



The California Tech

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PASADENA, CALIFORNIA

JUNE 10, 2004

COMMENCEMENT 2004



D. Korta/The California Tech
The 2003-2004 academic year ends tomorrow with Commencement. The campus saw a number of changes in the administration this year with the selection of a new registrar and director of admissions. Construction projects changed the face of the campus, and we have more renovations to look forward to.

A Tribute to Arnold Beckman: Inventor, Scientist, Benefactor

By GEORGE KAUFFMAN
and LAURIE KAUFFMAN
and HARRY GRAY

On the morning of May 18, 2004 prolific chemist-inventor-entrepreneur-philanthropist-Caltech professor Arnold Orville Beckman died in his sleep at Scripps Green Hospital in La Jolla, California at the age of 104. He is survived by son Arnold Stone (Arnie) Beckman and daughter Gloria Patricia (Pat) Beckman, two grandchildren and three great-grandchildren.

He will be buried in his birthplace of Cul-
lom, Illinois with his wife Mabel, who died in 1989. A public memorial service, hosted by the Arnold and Mabel Beckman Foundation, will be held on the 11th of June at the Richard Nixon Library and Birthplace, 18001 Yorba Linda Blvd., Yorba Linda, California 92886.

Beckman's multifaceted scientific and technological achievements ushered in the instrumentation revolution. His legacy lives on through his instruments, the firms that he founded, the achievements of his students and the institutes that he and Mabel so generously endowed. Arnold and Mabel were an extremely devoted couple — devoted to each other, to their work, to their community and to the advancement of humanity.

On April 7-8, 2000 the 10th anniversary of the Beckman Institute on campus was celebrated with a two-day, four-session symposium dubbed the "Beckmanfest," featuring a dozen speakers, including Nobel laureate Thomas R. Cech, discussing cutting-edge research and developments at the point where chemistry and biology interact. Each session featured two well-known researchers, whose presentations were separated by that of a Beckman Young Investigator (since its founding in 1991, the Beckman Young Investigator program has supported the work of over 200 assistant professors).

A gala dinner was held on the 10th of April to celebrate Arnold's 100th birthday whose gifts to Caltech have shaped the campus in profound ways. His centennial birthday also was commemorated by the publication of *Arnold O. Beckman: One Hundred Years of Excellence*, a profusely illustrated, luxurious volume that documents the life and achievements of a man who literally became a legend in his own time.

Arnold Beckman was born on April 10, 1900 in the small farming community of

Students Strengthen Unity, Relationships with Faculty

By GALEN LORAM

So as the year winds to a close I thought I'd just scribble a little summary, at least from an ASCIT-y perspective. It's almost been a calm year, as far as things go. Of course, nothing can be truly calm at Caltech — it's amazing how, while it seems like things inch forward at amazingly slow rates, it always feels like we're in the midst of a period of tumultuous change.

So what has happened? The good, the bad, the ugly... and the indifferent. You'll have to forgive me if I manage to include something that's happened in previous years... that happens as you get old ;)

Well, for one, we've had a chance to increase student-faculty relationships. Whether it's in the form of the lunches that have been taking place periodically over in the Avery Dining Hall (which, I believe, will continue next year; I'd encourage both profs and students to attend these, I think they're a great way to get to know each other!), demonstrating outside of Faculty Board Meetings, a record number of "divisional clubs" (math, IEEE, etc.) or a mountain of SURFs, there has certainly been an upswing. Certainly a desirable trend, let's all hope and work towards its continuance.

The demonstration, while it did not end up resulting in the desired outcome, was amazing in that it showed that Caltech students really do care. Voicing your opinion loudly is the only way to get it heard sometimes — I'd encourage you to also let those of us who may be able to help (on the BoD, the IHC, Margo or the Deans) know if you have issues or concerns that you'd like to have dealt with. I think it's safe to say that we're all happy to listen.

520 SURFers this year: the program has been ballooning basically since its inception. Be ready to welcome a whole bunch of non-teachers into the houses for the summer: I'd really encourage you guys to reach out and embrace our newest recruits. People often complain about the size and homogeneity of Caltech. Here is an opportunity to meet some really cool folks from outside and broaden your horizons a bit. Carpe diem (well, not really diem; whatever summer is in Latin). Meet them.

On the administrative side, there have been the continued upheavals in Student Affairs. From getting a new Registrar (who I have heard nothing but good things about), to a new Director of Admissions (who I am happy to personally vouch for

Continued on Page 6, Column 1

Continued on Page 8, Column 1

Be A Hometown Hero



Bring your meetings home to Pasadena!

If you belong to an association, corporation or other group that holds meetings or conventions, why not bring them home to Pasadena?

Pasadena's accessibility, first-class meeting facilities and renowned leisure pursuits make it the ideal meeting destination. You will be a hero for suggesting Pasadena to your group. Additionally, your meeting will generate tax revenues for our city's general fund, which benefits everyone. But how can you get the ball rolling?

Just call Matt Hourihan at (626) 795-9311 or e-mail him at mhourihan@pasadenacal.com. If your group decides to meet in Pasadena, you could be eligible to receive one of several fabulous prizes!

Pasadena: The city that feels like a village.

Pasadena Convention & Visitors Bureau
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Fireside Ember: Dedication, Tenacity Drive Improvement

By TOM FLETCHER

I do not feel comfortable talking at length about the past year. Our memories should function well enough and if not, ASCIT and the IHC's online archives stretch back long enough to fill in the gaps. Just as there is no use continuing to obsess over old arguments, like housing in Avery or fire in courtyards, we should turn our attention to a hopeful future.

