



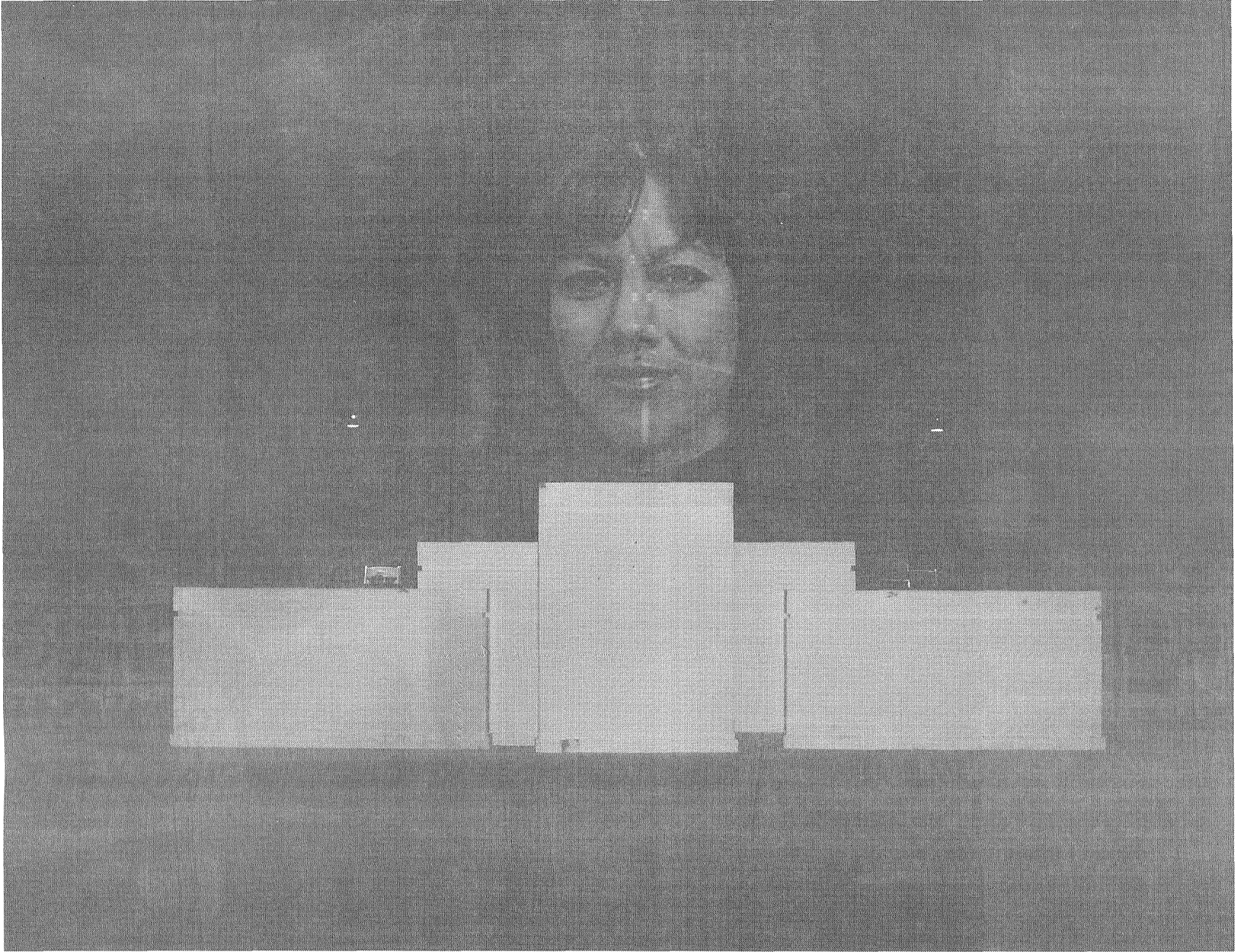
The California Tech

VOLUME CVI, NUMBER 30

PASADENA, CALIFORNIA

JUNE 9, 2005

SENIORS, THIS IS YOUR FUTURE.✦



One of the biggest faces in radio, alumna Sandra Tsing Loh is scheduled to speak at this year's commencement ceremony.

