philosophical approach is a luxury.”

The Bookstore and the Students

But do students really need the Bookstore?

“I don’t think we should reinstate the bookstore. We have access to all the books we need on countless Internet sites – and they’re usually

cheaper than a bookstore can afford to be!” said Katja Luxem, a sophomore student majoring in chemical engineering.

“I wouldn’t use the bookstore for books if it reopened,” she added.

However, Tanvir Bhuyain, a senior majoring in Mathematics, had a different opinion.

“I probably won’t go look for books in the bookstore personally,” said Bhuyain.

to new books in the bookstore and suggest one of those.”

“Searching ‘new book on noncommutative geometry’ on Google is not going to be very helpful,” Bhuyain added.

of the committee. A recent report by the committee suggested that Barnes and Noble is interested in co-sponsoring the Bookstore, but the administration is reluctant to move forward.

“I think part of the problem with rebuilding a bookstore right at this minute is that we don’t even know where the bookstore is going, and we don’t want to create something that in two years we will have to put a lot of money into, and have to change again,” said Sargent.

She added that part of the reason has to do with Winnett, the building that currently hosts the Bookstore. “Mostly, the bookstore is so tied with the development of Winnett and what kind of space it will be, [which] makes the decision difficult until we have a plan for Winnett.”

“I’d like to aim within 2 years [to rebuild the Bookstore], but it really has to depend on new funding and donors for the Bookstore and Winnett,” added Sargent.

“

Last year, according to Sakellariou, the Bookstore lost around \$180,000...‘You know “economy of scale?”’ Sakellariou said, ‘We simply don’t have a large enough market to support the Bookstore on campus.’

Where is it going?

“There were difficult times, but things are slowly turning around. In the case of the Bookstore, now it has become, in some ways, a philosophical question,” said Sargent.

The future of the Bookstore remains uncertain.

In Spring 2010, the “Future of the Bookstore” committee made a recommendation to the administration, and “a smaller committee was formed to explore implementing it,” according to Professor Warren Brown, the chair

This sentiment is shared by other students. Elijah Lee, a sophomore student who transferred to Caltech this year, noted that “sometimes, it is possible to get books from upperclassmen.”

“But say, for example, I go ask Professor Marcolli for a book on noncommutative geometry that I should have. “She can either suggest some outdated 20-year-old book or she can have easy access

CRTS documents dimming, brightening space objects

DEBORAH WILLIAMS-HEDGES
Science Writer

Astronomers from Caltech and the University of Arizona have released the largest data set ever collected that documents the brightening and dimming of stars and other celestial objects—two hundred million in total.

The night sky is filled with objects like asteroids that dash across the sky and others—like exploding stars and variable stars—that flash, dim, and brighten. Studying such phenomena can help astronomers better understand the evolution of stars, massive black holes in the centers of galaxies, and the structure of the Milky Way. These types of objects were also essential for the recent discovery of dark energy—the mysterious energy that dominates the expansion of the universe—which earned last year’s Nobel Prize.

Using the Catalina Real-Time Transient Survey (CRTS), a project led by Caltech, the astronomers systematically scanned the heavens for these dynamic objects, producing an unprecedented data set that will allow scientists worldwide to pursue new research.

“Exploring variable objects and transient phenomena like stellar explosions is one of the most vibrant and growing research areas in astrophysics,” says S. George Djorgovski, professor of astronomy at Caltech and principal investigator on the CRTS. “In many cases, this yields unique information needed to understand these objects.”

The new data set is based on observations taken with the 0.7-meter telescope on Mt. Bigelow in Arizona. The observations were part of the Catalina Sky Survey (CSS), a search for Near-Earth Objects (NEOs)—asteroids

the original data. The new data set contains the so-called brightness histories of a total of two hundred million stars and other objects, incorporating over 20 billion independent measurements. “This set of objects is an order of

transient events and publish them electronically in real time, so that anyone can follow them and make additional discoveries,” he explains.

“It is a good example of scientific-data sharing and reuse,”