I adhere to the belief that improving communication is the most worthwhile focus of our energies. The simple truth is that students on this campus have only the power the faculty and administration are willing to grant them. This amounts to only a voice and the opportunity to use it in meetings. Getting people to listen to our voice requires a few commitments. Showing up at opportunities to articulate ourselves is of the paramount importance.

The work the IHC did this last term with regard to the housing situation was admirably conducted. They made coherent arguments before the faculty committee, they

spoke often to administrators and they never resorted to extremism. By exhibiting a willingness to discuss and compromise, the student body has demonstrated a remarkable maturity.

Progress toward making our life on campus better will never be fast. No one student or administration will be able to make overhauling changes in just a year (see previous failure to overhaul faculty committee reporting). Tenacity and commitment are the only ways for us to make substantial progress. This boils down to a repeated game, one in which both sides have an infinite horizon and every incentive to cooperate.

We should therefore aspire to civility, innovation and vigilance. By being trustworthy partners, we can be treated as equals in the decision-making process. By using our wellspring of talent and creativity, we can help shape new programs and proposals to best help the students. And lastly, by passing on our institutional memory to each

successive generation of Techers and being watchful, we can enforce the tit-for-tat trigger strategy that forces the administration and the faculty to give us the best possible college experience.

The fireside is down to embers. It is time for me to move on to new challenges. My only hope is that this message resonates; that all of you, freshmen, sophomores and juniors will feel inspired to contribute where you can in a dignified manner. Never settle for the status quo. Always look for ways to make things better for the entire Caltech community. Goodbye Caltech, it's my time to leave.



The California Tech Archives
Former ASCIT President Tom Fletcher

Certified mover

Certified shaker

Certified no more mac & cheese

Certified acceleration

Certified rush

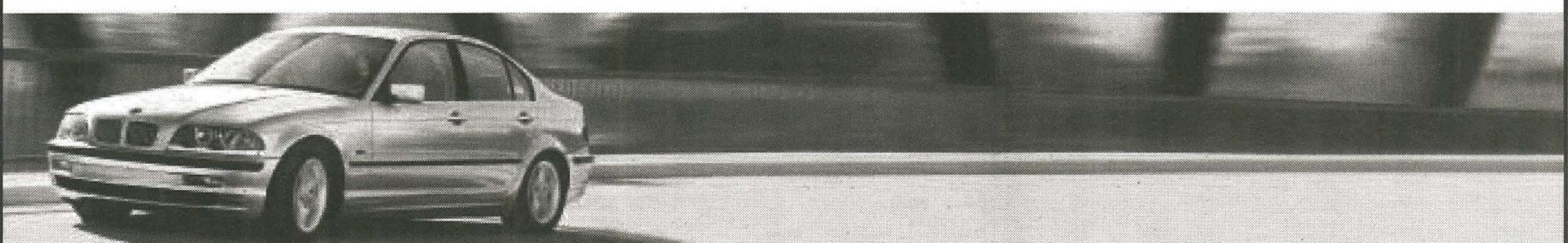
Certified freedom

Certified bring it on

Certified Pre-Owned BMW

BMW
Certified
Pre-Owned

bmwusa.com
1-800-334-4BMW



Certified only at an authorized BMW center.

Get warranty protection* up to 6 years or 100,000 miles. Get flexible leasing and financing options. Get pure BMW.

Certified Pre-Owned

search up-to-date, extensive inventory at bmwusa.com

*Protection Plan provides coverage for up to 2 years or 50,000 miles (whichever comes first) from the date of the expiration of the 4 year/50,000 mile BMW New Vehicle Limited Warranty. See participating BMW passenger car center for details. For more information, call 1-800-334-4BMW, or visit bmwusa.com ©2004 BMW of North America, LLC. The BMW name and logo are registered trademarks.



a letter from martha

In this issue we have a special section on dorm room decorating. I put my best interior decorators to the test when I gave one of them the mission of stuffing as much crap into a room as possible, and the other, finding ways to minimize.

Here at *Martha Stewart Living* we are constantly saying cliche things like "sowing seeds, and planting ideas." We also spend our days laughing at the thousands of people absurd enough to pay five dollars an issue for articles on "quiches" and "topiary gardens." As Gustavo Olm said when he walked into Tammy's room and saw the June issue sitting on her desk, "You subscribe to this shit?" Honestly, people would be much better off just reading *The California Tech*.

Alright, let's cut to the chase. I have no idea how this magazine is still in production while I'm "on vacation," and how a letter from me still appears in every issue. I thought my plan to take over the universe had been thwarted, but apparently you still can't get rid of me.

Either way, enjoy this special issue, and don't blame me if you have no idea what my writers are babbling about...I don't either.

Martha Stewart

This "issue" of *Martha Stewart Living* is completely a work of fiction modeled after the real *Martha Stewart Living* magazine. Opinions do not necessarily reflect those of the editors, and we apologize to anyone who may have taken offense at any of the content herein.
"Martha Stewart Living" is a division of \$100 USA (CAN, \$1 billion)
<http://tech.caltech.edu>

JUNE 2004

Living

MARTHA
STEWART

entertaining the neighbors COZY COTS
THE ZEN OF CONCRETE tasty low grade beefs

CHERRY
DECORATING
IDEAS
FOR THE
CALTECH
DORM

new variations
on tossed salad

01234 56789
\$100 USA (CAN, \$1 billion)
<http://tech.caltech.edu>

Guide to an

Organized Living Space

Many students are concerned with having a dorm room in college that is both stylish and functional. Many also want a pleasant scent and an organization to their furniture that allows a comfortable living space. Many college students are also looking for a date. I can't help with the last one, but I can give you the Caltech Guide to an Organized Living Space.