TO BE GRADUATED AT COMMENCEMENT 2005

Even In days of old, when a Bachelor's Degree in the Sciences guaranteed gainful employment, Caltech was famous for students who, instead of resting on their hard-won laurels, marched, charged, chugged, hoved, jogged, sprinted, clambered, scampered, skipped and sashayed onward to Graduate School, not because they needed the money, not because they coveted the prestige, but because they loved the bomb, that explosion of synaptic activity that blankets the land in a debris cloud of ideas and embeds technological shrapnel in every surface of daily life for kilometers in every direction. Only a critical mass of active minds, radiating questions, answers and guesses at one another can ignite a chain-reaction of innovation on the magnitude of the creative forces observed at Caltech. If we who wing our way to ground zero every year sought only to rest our wings and entwine ourselves in cocoons of connections, we would go to Harvard, Stanford or even USC. If we sought merely to sip the sweet nectar of good grades we would flee this place with all our might. Instead, we who swarm to Caltech every year follow the flare from its glowing, grey-matter core. We willingly singe our wings on the roaring Ma1a and the beautiful but deadly ACM95. Even as we stick our feet in the sweet mire of writing requirements and bloat our abdomens with CDS food, we press onward into the intellectual inferno, yearning to become one with it.

Even in the modern economic wasteland, where most educational programs, public and private, are culling from their curricula any subjects students deem frivolous and unhelpful in the tooth-and-nail tussle for jobs, an exceptionally high percentage of Caltech graduates climb above the snarling pack to scale the jagged cliffs of grad school to carve out for themselves Masters', MD's and PhD's to serve as footholds for the ascent to the rarefied climes of research and development. Those quick of wit, stalwart and fortunate enough to make camp at the summits of discovery and breakthrough secure their place in life and history while inspiring and guiding the next generation of explorers, who will see all the farther for standing on the shoulders of rocket-pack-wearing super yetis. Even those who end their days frozen stiff beneath a powdery blanket of course work, rising costs of living, TA work requirements and deadlines still hold aloft their banners in the names of their favorite packing materials, for even they have packed their hearts with courage and their spirits with wonder. For that matter, those who jump directly into the job market still walk away with a detailed understanding multi variable calculus, linear algebra and chemistry, a working knowledge of complex analysis, cellular biology, literature, one or more languages and computer programming, a handful of random facts from menu courses and a complete and utter grasp of one very special subject of their own choosing, and a fellow or lass could have himself or herself a pretty good weekend in Vegas with all that. So wave your hat in the air and yell, "Yah-Heow," because you are now taking the plunge, but I know we will meet again some sunny day.