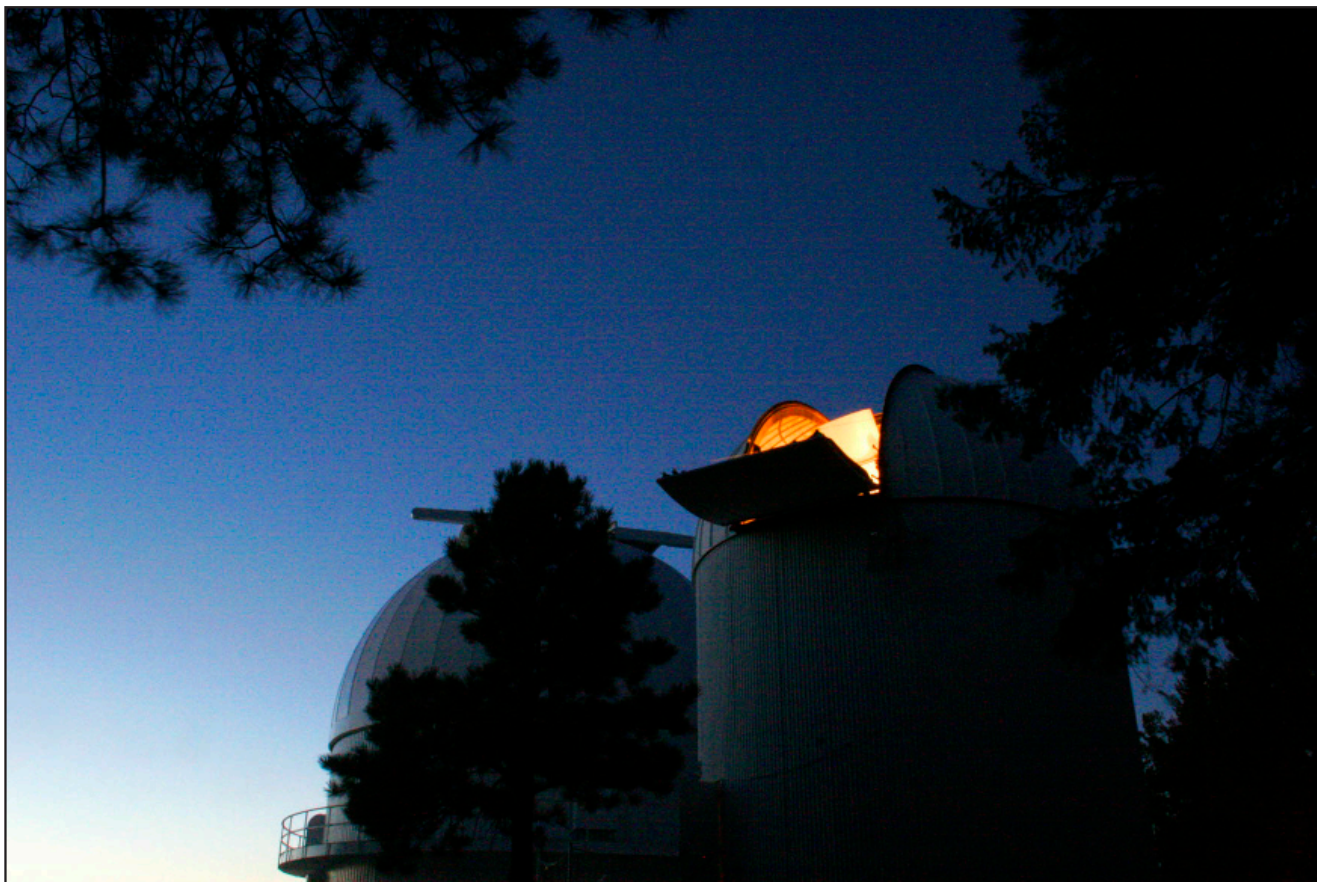
stars that dramatically change in brightness.

“We take hundreds of images every night from each of our telescopes as we search for hazardous asteroids,” adds Edward Beshore, principal investigator of the University of Arizona’s asteroid-hunting CSS. “As far back as 2005, we were asking if this data could be useful to the community of astronomers. We are delighted that we could forge this partnership. In my estimation, it has been a great success and is a superb example of finding ways to get greater value from taxpayers’ investments in basic science.”

The team says they soon plan to release additional data taken with a 1.5-meter telescope on Mt. Lemmon in Arizona and a 0.5-meter telescope in Siding Spring in Australia.

In addition to Djorgovski, Drake, and Beshore, the team includes staff scientist Ashish Mahabal, computational scientist Matthew Graham, postdoctoral scholar Ciro Donalek, and research scientist Roy Williams from Caltech. Researchers

from other institutions include Steve Larson, Andrea Boattini, Alex Gibbs, Al Grauer, Rik Hill, and Richard Kowalski from the University of Arizona; Mauricio Catelan from Universidad Católica in Chile; Eric Christensen from the Gemini Observatory in Hawaii; and Jose Prieto from Princeton University. The Caltech research is supported by the National Science Foundation. The work done at the University of Arizona is supported by NASA.



The Catalina Schmidt Telescope stands on Mt. Bigelow in Arizona and is utilized as part of the Catalina Sky Survey.
- astro.caltech.edu

that may pose a threat to Earth—conducted by astronomers at the University of Arizona.

By repeatedly taking pictures of large swaths of the sky and comparing these images to previous ones, the CRTS is able to monitor the brightness of about half a billion objects, allowing it to search for those that dramatically brighten or dim. In this way, the CRTS team identified tens of thousands of variables, maximizing the science that can be gleaned from

magnitude larger than the largest previously available data sets of their kind,” says Andrew Drake, a staff scientist at Caltech and lead author on a poster to be presented at the meeting of the American Astronomical Society in Austin on January 12. “It will enable many interesting studies by the entire astronomical community.”

One of the unique features of the survey, Drake says, is that it emphasizes an open-data philosophy. “We discover

Djorgovski says. “We hope to set an example of how data-intensive science should be done in the 21st century.”

The data set includes over a thousand exploding stars called supernovae, including many unusual and novel types, as well as hundreds of so-called cataclysmic variables, which are pairs of stars in which one spills matter onto another, called a white dwarf; tens of thousands of other variable stars; and dwarf novae, which are binary

Caltech Couture: Where are the pocket protectors?