The key to an organized room is presentation. The people who see your room, friends who come to visit, people walking by in the hall, and stalkers peering though your window at night while you sleep, should be impressed by the subtle yet tasteful arrangement of your various belongings.

As an example I'm going to give a walk through a room I recently helped design and decorate, Fleming 19. As you approach the room you immediately notice that its exterior decorating scheme stands out from other rooms in the Alley, due mostly to its stylish wall hangings. Both art and literature adorn the walls outside, including advertisements for Rock Paper and/or Scissors, a short play that seems to involve 50,000 chickens and eight goats, and various other entertaining decorative touches.

As one enters the door you must move though a series of hanging strings that function both as a clever decoration at the entrance, and a way to keep extremely large insects from flying into the room, assuming those insects are allergic to string. You might also notice that the walls are not the traditional blank that many dorm rooms choose, but instead are covered with literary works. Also on the walls are several posters, which tend to give the room a dignified aura.

Once inside the room you notice the efficient work station. Situated in a corner for space conservation, the desk is well used. While many "new age" decorators recommend an empty, barren style of desk, I prefer to make full use of this most essential piece of furniture. In addition to a computer, I've chosen this desk as a storage space for some peanut butter, several books and papers, kool-aide, and some blank CD's. This lends a homely and edible feeling to the working area, which tends to make it a more comfortable atmosphere for the student who will be using the area for their studies, and still shows that the decorator knows about modern standards of beauty.

A stylish addition to the desk area is an African drum, used not only to show the owner is cultured, both in their view of different cultures and music, but can also hold a powerful hand held computing machine, in the form of a sleek Ti-89, to show the room's resident is also tech-savvy.

To the east of the study there is an area used primarily for storage. If one peers behind the rope ladder, arranged to both allow access to the lofted sleeping area⁽¹⁾ and keep the less well-decorated storage areas hidden. One visitor who toured the room commented "It's key to have the rope ladder for the second floor of your room, cause only then can you get a better view of the pages and pages of wall stuff." Even though the storage area is used primarily in a utilitarian fashion, storing things like winter

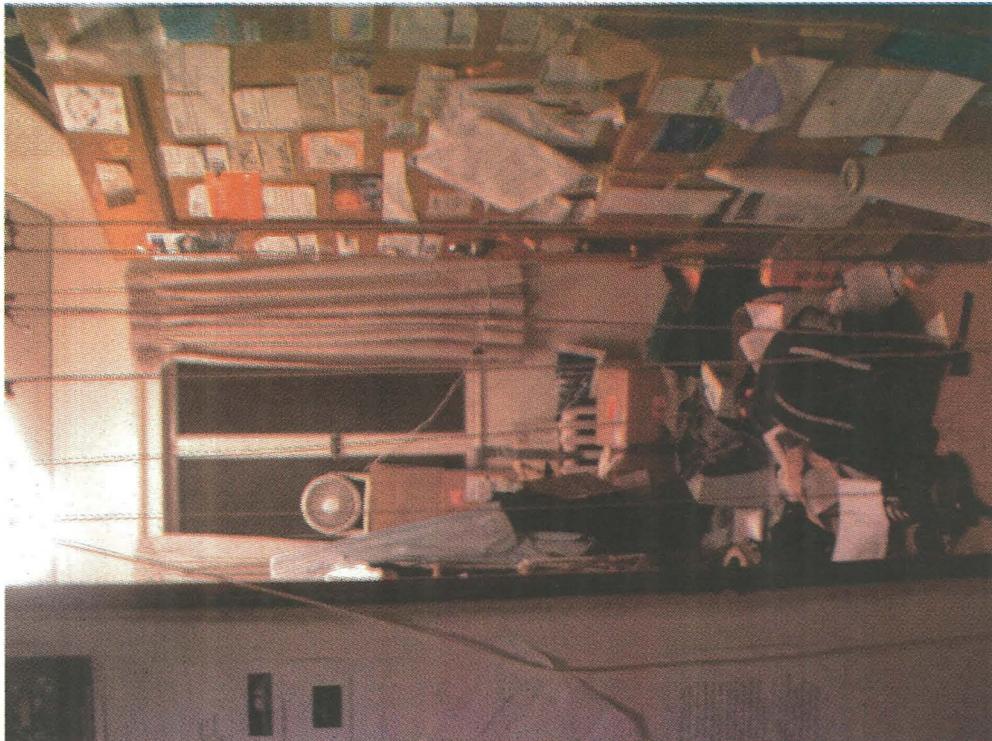


clothes, a box of "Strawberry Corn Flakes," a pile of old papers, and a box of unsorted socks, among other things, it is still well decorated. The wall contains a decorative "antique" GSC flag-football schedule from seven months ago, and much of the storage is contained in stylish dressers, or the more modernist "pile of cardboard boxes."

Across the room from the study and storage area is a set of shelves, used to hold important supplies, such as old papers, a broken alarm clock, some dirty laundry, some clean laundry, and some icing that's been sitting around for several months. One might assume that this is an area that needs no additional decoration to achieve a style all its own, I have decided to throw caution to the wind by hanging a large flag for an Irish County (Kerry) over some of the storage, a pair of goggles next to this, and as the piece de resistance, several brightly colored bandanas. This completes a look of Mediterranean style with an exotic twist.