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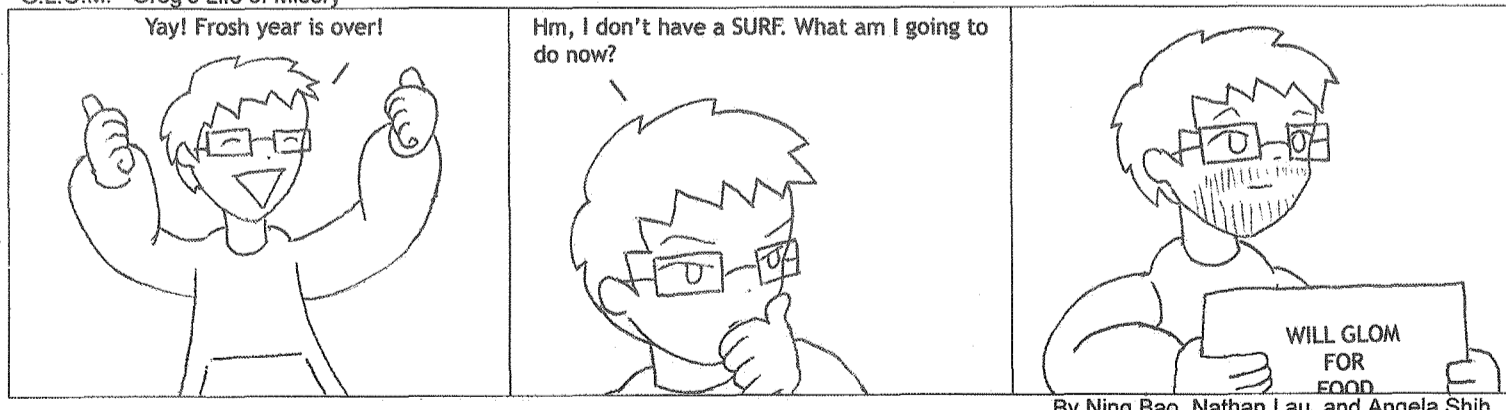
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G.L.O.M. - Greg's Life of Misery



By Ning Bao, Nathan Lau, and Angela Shih

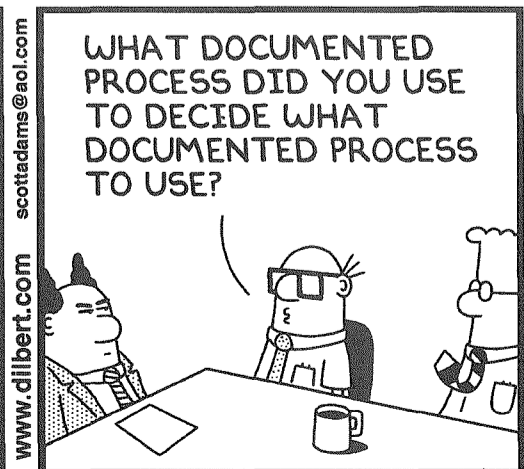
Write for The Tech or the next issue will be eight pages of Dilbert.