ALEX LANGERFELD
Columnist

Our dear and beloved Caltech has been recognized as a paradise for scientists for many decades. On its campus, Techers are free to roam and flourish, doing whatever they need to do so long as it helps their work. The Caltech community is rather tolerant and has passed little judgment on its more eclectic members. This has made Caltech a haven for those so devoted to their work that their resulting appearance may have caused them social discomfort in other institutions.

Several decades ago, one could come to campus and immediately see some of the finest living illustrations of the glorious nerd, depicted by today's Google image search for the word. Today, however, even though Caltech maintains its prestigious academic reputation, it is almost impossible to find any such individuals! What's the missing piece? Answer: the pocket protector.

Before, a man seen with a full pocket protector could be easily identified as a "nerd". At Caltech, armies of these powerful men would occupy the campus and would pull pencils out at any moment to get straight to their intense work. The pocket protector seemed an ingenious invention. It is a solid insert that fits into a man's front pocket and serves not only

to protect the arsenal of pencils it contains, but also prevents them from awkwardly bulging out, provides for immediate access to these tools, and prevents the wearing-out of the pocket itself.

So what happened? Why did these marvelous pocket protectors disappear? Where did they go? I can think of three explanations.

First, perhaps their users thought of a new way to store their pencils. Maybe they did this for aesthetic reasons relating to the clear visibility of their nerd label. Or maybe the pencils fell out too often when the men bent over in lab. However, I would think that the disappearance of pocket protectors only made the scientists' lives more difficult. Storing pencils in a more hidden way makes it very hard to find them in time. This may discourage Techers from using their pencils as often as they should, which may lead to tremendous losses in their later work. It also makes Techers clumsier, as they have to wear more baggage.

Another reason may be that Caltech only recently began accepting females. When the ladies

started showing up, perhaps the male Techers got more conscious of their appearance and decided to hide their telltale protectors and pencils. Or, since the ladies

If women came to Caltech in the first place, the last thing they should be weary of is men with pocket protectors. After all, if they were simply looking for magazine cover-worthy men, they came to the wrong place and male Techers should be aware of this.

The last reason I can think of is that Techers just don't use their pencils as often as they used to! This seems to me the most logical reason of the three. If pencils are used less, there is less demand for them and therefore they decrease in number, so naturally Techers carry less of them and don't really need the pocket protectors anymore. However, this brings up a more fundamental question: why don't Techers use their pencils as much as they used to?

Perhaps they don't work as much anymore. I hope that this isn't true and I think it's unlikely, given that Caltech has so far maintained its high level of scientific prowess.

Techers may have simply found other methods. This seems to

be a more plausible explanation. It is indeed true that these days students are required to write manually much less. Needless to say, many students come to college not knowing how to write in cursive! Therefore, handwriting on average has gotten much worse and students write slower, so for many handwriting has become a laborious task instead of an automatic reflex. Also, now that many lectures are videotaped and the videos as well as the notes are posted online, Techers may see less need to take manual notes on the spot. They can now exercise their learning skills in the privacy of their own rooms, so even if they still use their pencils, they don't have to carry them outside the door.

Given advancement in technology, many find it faster and easier to do things on a computer. Many Techers carry laptops, notebooks, touchscreens, and so on around campus and show off their latest technological acquisitions instead of their overflowing pocket protectors. I conclude that the unfortunate decrease in pencil use is closely tied to the fact that many Techers have gone digital and virtual.

Fortunately, Caltech has remained a place of high tolerance and thus is still a paradise for all Techer types. Therefore, I believe it is no one's place to judge the decrease in pencil use. As long as good work gets done, that's all that matters.



www.engineerdiness.com

(at least most of them) didn't have front pockets to put pencils into, the pocket protectors may have simply gone out of fashion. Again, I don't see this as a good reason for the trusty protectors to disappear.

Curious about your genome? or just looking for a bit of extra cash?

The BGI Cognitive Genomics Lab is seeking high-ability volunteers for a genome-wide association study of general cognitive ability. If you qualify, we'll get to work on providing you **free whole-genome sequencing data, a \$1,500,000* value**. Plus \$35, just because.

Sign up at <https://www.cog-genomics.org/volunteer/>.

*: Okay, that was the price four years ago. Still, not a bad deal for a few minutes of your time.

The Tech sits down to chat with Prof. Al Barr

DAI WEI
Contributing Writer

Tech: Besides Computer Science, you were also very involved in research in Biology and Mechanical Engineering. Years ago you received an offer of a Mechanical Engineering professorship from MIT and another offer from Caltech's Computer Science department. How did you excel in many fields?

Al Barr: There is a piece of advice I got from my Mathematics Ph.D advisor, Garrett Odell, with whom I was studying Mathematical Biology. He talked about something called "vertical interdisciplinary research," where you learn two disciplines thoroughly and speak the language of your multiple disciplines as a full-fledged expert. This is not a secondary discipline—you are fully trained in both fields from the beginning.

This also means that you have to put in more work. For example, in addition to the Mathematics PhD program, for my training in cell biology I studied at the Woods Hole Marine Biological Lab (MBL), in the Cell Physiology course, and also worked in Caltech's Biology Department as a visiting graduate student with Prof. Brokaw.

For people who want to learn about cell biology, these were good ways to get up-to-date. But computer graphics was really just a small stepping-stone on the side.

