Biology professor receives Wolf Foundation prize

Recently, Professor Alexander Varshavsky, the Smits Professor of Cell Biology at Caltech, was named the co-recipient of the 2001 Wolf Foundation Prize in Medicine. Varshavsky shares this honor with Avram Hershko of the Technion - Israel Institute of Technology. The prize includes a $100,000 honorarium that will be shared between the recipients. The Wolf Foundation Prize was established in 1978 to promote science and art for the benefit of mankind.

The award-winning area of research was the discovery of the ubiquitin system of intracellular protein degradation and the crucial functions of this system in cellular regulation. The first evidence about this system was discovered in 1978-1980 by Hershko in Israel, who carried out biochemical experiments with extracts from rabbit cells. In 1981-1984, the complementary genetic and biochemical experiments carried out with mouse cells by Varshavsky and his colleagues produced the first evidence that ubiquitin conjugation was essential for protein turnover in living cells. Further molecular genetic studies by Varshavsky, carried out with Hershko's yeast, discovered the first physiological functions of ubiquitin-dependent protein degradation.

The ubiquitin system works by having the ubiquitin protein attach to other proteins, marking them for degradation by proteases. The work by Varshavsky, and subsequent studies by others, have shown that ubiquitin plays a role in a broad range of biological processes, including cell growth and division, DNA repair, responses to stress, the functioning of the brain, the development of most organs, and the regulation of general metabolism. However, when the ubiquitin system does not function correctly, the cell's mechanisms to go awry, causing many diseases including cancer, bacterial and viral infections, and neurodegenerative syndromes.

The development of the ubiquitin system and its role in all cells except bacteria by Hershko and Varshavsky has opened a new route for developing drugs to combat diseases. Varshavsky believes that the properties of the ubiquitin system are a new entry into undergraduate research journals

Additionally, one of the research articles was contributed by a student from UCLA, and submissions to CURJ are open to all undergraduates at educational institutions. CURJ has also entered into a collaborative effort with MURJ (MIT's undergraduate research journal) to promote both publications together.

As part of this effort, copies of this issue of CURJ are being made available to MIT students, and Caltech will receive copies of the next issue of MURJ. In conjunction with the print edition, the web development team unveiled the CURJ website on Mon. (http://www.curj.caltech.edu). The website not only contains information about joining the CURJ team or contributing articles, but also contains the entire journal in both PDF and HTML format, for those who would rather stare at a monitor than savor the feel of genuine wood pulp.

The journal seems to have been well received by the students. "I'm interested in biology," explained one student, "and it was nice to see so much cutting-edge research by my peers." The question facing CURJ now is whether they can build on the success of the first issue and turn the journal into something invaluable for undergraduates across the country.

The next issue is scheduled for release in the fall, and until then the CURJ team will be streamlining the guidelines for submission and recruiting new staff members to make sure that CURJ remains in good hands (whether a computer could recognize those hands or not).

For more information or to join the staff of CURJ, please visit: www.curj.caltech.edu
Soccer craze kills:
South Africa: Around forty people have been killed in a soccer game between the two biggest teams of this South African town. This was a result of an argument which began as a crowd tried to get into the Ellis Park stadium in an attempt to watch the Kaizer Chiefs meet the Orlando Pirates.

Tornadoes hit the Midwest:
Iowa: Two people were killed and several others injured as violent tornadoes spread across the Midwest last Wed.

Spy plane returns safely:
Guam: The U.S. spy plane landed safely in Hawaii after being shot down by a Chinese air force missle, the Air Force said. The plane was flying off the coast of China for eleвлon and recon­ lading in mid-air when a Chinese fighter jet dropped a guid­ ed bomb that killed the co-pilot of the plane. The incident was added to the list of violent acts committed by the Chinese air force.

Caltech's Sloan-Schwarz Cen­ ter for Theoretical Neuroscience received a $400,000 grant from the Alfred P. Sloan Foundation. This grant is intended to make possible further research in the developing field of theoretical neuroscience.