The California Tech

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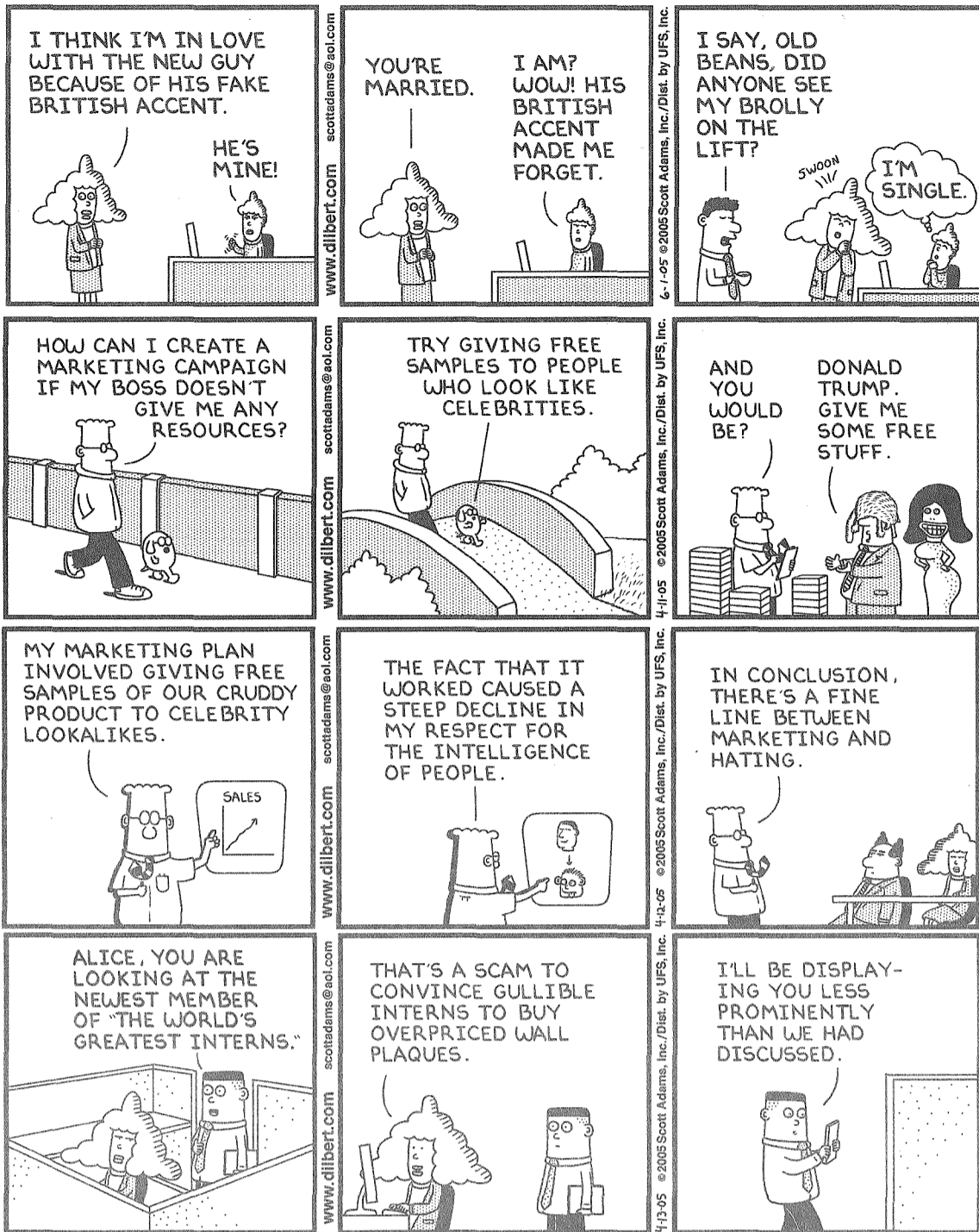


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Dean's Corner: Sorry to See You Guys and Gals Go

Dear students:

As I prepare to leave my position as Dean I want to send all my best wishes for your future. This goes in particular for the Seniors, the students I have known for the longest period and in their "honor" I send along a refurbished "poem" (if one can call it that), the original version of which appeared in the Tech at Commencement time 1999.

L'envoi

Sorry to see you gals and guys go
Many of you covered with the laurels
You earned doing so very very well
What we'll do without you I really don't know.

Some of you made it just by a nose
But never you mind your GPA
You have all earned anyway
Very very special kudoes.

We all had much and frequent cause
To laugh and all without guile
Enjoy pranks and RFs with a smile
Even if some things did make us pause...

By now however all of you can be proud
You went from Arrowhead to the end of your trek
In the Court of Man right here at Caltech
Where all of us sing strong and loud

Sing praises with joy.
Henceforth what you learned here,
And even things you did not wake to hear,
Will serve you well in the years ahoj.

Whatever you become,
Scientists or stars of commerce
Astronauts or doctors diverse
Of Tech you'll carry the power awesome.

So hail to you all on this June day
Though having you disperse makes us feel morose,
We wish that everything comes up as sweet as a rose
As you go on your merry way.

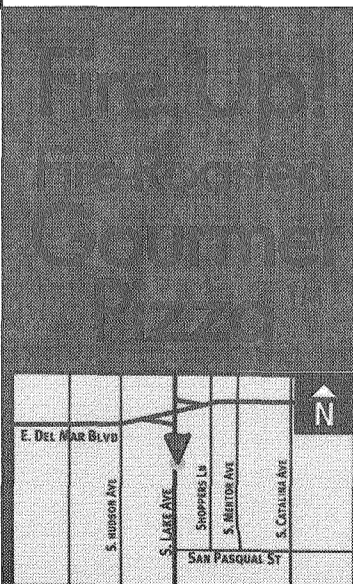
A bientot , as I used to say at the end of my column, see you soon,
although this time I should say..Au revoir..