T: What is your advice for success?

A: In terms of making technological magic happen, you know the kitchen "strike anywhere" matches, the kind with the white phosphorus tip, red sulfur chemicals, and the wood. What we are doing there is combining three exponential growth curves that match in the right combination. There is an analogy in terms of creating a person's career, where one needs to have a strategic combination of ingredients to create this exponential growth in one's own career.

Exponential growth is a kind of magical technology. In the case of the strike anywhere match, you can light it on almost anything. This is what I recommend to people: to combine career ingredients where there is this exponential matching like the phosphorus tip, connected to the red part, and to the wood part. Once the wood is burning, it wants to keep going on its own. Different parts of your career plans can create sudden opportunities and then open doors that help "ignite" future high leverage options over time.

T: What led you to the study of computer graphics? What do you want to accomplish with your research?

A: I was severely ill when I was an undergrad at Rensselaer

Polytechnic Institute. After I recovered sufficiently, I could start to consider longer-term goals. The next question was: what time frame should I select to apply my technological talents?

I reasoned that civilization has been around for about 5000 years, and in that short time frame we've really made an enormous ecological mess, especially in the last 300 years. What technology is going to help us live effectively for the next 5000 years? What technology can be developed to help preserve Earth?

I felt that a special type of future biotechnology would be useful for creating a "steady state" technology, cleaning up the ecological mess and reversing the global climate problems.

I saw computer graphics as a small stepping-stone for this, in studying shape, because of the fundamental relationship between form and function in biology. Even though I was thinking about this as a foundation for future biology, a few hundred years from now, certainly it wouldn't look like biology now.

But it will be useful for now as computer graphics. For instance, David Kirk, one of my PhD students, made the NVIDIA computer graphics chips, the GPU's.

He created this exponential growth with NVIDIA. It's also not too much of an accident that the GPU is becoming useful for making massive scientific calculations.

I also knew that the special effects in movies would be useful as a step for making good scientific simulations and predictions. Some of my students went to Pixar such as Mark Meyer, and Kurt Fleischer, who helped create this part of the exponential growth.

I also helped make sure that the mathematical foundations of computer graphics became sound, for this same reason (and was awarded a Siggraph Achievement award for that).

At Caltech, as a high leverage activity I also helped found one of the U.S. National Science Foundation Science and Technology Centers,



- Provided by Al Barr

Dr. Danny Petrusek, M.D., PhD. He is a UCLA-trained research endocrinologist with a PhD in Applied Mathematics.

He is also an exceptionally gifted and talented interdisciplinary researcher, in the Garry Odell "vertical" style.

What came out of this activity is Petrusek's visionary and timely idea of a large "Global Virtual Hospital" project. This idea is growing healthily. The GVH project started from Danny's observations, in our first "optimistic leveraging" discussions, on how he might ideally want to achieve high leverage societal impact.

The GVH is a strategic project that is envisioned eventually to grow into a large multi-country and multi-university activity, with the intention to save large numbers of lives at a fraction of the current medical costs, all around the world.

In our first discussions, Danny pointed out that a large fraction of medical circumstances are routine, fairly easy to diagnose. For these, the main bottleneck is getting information from the patient's body to the doctor, and getting medical information back to the patient and the patient's support structure.

With the advent of the Internet, cell phone technology, bluetooth (and the right type of system), this part of the bottleneck is not necessary, and many lives can eventually be saved at a very small fraction of the current costs.

Danny and I, along with others, are thinking about creating a proposed center at Caltech for this new type of translational medicine (which is just an optimistic idea now, while other parts of the idea are progressing).

There are many new types of strategic medical devices to be developed, and there are international connections developing, such as to the upcoming medical school to be

created in Singapore, the Imperial Medical School at NTU.

T: What's your advice for Caltech students?

A: I'm a big advocate for thinking big and creating exponential growth. Caltech students have an opportunity to create enormous scientific leverage. I recommend they select fields of study and research activities with enormous potential for changing society. By arranging pieces together they may be able to create exponential growth. There is an "optimistic" technique I recommend.

What I'd like them to do is to imagine an optimistic future, perhaps several incompatible futures. We are just going to assume that certain of these really wonderful and outrageously good things can end up happening, 10, 15, or more years from now.

Then we unwind in a thought experiment from the future to the present, and determine the critical juncture points. Many people are afraid of committing to one type of career only. This is reasonable, actually. What if you don't want to do this one thing? All that work might not be worth it. What if you want to do something else?

What I suggest is that you don't commit to one specific goal. Instead, what you commit to is to keeping your options open, where you do the right things at the critical juncture points that you've already reasoned out, in advance.

You are committing to preserve your ability to choose any of several optimistic futures and to make them become available. This is something people aren't generally afraid to commit to. As long as you know what major items have to be done and when, you can decide on purpose whether to preserve an option, or to let it go.

I knew ahead of time in my PhD several things I wanted to be able to choose, so I made sure that my PhD project and activities were in line with all of these future potential optimistic goals.

I had academic goals, start-up company goals, and they were not all compatible. But that's all right. I'm not committing to do them all. I'm only committing to keep my options open so that I can choose one or some of them. I was even keeping my option open with regard to different academic fields.