In 1994, the Center for Theoretical Neurobiology was established at Caltech thanks to an $1.4 mil­ lion grant from the Sloan Founda­ tion. In the same year, sister Cen­ ters for Theoretical Neurobi­ ology were established at Banners University, New York University, the Salk Institute, and LCSF. The mission of the Center for Theoretical Neuroscience is to explore the field of theo­ retical neurobiology and to train fu­ ture neurobiologists.

Teoretical neuroscience is a multi-disciplinary field combin­ ing both experimental and theo­ retical investigations into the brain and into the nervous systems of humans and other animals. This field requires knowledge from numerous diverse disciplines.

Big teams of the research performing at the Center for Theoretical Neuroscience include research in temporal coding, neu­ ral representations of sensory data, and the neural mechanism of sight.

WOLF

CONTINUED FROM PAGE 1

ubiqaq research over the last two decades will have an impact on the tools available for the next generation of physicians. He says that ultimately it will be through the efforts of pharma­ ceutical companies to develop drugs that target specific components of the ubiquitin system. When asked about his future research plans, Varshavsky re­ phied that he will be continuing his studies in this exciting field.

NEWS

NEW GRANT FURTHERS BRAIN RESEARCH

by Robert Li

The Outside World

The California Tech

WOMEN'S CENTER SEEKS NEW DIRECTOR

Caltech is currently conduct­ ing a nationwide search for a new director of the Women's Center on campus. Provost Steve Koonin appointed Dr. Melany Hunt and Dr. Sharyn Slavin Miller as co-directors. Dr. Hunt is an Associate Professor in Mechanical Engineering and Dr. Miller is Assistant Vice President for Student Affairs. A search committee was selected and is meeting regularly. A new director will be in place by the beginning of the next aca­ demic year. Anyone interested can view the job description by going to www.caltech.edu and selecting job opportunities un­ der "Quick Campus Links".

If you have any questions or comments, contact: Dr. Hunt can be reached at hunte@caltech.edu and Dr. Miller can be reached at sharyn@caltech.edu.
Dean’s Corner

Paraphrasing Sam Johnson

by Jean-Paul Revel

In an article on cheating undetected by Diana Walker and Melissa Kelly (1), they cite this statistic for 1993 assembled by Who’s Who among American high school students “89% of high schoolers thought that cheating was common and 70% had cheated!” That does sound like a horrible statistic, which bothers me a good deal. For college and beyond. To my best information, at least some high school students go to college, and eventually teach, to their children. It is rather astonishing and horrifying to imagine that among the future leaders of the nation, are people who have gotten to their place of power and influence, not because of skills and knowledge acquired the hard way, but because they faked their way to their place. Think of it. Some of these people are judges, lawyers, company officers, or clerks. Many will become parents, and will spread their virus by their attitudes, by what they teach, or don’t teach, to their children.

While it is easy to dramatize how bad the situation is, it is in fact difficult to establish that youthful cheating necessarily means that because of it, many people are unfit for their jobs. It may also be inappropriate to assume that, once people have tasted the fruits of cheating, they are wont to continue doing so. By the time they reach a responsible position it may well be that all these people have sworn off the kid stuff and are solid and trustworthy. As they mature they may become aware of the harm they could cause by cheating, as well as the harm they could suffer through the cheating of others, and thus be egged on to stop the practice themselves.

But then again, is it possible that having found that their cheating was not discovered, students might continue on that path and end up lacking some of the basic skills that specific exercise (which they did not do) would have helped to nail.

Worse yet, extensive cheating may well mean that they will have failed to learn how to learn, and so be handicapped for life.

Would anyone cheat in school? Sometimes it is in response to parental pressures, to the belief that only a “little Einstein” (to borrow a phrase from our “Challenges and Choices” skit at Camp). Sometimes the pressure comes from within, a need to shine, to satisfy one’s ego, one’s vanity. Probably the main reason is to enhance one’s grades, and so better choices may be accepted in prestigious programs, which may provide a smoother road to success for the rest of one’s life, to maximize one’s chance of being seen as appropriate fodder for medical, or other professional schools.