- Jean-Paul Revel

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is one of the 15 Hertz Foundation
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Physical and Engineering Sciences.
The Hertz Foundation would like to
extend its congratulations to
California Institute of Technology
for attracting this Fellow to
their Graduate program.

See www.hertzfoundation.org for more
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Photo Courtesy of jpaerospace.com
The on board camera captures the mission peak.

Revenge of the Sith toys spotted at the edge of space.

By JOHN POWELL

On May 21st, the droid R4-G9, a Wookiee Warrior, Tion Medon and General Grievous flew to 77,905 feet above the Earth.

Four Star Wars Episode Three "Sneak Preview" action figures were aboard "Away 26" on its mission to the edge of space. This high altitude balloon research mission was flown by JP Aerospace. It soared above the Black Rock desert in Nevada. The vehicle is a carbon fiber and foam diamond carried aloft by two large helium-filled balloons. Away 26 tested telemetry systems for high altitude airships and platforms.

"The temperature dropped to -87 degrees and the Wookiee looked a little chilly, but otherwise they're in perfect condition," said John Powell, President of JP Aerospace. The figures had a wild ride with winds up to 130 mph and high turbulence all the way up.

The figures, 'droids and Wookiees alike, are now for sale on eBay. The proceeds will go toward the PongSat student education program.

ebay link:
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In addition to the celebrities, this flight will carry 202 PongSat student experiments. The Student experiments ranged from plant seeds to computers with sophisticated sensors.

Photos and videos are available at www.jp-aerospace.com.

Away 26 was the eighty-sixth mission flown by JP Aerospace. JP Aerospace is an independent space program staffed by volunteers dedicated to bringing space travel to everyone.

R4-G9, Wookiee Warrior, Tion Medon, General Grievous, Star Wars: Episode III, Revenge of the Sith, and Star Wars are trademarks of Lucasfilm Ltd. Lucasfilm Ltd. is not affiliated with JP Aerospace.



Photo Courtesy of jpaerospace.com
The traditional team signatures and a glimpse of the droid.

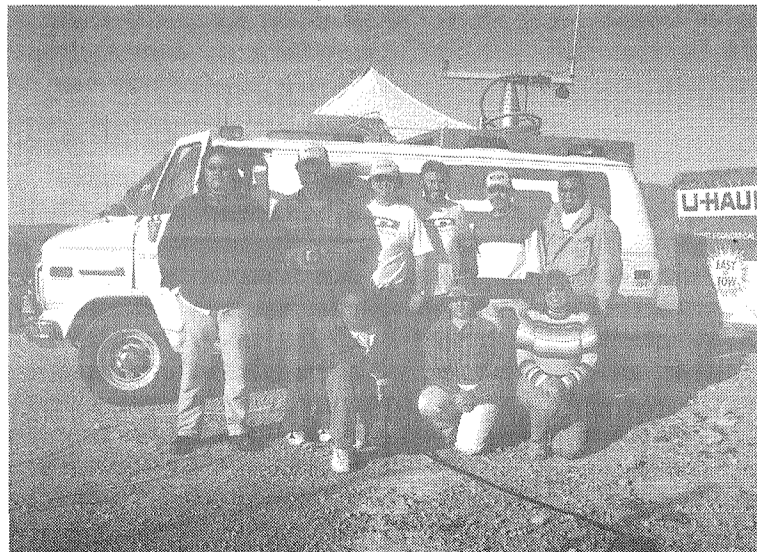


Photo Courtesy of jpaerospace.com
The Away 26 Flight Team

Norman Horowitz Dies; Conducted Experiment with Viking Lander to Search for Life on Mars

By Robert Tindol

Norman Horowitz, a geneticist best known for his work on the "one-gene, one-enzyme" hypothesis and the experiments aboard the Viking lander to search for life on Mars in 1976, died on Wednesday, June 1, at his home in Pasadena. He was 90.