Am I going to do Biology, Mathematics, Computer Science, or a start-up company in graphics? Any of those would be good enough.

So I just kept my options open with the necessary juncture work, until finally I had to pick one of them, in this case the Caltech academic offer, which I felt would provide the greatest long-term benefits for me.

If you can set it up that way, then whatever you end up choosing is likely to be within the optimistic framework that you have imagined and have designed ahead of time.

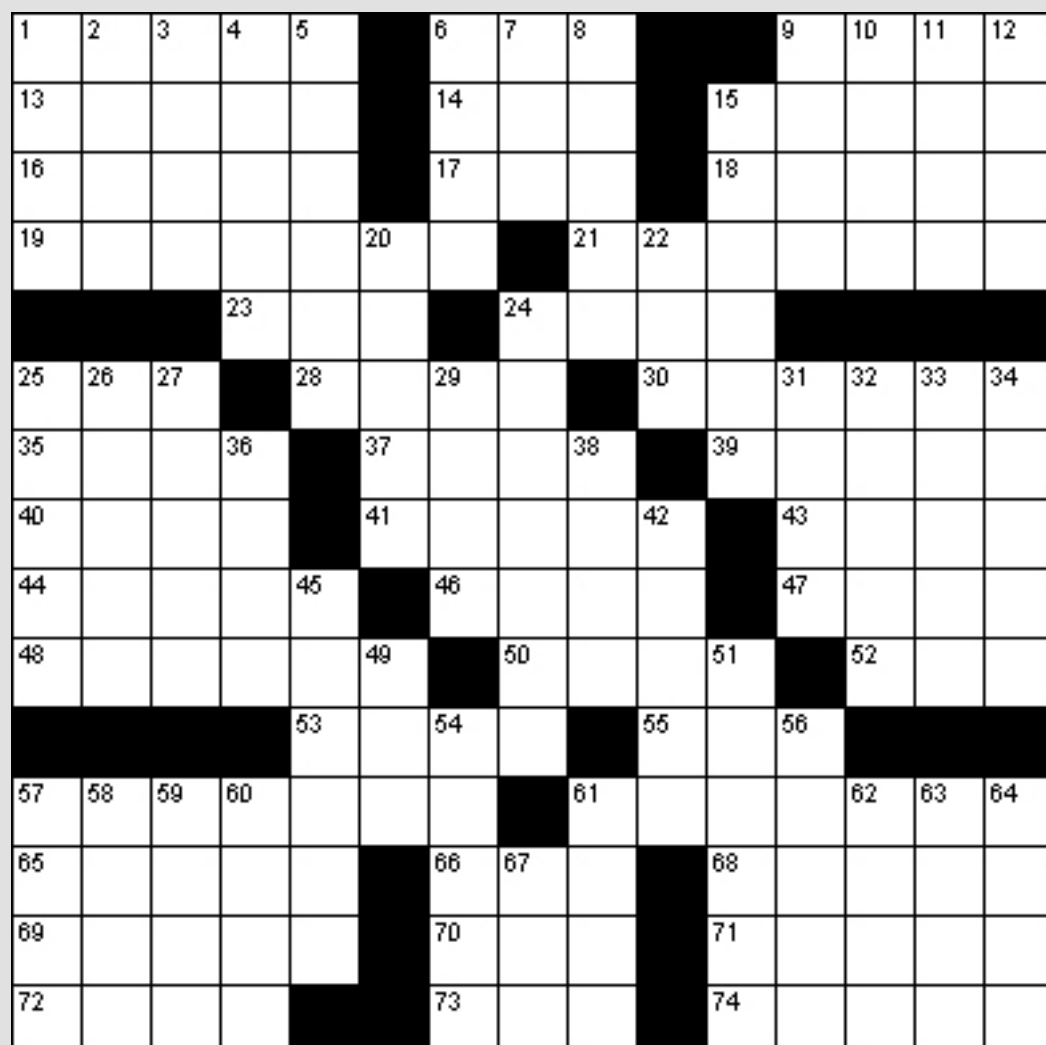


<http://img.ehowcdn.com/>

T: Are you still engaging in any initiatives outside of computer science?

A: Yes. In terms of "high leverage" activity, I used the "optimistic" future planning idea with "matched" exponential growth and leverage-creation (the kitchen match metaphor), starting a few years ago with Caltech researcher

Today's Puzzle: Crossword



Across

1. Small fragment
6. Rotating disc
9. Amphibian
13. Hawaiian greeting
14. Self
15. Smooth
16. Personal attendant
17. Canine
18. Keyboard instrument
19. Magnify
21. Stringed instrument
23. Put on
24. Work doggedly
25. Insect
28. Not any
30. Portions
35. Extended journey
37. Balmy
39. Hobo
40. Row
41. Diplomat
43. Notion
44. Stage whisper
46. Relief
47. Arrow
48. Unit of time
50. Cogwheel
52. Cereal grass seed
53. Periodic rise and fall of sea level