The final important area of the room is the sink area, or "kitchenette." Here there should be a mirror, because housing put it there, but I would recommend adding toothpaste, some old napkins and even a cat to the area in order to encourage people to enjoy their time in this kitchenette while brushing teeth, hair, or even getting a cool refreshing glass of water.

Speaking of a cat, this is one decorative touch I would add to any room. Not only does it allow you



to add features like a cat litter box and a cat dish to your room, the cat in itself is like a throw rug, easily placed in different places to accent a certain part of the living space.⁽²⁾ "That dog of yours makes most of the mess. I mean, style" said one visitor, referring to the cat. Another said "You're a communist," perhaps also in reference to the cat, but possibly referring to political beliefs advocating government control of economics. All in all, a cat can add the extra tinge of fashion to any room, from the very plain to the vaguely well decorated.

While this room is an excellent example of what should be done to make a dorm room both stylish and functional, the rules are not concrete. For example, while having kool-aide on a desk is clearly necessary, the flavoring can be cherry, watermelon or even fruit punch. You should remember to follow these suggestions when decorating a room, but also add a personal touch. Yours won't be as good as one designed by me, but you can try to come close.

(1) Note: This ladder is not recommended for climbing on, and if you ever come to my room and try to climb on it, it will break. So don't even think about it.

(2) Of course the cat won't stay there, and may scratch you while you move it, but this is the price of fashion.

conversion experience Making a North House Double Cool

South House residents often (rightfully) slight the North Houses for their Soviet-inspired blocks of identical doubles. Despite the statist pressures of the architecture, expressing your inner decorator and rebellious spirit is possible with these simple tips, as shown here in the elegant home of swinging bachelor freshmen Alex Huth and Dan Knoepfle.

Do not live in a room with a loft or skyscrapers! Pick an unimproved room and remove your bunk beds. This allows light to stream into the room like water, expelling the dark, gloomy feel associated with the North House rooms. Creating a well-lit environment has numerous benefits, from making it easier to wake up in the morning to improving the inhabitants' moods.

With the abundance of natural light, Dan and Alex were next able to remove the fluorescent lighting. The harsh glare of white fluorescent lights is associated with the workplace, lab, and hallways. Its intrusion into your living quarters is a subtle reminder that you cannot escape your work at Tech. Dan and Alex enlisted the aid of neighboring electrical engineers to safely remove the fluorescent lights and replace them with a soothing incandescent ceiling lamp for natural light once the sun goes down.

Dan and Alex's room has one simple, utility-maximizing breakthrough.

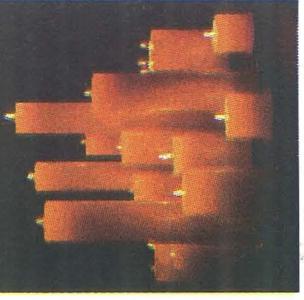
North House doubles normally have their sizes constrained by the need to have night/day and work/play separations. Once you add a bed, a couch, and a desk to a typical room, the claustrophobia is manifest. This is where a few simple Ikea expenditures can liberate your room.

With only a sofa bed, a futon, a stool

and a rolling end table, the room completes the illusion of space by having as little furniture and clutter as possible. When hanging out is the priority, the rolling end table serves as a place to put your lunch. The two beds and stool provide seating for six. When it's time to work, the end table serves as a desk for working, as can the stool. Liberal use of clipboard while seated on the couches makes desks unnecessary. When studies are completed, the futon and sofa bed convert easily. Pillows are stored in the cabinet over the sink (easily reached by the stool), as are blankets for the cold weeks of the year.

The minimalist furniture and its easy convertibility cannot be stressed enough. It is the only way to beat the clutter and smothering lack of space that makes living in a North House double unbearable.

This is the lowest level of redesign. If time permits, a fresh coat of paint works wonders. Dan and Alex chose a relaxing shade of sky blue for their walls. The subconscious reminder of wide open spaces and endless seas pushes the walls back away from the inhabitants. The blue paint also has the feature of hiding some of the dirt that accumulates and tarnishes the white walls in the standard North House double.



Additional small touches round out the experience of living in a hip urban loft and not of an oppressive concrete jungle. Dan and Alex chose a number of simple accoutrements to express their individual personalities. You should pick and choose from these ideas, and come up with your own, to make your room an expression of your individual self that you can feel comfortable in.

A magazine rack mounted on the side of the closet stores school work, magazines, and laptop computers. Getting away from the space-guzzling CRT monitor and moving on to the sleek (preferably silver Powerbook) laptop is a must for getting rid of

chunky housing desks and nerve-shattering mid-frequency fan noises. By keeping loose papers in one place (off the floor!), the room also looks perpetually clean, a signal of maturity from normally slovenly college students that impresses both visiting parents and women.

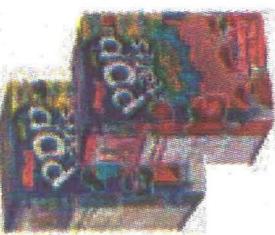
Scented candles create a lounge atmosphere at night. They also cover the endemic "dorm" smell that pervades the North Houses, a mixture of old paper, laundry, and sweat that can dampen even the liveliest spirit.

Storage is accommodated with two birch bookshelves from Ikea. These serve to hold textbooks, work, cooking supplies, and other displayable sundries while taking up only one small corner of the room. Unsightly plugs and control strips are hidden behind guitar stands to complete the

what's for dinner?