A pioneer of the study of evolution through biochemical synthesis, Horowitz was a professor of biology at the California Institute of Technology for many years. After a distinguished career studying the genetics of the red bread-mold *Neurospora crassa*, he began collaborating with the Jet Propulsion Laboratory in 1965 after becoming interested in the biochemical evolution of life and its possible applications to the search for life on other worlds. He spent five years as chief of JPL's bioscience section.

Horowitz was a member of the scientific teams for both the Mariner and Viking missions to Mars. On the Viking mission, he and two collaborators designed an instrument capable of detecting any biochemical evidence of life on the planet. The results of the experiment were negative at the two Viking sites, but this information in itself was a robust scientific result that continues to inform current efforts in astrobiology to this day.

Horowitz is most renowned in the field of biochemistry for his 1945 thought experiment on biochemical evolution. The paper, published in the Proceedings of the National Academy of Sciences, is today considered the origin of the study of evolution at the molecular level.

Horowitz also performed a seminal experiment that led to the widespread acceptance of the one-gene, one-enzyme hypothesis that, until the early 1950s, was considered a radical theory of the way that life carries on its chemistry.

Horowitz and a colleague used mutations to disprove an alternative interpretation that was gaining credence at the time, thereby indirectly strengthening the one-gene, one-enzyme hypothesis.

A native of Pittsburgh, Horowitz earned his bachelor's degree at the University of Pittsburgh, and then came to Caltech in 1936 for graduate study in the comparatively new division of biology, founded by famed geneticist Thomas Hunt Morgan. After completing his doctorate in 1939 under embryologist Albert Tyler, Horowitz became a postdoctoral researcher at Stanford University, in the laboratory of George W. Beadle.

When Beadle became chair of the Caltech biology division in 1946, Horowitz returned to his alma mater as a faculty member, and stayed at the Institute for the remainder of his career. He was the biology division chair from 1977 to 1980, and became a professor emeritus in 1982. His contributions to the division also included the endowment of the Horowitz Lecture Series.

He was a member of the National Academy of Sciences and the American Academy of Arts and Sciences. His honors included a 1998 medal from the Genetics Society of America. He was also the author of a 1986 book titled *To Utopia and Back: The Search for Life in the Solar System*.

Horowitz is survived by a daughter, Elizabeth Horowitz of Berkeley, and a son, Joel Horowitz of Iowa City, Iowa and Evanston, Illinois. He has two grandchildren, Katharine of Minneapolis, Minnesota, and Daniel of Davis, California. He was married to Pearl (née Shykin) Horowitz, who died in 1985. Horowitz funded the Pearl S. Horowitz Book Fund at Caltech in her honor.

ASCIT Awards Professors, Teaching Assistants, Mentors for Excellence

By MENG-MENG FU

Every year, students are asked to nominate outstanding professors and teaching assistants for the ASCIT Teaching Awards. Professors and TA's are nominated for their excellence in lectures or recitations, interaction with students and general enthusiasm. Nominees for this award usually go above and beyond their expected duties.

This year, the ARC (Academic and Research Committee) received over 80 glowing nominations. It was difficult to select the winners, but in the end, the recipients of the award stood out by going above and beyond their expected duties. This year's recipients are:

Professors:

Richard Murray (Mechanical Engineering)

Ken Pickar (Engineering)

Yu-Chong Tai (Electrical Engineering)

Michael Vicic (Chemical Engineering)

Alan Weinstein (Physics)

Teaching Assistants:

Harry Ming Tak Choi (Applied Computational Mathematics)

Daniel Gold (Biology)

Terrell Neal (Applied Physics)

Research Mentor:

Marc Baum (Environmental Science and Engineering)

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