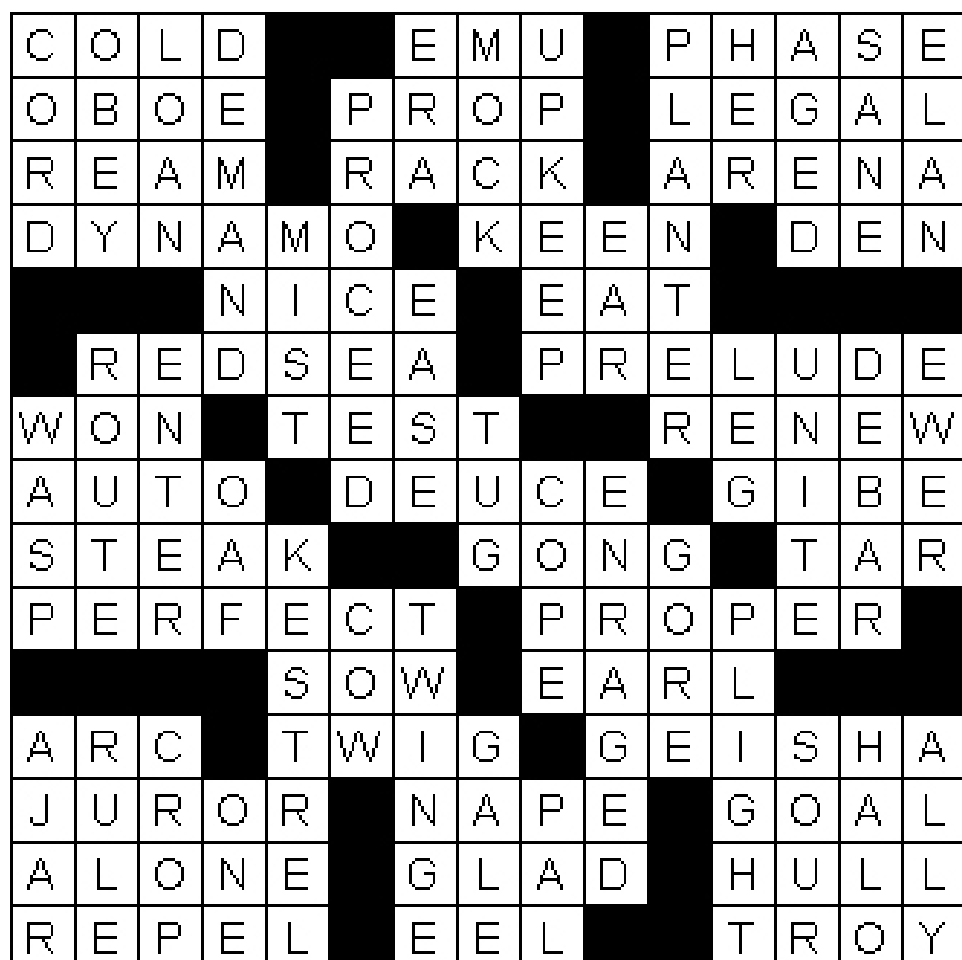
55. Representative, in short
57. Enlisted person
61. Engulf
65. WW2 submarine
66. Epoch
68. Asinine
69. Large truck
70. Fuel
71. Relish
72. Sharp
73. Pig pen
74. Church officer

Down

1. Rescue
2. Tribe
3. Roster
4. In front
5. Regular customer
6. Yield
7. In the past
8. Magnate
9. Roll up
10. Fury
11. Elliptical
12. Unit of heredity
15. Tried to locate
20. Sprite
22. Knockouts, in short
24. Ornamental fringe
25. Book of maps
26. Dissonance
27. Loose fitting garment
29. Number
31. Desiccated
32. Detection device
33. Mineral used as an abrasive
34. Upsurge
36. Repeat
38. Measure of medicine
42. Pine
45. Something
49. Perish
51. Rewrite
54. Residue
56. Relating to punishment
57. Brood
58. Woodwind instrument
59. Traditional knowledge
60. Sew
61. Simple
62. Praise
63. One time only
64. British nobleman
67. Rodent

[<http://www.puzzlechoice.com/>]

Answers to last week's crossword from [puzzlechoice.com](http://www.puzzlechoice.com)



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Smashing Pumpkins, past, present, and future

CLEMENT LACROUTE
Contributing Writer

I'm a hardcore fan of the Smashing Pumpkins. For some reason, ever since Mellon Collie came out I have bought about any release from Billy Corgan, with or without his most famous band, with the exception of his books (alright, maybe I'm not that hardcore). The Pumpkins are still very active, with Corgan now the only original member remaining in the band, but both the new and old line-ups are hitting the music news these days.

As for the past, Corgan has kicked-off the reissue of all Smashing Pumpkins albums from Gish to Machina II, starting with Gish and Siamese Dreams on November 29, 2011. And boy, these albums are good. They have been packaged as regular or "Deluxe" (2CD+DVD) releases, the re-mastered album being accompanied by a number of previously unreleased songs. This made me remember that Gish is still well worth listening to; I had been favoring its follow-up, but Gish actually has an energy to it that seems to signal what was to come (namely, greatness). Siamese Dreams is the Smashing Pumpkins'

perfect album. It's so good that it obtained a vast commercial success, but retained enough soul that it still classifies as "alternate rock". Fan or not, you must know this album (and if you don't, just tune your radio to KROQ, they still play the singles Disarm, Cherub Rock, and Today about twice a day). Corgan did a nice job searching through his old tapes for these reissues, and doesn't just dump in weird instrumental demos or previously released B-sides as bonuses. Some songs are surprisingly good, and it's a wonder they never made it to an actual album.