QUICK AND DIRTY RECIPES FOR THE BUSY CHEF

PHOTOGRAPHS BY GOOGLE



POP TARTS

PREP TIME: 0.
TOTAL TIME: 5 SEC.
SERVES: YOUR DOG

1. Eat (or microwave and eat)



CUP NOODLES

(For the Very Best in Ramen Noodle Soup)
PREP TIME: 30 SEC. TOTAL TIME: 3 MIN.
SERVES: 1



CDS

PREP TIME: 0.
TOTAL TIME: 0.
SERVES: 700

1. Eat
2. Pulse
3. Repeat next day



PIZZA

PREP TIME: 1 MIN.
TOTAL TIME: 9 MIN.
SERVES: A LOT

1. Preheat phone to 1000°
2. Call 626-808-1988
3. Wait
4. Eat

appearance of the room.

Other decorating possibilities could include: framed prints of architecture with dominant horizontal lines to emphasize the width of the room (the room is already so high from normally incorporating lofts that vertical lines only serve to emphasize the obvious point that there is a lot of space above you). A quiet ceiling fan would nicely complement the room by serving a light source and helping to keep air circulating. An elegant and well-stocked wine rack would also lend an air of sophistication to the room that could be used in place of guitars to hide unsightly outlets. The final steps of rounding out the decoration of the North House double will vary from person to person, but the important points remain salient. Keep it minimal. The appearance of space and cleanliness is the foundation from which all of the good vibes emanate.

TEXT BY TOM FLETCHER

Spectrometer, Oxygen Meter Beckman Ideas

Continued from Page 1, Column 2

Cullom, Illinois, the son of blacksmith George W. Beckman and Elizabeth Ellen Beckman (née Jewkes). His mother inculcated in him the importance of disciplined effort in achieving success, a trait that became a characteristic of his life and career and chores were a regular part of home life.

At age nine Arnold found a copy of Joel Dorman Steele's *Fourteen Weeks in Chemistry* and he became hooked on "the central science." For his tenth birthday, behind the house his father built him a small "shop" for his chemistry experiments. At age 12 Arnold became a grocery clerk and "resident chemist" in a general store, where he was "official cream tester."

In 1912 Arnold's mother died and two years later his father moved the family to Normal, Illinois, where Arnold attended University High School and earned money as a consulting analytical chemist, movie-house pianist for silent films and dance band leader. In 1918 he graduated high school as valedictorian.

The United States had entered World War I and in August 1918 Arnold joined the U.S. Marines and spent three months in boot camp at Parris Island, South Carolina before reporting to the Brooklyn Navy Yard, a major embarkation point for troops headed for Europe. His train arrived late and another contingent had sailed in place of his unit and the Armistice was signed on November 11, 1918.

After eating a Thanksgiving Day dinner, his unit was ordered to attend a second dinner arranged by the Red Cross to honor ma-

rines returning from France, but because of the high casualty rate not enough had returned to fill the tables. Here he met 17-year-old Mabel S. Meinzer of Brooklyn, who was helping her mother serve food.

As Beckman later said, "Luck has played a big role in my life — finding a chemistry textbook and meeting my wife through lucky circumstance." Arnold and Mabel corresponded frequently but did not marry until 1925, when Beckman had established himself financially.

In fall 1919 Arnold entered the University of Illinois, from which he received a B.S. in chemical engineering (1922) and M.S. in physical chemistry (1923). He began graduate studies at Caltech but in 1924 moved to New York to find a well-paying job and to be near Mabel. He became the first technical employee of Walter A. Stewhart, the father of statistical quality control in Bell Lab's Inspection Engineering Department, where he spent two years (1924-1926) learning about electronic technology, the vacuum tube and statistical quality control in manufacturing and the structure of research and development. Less than a decade later he would use this knowledge to make the "marriage of chemistry and electronics a reality." In his words, "If I'd never gone to Bell Labs, I might not have developed any interest in electronics."

In the fall of 1926 Arnold returned to Caltech and in 1928 he received a Ph.D. in physical chemistry for research on the photochemical reactions of two nitrogen containing compounds,

hydrazine and hydrazoic acid, supervised by Professor Roscoe Gilkey Dickinson.

On September 18, 1928 he received his first patent — for a "signaling device" that could be attached to a car's speedometer that would buzz when a preset speed had been reached. (In later years he became famous for his "heavy-foot-on-the-pedal" driving technique, so he must have known even in the 20s that a "speed buzzer" would be needed!)

Appointed instructor at Caltech, he rose through the ranks, becoming known as a master of experimental apparatus and instrumentation and a technical consultant.

Arnold's next invention changed the course of his life and revolutionized chemistry. Glen Joseph, a former Caltech colleague and a chemist at the California Fruit Growers Exchange laboratory, asked him for help in getting consistent measurements of the acidity of lemon juice as part of his research on by-product processes. The sulfur dioxide used as a preservative bleached litmus paper and "poisoned" the hydrogen electrode and the sensitive galvanometer used to measure the current produced by the glass electrode often failed.

Arnold substituted a rugged vacuum tube for the galvanometer to amplify the current so that a sturdier glass electrode could be used. He had again illustrated his dictum, "When you're faced with the necessity to do something, that's a stimulus to invention." In his words, "If Dr. Joseph hadn't come in with his lemon-juice problem, chances are I never in the world would have thought about making a pH meter."