As for the present, the "new" Pumpkins are touring worldwide and are about to release a new album. Entitled "Oceania," it is a sub-part of Corgan's Teargarden by Kaleidoscope project, which started with free songs released on the Internet. It recently became an actual album project that should arrive early this year.

Let us hope that the "new" Pumpkins will manage to mirror the same recording success that the "old" ones had. Judging from the first Teargarden, it seems the chances that this will happen are excellent.

Stabbed in the front: Caltech's fencing team takes on the Air Force Academy

MACKENZIE DAY
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From frosty morning sunrise to blizzarding sunset, Caltech's fencing team jabbed and stabbed their hearts out at the Western Region Invitational tournament hosted by the Air Force Academy in Colorado Springs on Saturday, January 7th. The team brought home an impressive 28 bout wins against such schools as UCSD, Swarthmore, University of Florida, and the hosting Air Force.

Though Caltech as a team did not defeat any other schools, the individual victories are a great leap forward for this predominantly underclassmen team. Bringing in victories from the freshmen class were Debbie Tsai, Jonathan Bayless, John Christian, Joseph Greef, and Sidney Buchbinder. These freshmen, many of whom had never held a blade before October, held their own against Division I schools. Without a doubt they maintained Caltech's reputation for having class and kicking buttock. All the team's freshmen did impressively well in their first tournament. We look forward to seeing them improve over the next few years.

Other victories included sophomore Terry Lee who won a stunning bout, even after being body slammed to the ground and injured when his opponent tripped.

The mildly comical pileup was all caught on video.

Bruised, broken, and suffering from a lack of oxygen the team fenced its last match of the day against the Air Force Academy. Known for their physical fitness, the Academy cadets met their match in Stanford Schor, John Christian, and Rachel Deghuae, each of whom brought home wins against their Air Force opponents. With their teammates cheering on the sidelines, our fencers overcame Air Force's home field advantage and proved that Caltech is a force to be reckoned with. Go Beavers!

After more than 12 hours of tournament, the team celebrated a hard day of battle with milkshakes, camaraderie, and a round of "My Heart Will Go On" sung by the melodious Andy Zhou. The team's next big matchup will take place at Northwestern in February, where members will compete to qualify for regional championships.

Feeling stressed? Want to whack something with a sword? Come try fencing! Whether you love Pirates of the Caribbean or just want to try something new, come try out fencing, risk free, at Brown Gym this Tuesday and Thursday night, 8pm. All levels of curiosity and experience are welcome. Those of you who have questions or need extra encouragement can email mday@caltech.edu with questions.



Team Captain Eugene Vinitzky (right, orange socks) lunges at an opponent in a foil bout.

- Mackenzie Day



This is an example of how to not drown. From what I understand, if you don't drown the fastest, you can win prizes. I, your Sports Editor, would win no prizes.

- gocaltech.com

Beavers post wins in four way meet

gocaltech.com

PASADENA, Calif. – On Sunday afternoon the Caltech swimming and diving squad hosted a four-way meet with St. Joseph (NY), Mills and Chapman.

The Caltech women posted wins against Mills and St. Joseph while the men won their meet against Chapman. The Mills and St. Joseph squads do not field a men's team.

The Beavers picked up a handful of first place finishes en route to their team wins.

Ben Grabowski started the meet with a first place finish in the three-meter diving competition as the first year diver scored a personal best 181.10. Grabowski also won the one-meter event with a personal best mark of 166.10.

Christian Rivas continued to impress during his junior season. The native of Glendora, Calif., won

all three events he competed in. Rivas won both the short distance freestyle races with first place finishes in the 50 yard freestyle (22.59) and 100 yard freestyle (50.61). His day concluded with a win in the 200 yard breaststroke (2:27.77) in capturing 27 team points.

Another first place finish for the men's squad came from Peter Buhler who won the 1000 yard freestyle competition with a time of 12:09.09. The senior had a pair of second place finishes in the 200 yard backstroke (2:12.08) and 200 yard freestyle (1:55.46)

Caltech also scored multiple team points from first year swimmer C.J. Culpepper. He won the 200 yard butterfly in 2:28.65 while placing second in the 1000 yard freestyle (12:09.29) and third in the 200 yard backstroke (2:33.87).

Jack Blackwood won the 500 yard freestyle (6:01.33) while getting valuable teams points in the 200 yard breaststroke (2nd - 2:31.68) and 200 yard freestyle (3rd - 1:56.80).

The women's meet saw Janis Intoy win the 400 IM in 5:35.46 while grabbing a first place finish in the 200 yard breaststroke (2:51.06).

Caltech's top women's scorer was Jacqueline Mashei-Lano with two first place finishes and a second place tally. The first year won the 200 yard backstroke (2:18.73) and 200 yard butterfly (2:16.02). Mashei-Lano was runner-up during the 500 yard freestyle with a time of 5:34.43.

The women's team continues their schedule on Monday afternoon with a tri-meet against Mills and St. Joseph at 2:00 p.m.