The Beckman "acidimeter," later called the pH meter, was revolutionary in two ways: the highly sensitive amplifier was an electronic innovation and his idea of building an integrated chemistry instrument around it was also new. For the first time a scientist could buy a portable, precision instrument and immediately make quick, simple and reliable measurements with no expertise in chemistry or electronics, leaving him or her free to focus on discoveries instead of tinkering with wires and meters.

Its advent marked the "opening commercial move" in the 20th century's instrumentation revolution that has "made the research frontier ever more accessible to ever greater numbers of investigators and that has made possible

the exponential growth of scientific knowledge."

In 1939 Beckman left Caltech

to begin a career as a full-time instrument maker and entrepreneur. His DU spectrophotometer (1941-42), which operated in the ultraviolet as well as the visible region of the electromagnetic spectrum, was "the first ready-to-use tool for determining the makeup of a given substance by analyzing the appearance of its absorption spectrum." Now complex, delicate measurements that had once required hours or days to perform could be made in minutes with one instrument.

At the 50th anniversary celebra-

tion of the Beckman DU, held in Irvine, California, professor Bo G. Malmström, former Nobel Committee Chair and Caltech Sherman Fairchild Scholar, stated

"it is now apparent that 20th century biochemistry can be divided into pre-Beckman and post-Beckman periods".

He and others at the conference all pointed out that it would be hard to find a chemist or biologist trained in the 1940s or 1950s who had not used either a pH meter or a DU.

Beckman next built infrared spectrophotometers for the U.S. government's synthetic rubber program and the "Helipot" helical potentiometer for MIT's radar systems.

For the Manhattan Project he invented the micro-microammeter and quartz fiber dosimeter. He also founded Arnold O. Beckman, Inc. to market his oxygen analyzer (based on an invention of Caltech professor Linus Pauling) for submarines and high-flying aircraft, which was used after the war for monitoring oxygen levels in incubators for premature babies.

Beckman had created new instruments and companies, fulfilled government contracts, entered the electronics market and greatly expanded the production of his inventions. After the war he diversified and opened new, larger plants producing additional cutting-edge instruments and accessories, e.g., mass spectrometers, mobile air quality laboratories and automobile exhaust gas analyzers. Beckman Instruments, Inc. led the American instrumentation industry in spin-offs, job-hopping and entrepreneurship that characterize today's new industries.

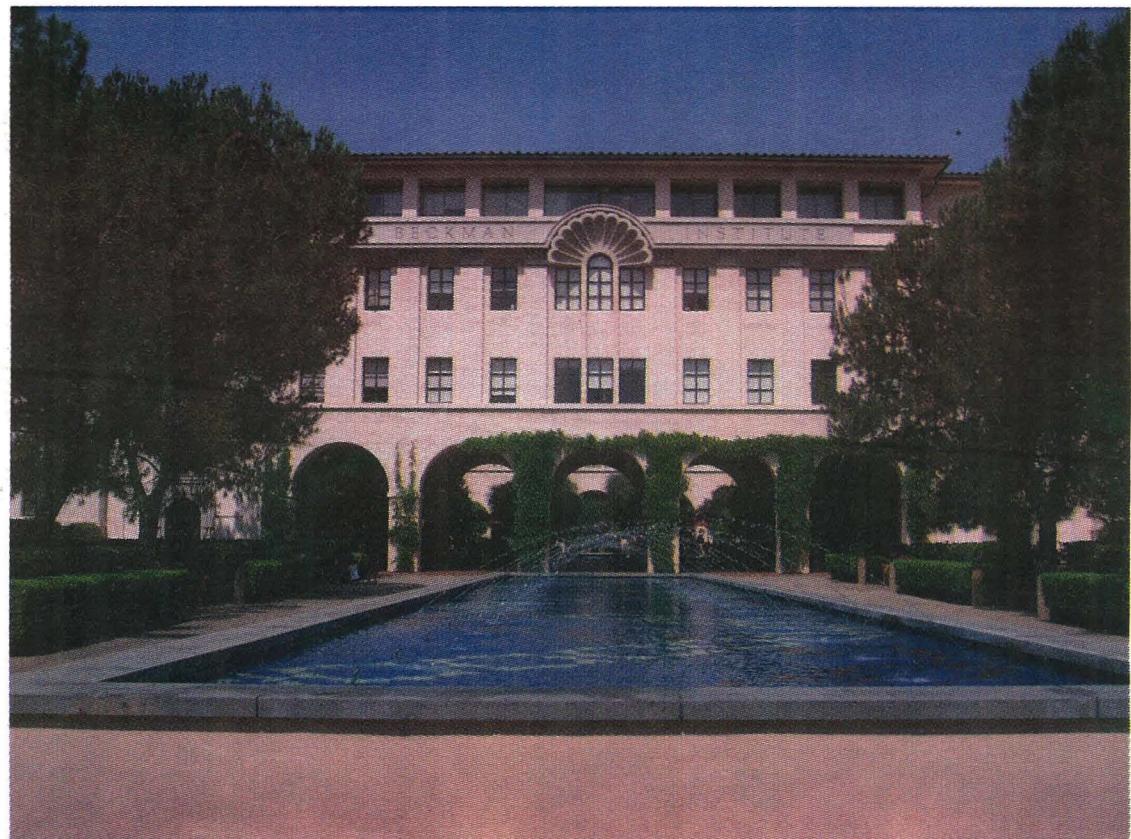
Beckman became an articulate spokesman on science- and technology-related public issues. He served as vice president and president of the Los Angeles Chamber of Commerce, where he

focused his attention on air pollution. He became president of the California Chamber of Commerce (1967) and a member of the Federal Air Quality Board (1970-73), bringing him national visibility.

Beginning in 1953, Beckman opened international subsidiaries in nine countries and became a global leader in instrumentation. He formed the Shockley Semiconductor Laboratories with Nobel physics laureate William B. Shockley to manufacture silicon semiconductors. Although this venture was unsuccessful, locating the firm alongside Hewlett-Packard in the Stanford Industrial Park initiated a chain of events leading to the birth of Silicon Valley and the U.S. semiconductor, computer and Internet industry. The Beckman Systems Division, formed in 1957, long before computers were common, manufactured computer systems to deal with the vast amounts of data telemetered back to Earth from satellites and unmanned spacecraft.

In 1964 Beckman became chairman of the Caltech Board of Trustees. In 1965 he resigned the presidency of Beckman Instruments but remained chairman of its board of directors. In 1981 he retired from Beckman Instruments to devote himself full-time to philanthropy; he headed the Arnold and Mabel Beckman Foundation, which has given hundreds of millions of dollars to support young investigators and build and support world-famous institutes. The Caltech Beckman Institute was dedicated in October, 1989. In 1993, because of declining health and the burden of administering the foundation, Beckman retired but remained as chairman emeritus.

We were extremely lucky to have Arnold Beckman in the Caltech family for over eighty years. His incredible discipline and drive, together with his natural talent, his loyalty to colleagues and his integrity, enabled him to become a world leader in science and technology. He will long be remembered as the Caltech professor who started the instrumentation revolution that changed the course of chemistry and biology in the 20th century, as the thoughtful philanthropist who generously supported fundamental scientific research at so many institutions and as the remarkable human being who helped launch the careers of young investigators who shared his love of science.



L. Tran/The California Tech

Beckman Institute was dedicated in 1989 after being built using a gift from the Arnold and Mabel Beckman Foundation, which Arnold Beckman started to support young scientists.



Courtesy of Linda Bustos

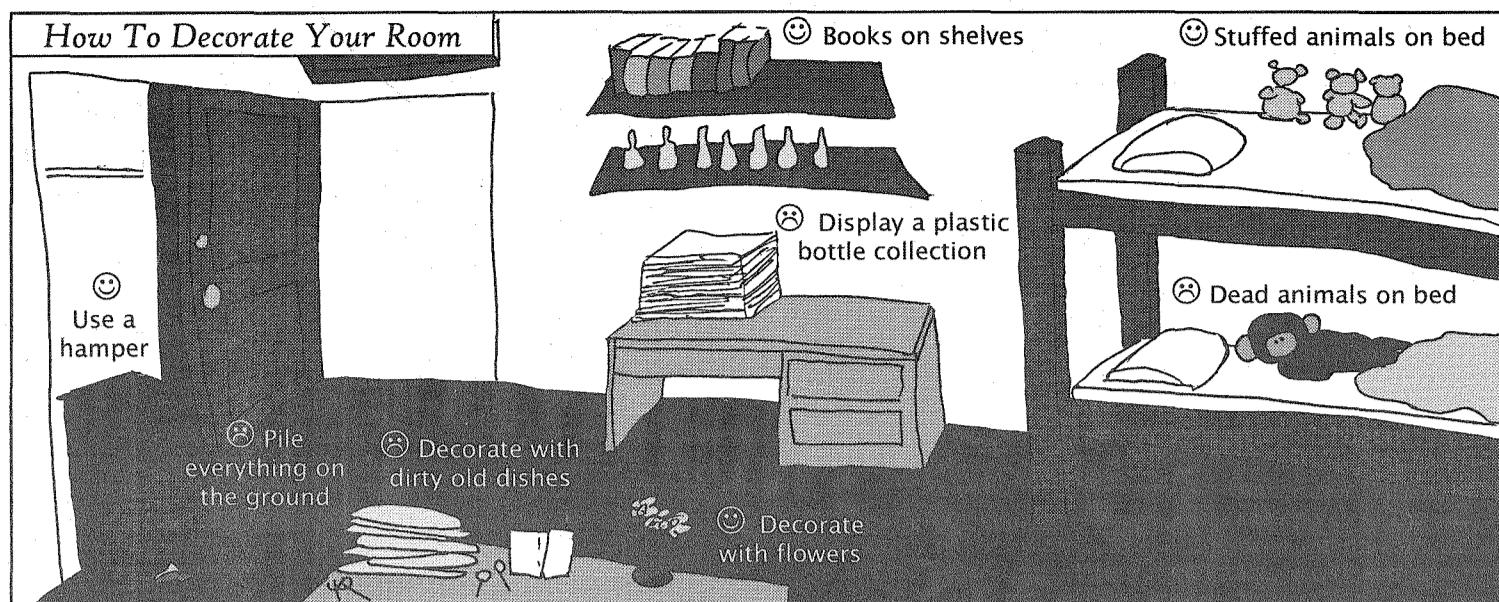
Arnold Beckman, Caltech professor and benefactor, passed away on May 18. He was 104 years old.

Crying Blood

An Uplifting Comic
for the Average Techie

By JACK LEE and
HAMILTON FALK

Edited By CAT CHOU



Good Move!

Make the ***Smart*** Choice
and Join CEFCU.



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Dues Increase, Course Changes, Renovations

Continued from Page 1, Column 4

his wonderfulness) and Jean-Paul's going and returning to Tim Downes' (Athletic Director and Acting Assistant Vice-President) leaving, it's been a very tumultuous year or two in the big white and beige building north of the houses.