-from gocaltech.com

Scoreboard

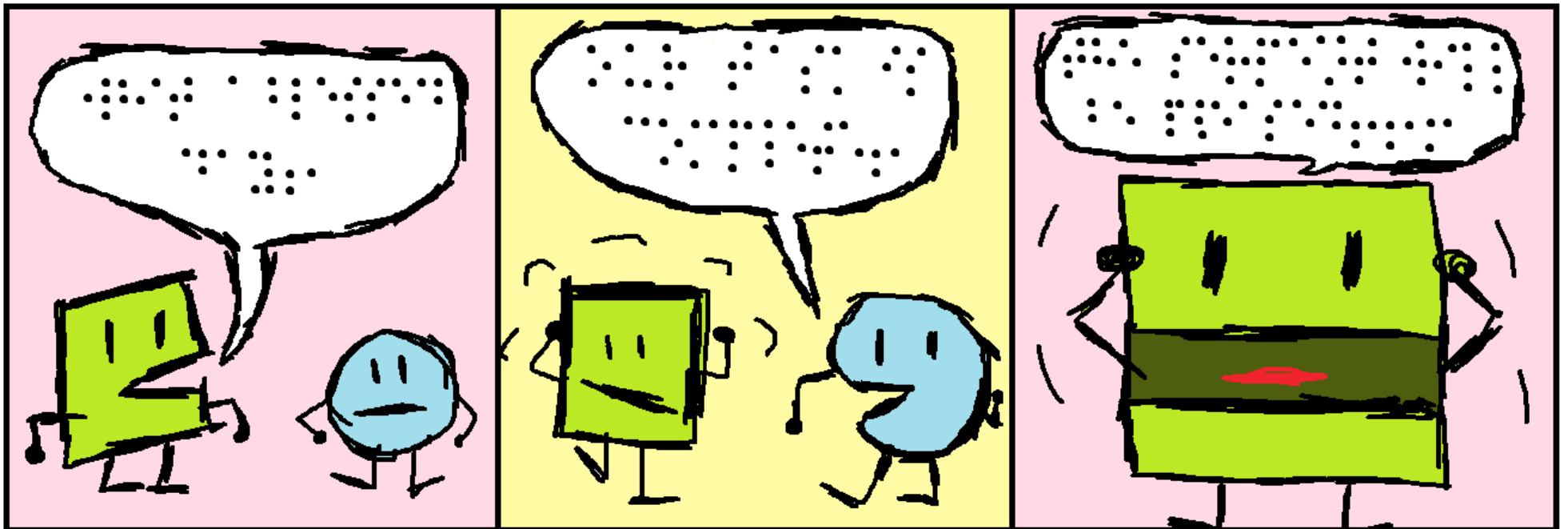
MEN'S BASKETBALL
AT POMONA-PITZER
L, 71-47 FINAL

AT OCCIDENTAL
L, 81-55 FINAL

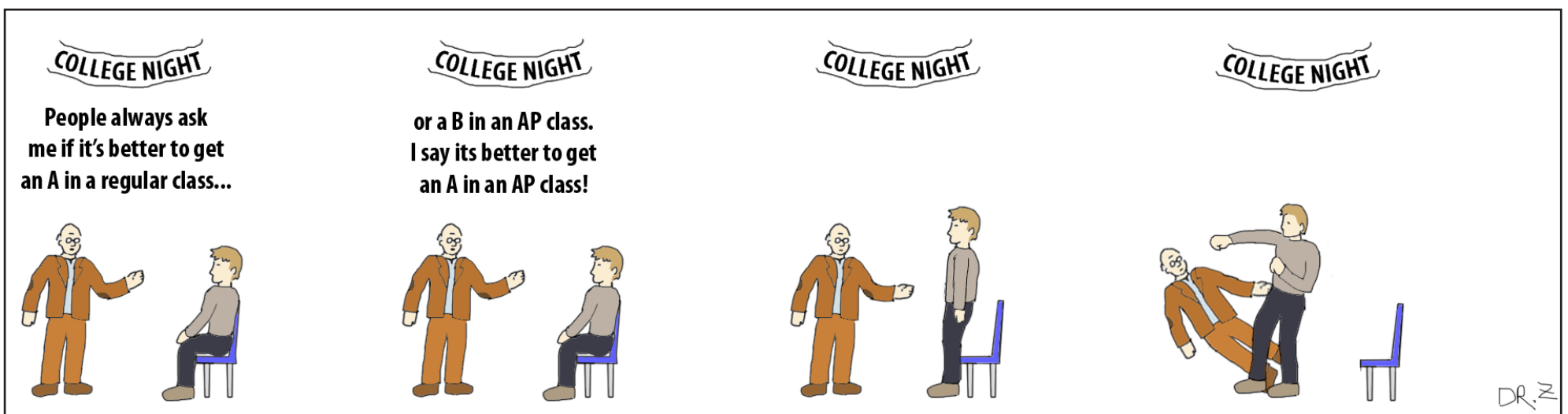
WOMEN'S BASKETBALL
AT POMONA-PITZER
L, 62-41 FINAL

COMIC FOR THE BLIND

BY DALE OSSARTS



Acquired Taste



*For more photos,
videos, and archives
of previous issues,
check out the Tech
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