While our stalwarts have done an impressive job of holding down the fort (from David Levy doing an amazing job of playing both Registrar and Fin Aid to Barbara pulling double duty as dean and associate dean, simultaneously taking on responsibilities for the grad students), I imagine it has been an unenviable amount of work this year.

Margo by now is fully incorporated into the structure as VP for Student Affairs and at the end of her second seems to be doing

a bang-up job. Perhaps her most recent accomplishment (and one of the largest from a student) is in helping guarantee a sizable pile of money (something like \$40,000 a year from here on out) for student retreats. Hopefully we'll have a bit more calm in years to come.

On a similar front, we had a chance to honor both exceptional staff members and some custodians who do a really great job in their service to students. It seems reasonable to mention their names once again: Alice from the Tech Express, Clara from Chandler, Marie from Housing, John from the MechE shop, Gilbert from the North Kitchens and last (but certainly not least!) Suzette from the Dean's and now Vice President's office. The custodians were: Alvaro from Ruddock Anna Rosa from Blacker, Carlos from

Blacker and Ricketts, Miguel from Dabney, Rosie from Lloyd, Rosa from Avery, Salvador from Page, Zenaida from Ricketts and formerly of Fleming. Thank you to all of you guys for your hard work.

Moving on, ASCIT is continually increasing its services to students: the "ASCIT" Copier down where you turned in your Chem1 sets works again (after many years of dysfunction). And the DVD library is now open to graduate students (who, word on the street, suggests will be helping finance the continued expansion of the library and hopefully a "lock box" (hey, it's an election year, right?) for returning DVDs.) We're also going to have (the day this paper comes out) a vote for increasing dues. They haven't inched up in 25 years, so I'd strongly encourage you to support the increase. Inflation is a bitch.

And, in the event that you NEVER have read the *Tech* before, housing renovations are coming along well. We're all hoping for modular housing (trailer parks

represent!) so keep your fingers crossed. The South Hovses will be under renovation beginning of summer 2005 – end of summer 2006. And freshman will be allowed in Avery in fall of 2005, assuming all plans pan out. And the ITS lab is no more. It may mysteriously reappear at some point, but so few students reported ever using it, that it's likely that we'll instead expand the other labs.

There are also changes coming to the EAS option (you can now focus in a given specialty) – so make sure you save all your old catalogs so you can graduate under them! We also now have an "English" option as opposed to a "Literature" option... though by all accounts, the only difference is exactly that: the name. Personally, I think literature sounds classier. Oh well. Changes to Core 1 also are here at long last! What exactly the changes are... is still a little unclear. But the underlying idea is that they will now be run by the divisions as opposed to the dark, mysterious "Core" office. No longer do we have academic classes

that aren't any under particular division. We all hope that this will lead to a torrid and passionate love affair between undergraduates and science writing, but whether or not this happens shall be known only to posterity. Those changes all take effect in the fall.

I guess the last thing is to say goodbye to the seniors. For me, at least, it's the first class to graduate that I *really* knew and it's going to be weird to see them gone. Best wishes to everyone heading out into the "real world." And a special thank you to everyone who has served on ASCIT during their time here. While I'm guaranteed to have forgotten at least one of you, those that are graduating this year, I believe, are: Anna Szczaniecka, Kathryn Hsu, Jeremy Pitts, Neda Afsarmanesh, Janet Zhou, Joe Jewell and Tom Fletcher. Thank you all for putting in your countless hours!

Galen

Dean Revel: Thanks, Good Luck, Farewell

L'Envoi

The end is near!, the end is near! usually an apocalyptic warning by a white robed, placard wielding doomsayer, but this time the words just signify 1 more day to Commencement. There will be no holds in this countdown. Only 1 more day, seniors and you'll all be launched, whooshed off from that unrealistic cocoon which is Tech.

Besides providing said cocoon (is that good?) we also put you through rather demanding pacers...I hope you will find all the effort you have had to expend, all the sweat and tears will bring their rewards. You got practice, lots of practice at attacking problems, to deduce things from first principles. Being able to do so will serve you well whatever career you pursue, even when you become physicians or lawyers, although Med School or Law School themselves will try to snow you with lots of facts...But then you are also used to drinking from the fire hose.

So best wishes to you all Anita and Andrei, also Andrew, Angel and Ann, Benjamin, Bogdan and Brandon, Charles, Colin or Colleen, both in fact, Chih-Hao, Dagny, David and Di, Elaine, Francisco, Greta and Ghee; Helena and Iram, Jae-Woo and Jam(es) and Jeremy, too, Kathleen, Kwok and Kamilee, Liang, Linda and Lailani, Marko, Megan and Megumi; Neda and Natalia and Nicholas, Paul and Peter (hmmmm...), Rachel and Rebecca, Shane, Sue and Suvia, Tamara, Thomas and Ting, Vicente, Wendy, William, Wei-Yi Xi, Yen-Ru, Yussanne,

Zeinab and Zhogiyi too...and of course the other dozen dozen or so of you all set to graduate.

As I send these best wishes, I want also to express heartfelt thanks to all of you, not just the seniors. I need to tell you how touched I have been by your expressions of sympathy, your kind words and the warm feelings you conveyed, which did much to buoy me at a very hard time.

Thank you and to the seniors Ave atque Vale, Hail and Farewell and to the others .. a bientot, have a great summer.

Jean-Paul Revel

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