To start with it is a fallacy to imagine that grades are the uniquely important factor. Better to have good letters attesting to interest, intelligence, diligence, organizational skills, ability in the laboratory, aptitude of mind, writing skills. Cheating in an attempt to look better than one really is, does not take into account that the lack of training in specific areas may well decrease the ability to perform at the prestigious school, and then in real life, with the result that, prestige notwithstanding, one’s success may be limited.

The other reason for cheating is lack of time. For one of thousands of reasons, the student may not feel he has the time to do the work, or has not had the time to prepare adequately, and so turns to cheating as a time saver. Again the lack of background will only compound the problem, as it will have consequences later slowing down things for the next homework, the next exam, that big project etc. If the lack of time is due to poor planning or procrastination, the same problem will of course recur, so, far better to attack it now. Losing a little more time and may be setting for a lower grade, may be a gain, because the understanding gained by doing the work will in the long run make it easier to stay ahead. And if the lack of time is caused by too much partying or other extracurricular stuff, the solution is clear. A choice, hopefully not too difficult a choice, must be made between partying and schoolastics.

Samuel Johnson in “Lives of Poets” is quoted as saying “whoever is wise is also honest” (2). Now to my shame, I must say I have never read the Lives, and so do not know the context of the quote. Taking the saying at face value however I agree wholeheartedly; it is wise indeed not to cheat, not to deprive oneself of a truly meaningful experience.

Bientôt!

Jean-Paul Revel

1. (http://7-12educators.about.com/education/7-12educators/library/weekly/aa010401a.htm)
2. (http://www.samuelpjohnson.com/honesty.html)

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In a season where wins are sparse, the players point to other parts highlights that have made the season worthwhile for them. Here, I really enjoy the camaraderie associated with the baseball team,” says junior Brian Palmer. “I feel like all of us share a lot of fun by facing the daily difficulties of being a student athlete at Caltech.”

Eric Schlosser, and Slaughterhouse, by Gail Eisnitz, reveal the unpleasant realities of the food industry. The facts have been out there, but unfortunately, most of us don’t fully grasp what they mean. It is the “ignorance is bliss” principle at work. We enjoy our disposable products, our SUV’s, and our junk food, and forget about what is happening in saving the environment, profess to care about the mistreatment of animals and workers, and attempt to take care of our bodies, we habitually sweep these issues under the carpet of our consciences.

According to Schlosser and Eisnitz, many of the grossest horrors in food production actually appear to lie in the meat industry. Meat products, of course, start off as the familiar farm animals depicted in idyllic childhood stories. However, the food industry has changed such that much of our meat comes from animals that were not designed to die, but a also increasing the risk of disease epidemic makes Euro­

The facts, once again, are grim. According to Schlosser, due to the highly mixed composition of ground meat, a single diseased animal could contaminate thousands of servings, which greatly increases the spread of disease. Eisnitz points to cases from meat workers of feces and foreign articles being routinely mixed in with packaged meat, so even if you cook your meat and kill the bacteria, it is more than just meat you’re eating! And of course we all know about the unsanitary conditions in the kitchens of fast food restaurants. As a result, national deaths from food borne illness had quadrupled in the 15 years before 1997.

And if you think the government is protecting against tainted food, think again. In both books, top government inspectors and low-level workers alike attest to the unsanitary conditions in meat plants, routine cover­

up by food companies, and laxness and inef­

ficiency of inspectors.

It is not fair, however, to simply demonize the industry. In order to be competi­

tive, companies must do what­

ever it takes to maximize prof­

its, and the only way the industry is to make it illegal or unprofitable for companies to continue producing food under those conditions. If we continue to ignore these issues, then no change will ever occur.

Consumer pressure has prompted most of the nation’s fast food chains to require their ingredients to maintain higher standards than the food we buy at the supermarket, and it can do the same for the food market in general.

In the end, though, none of this is really new. We don’t want to hear any nasty facts that would ruin the enjoyment of our junk food, and as long as the food market maintains our desire for unhealthy food and keep us happy in our illusions, but the ignorance is killing us. Isn’t it about time we wake up and realize that we are in the same boat as those who are in need? We should not hesitate to take part. A recent praiseworthy example was OASIS’ drive to collect money for the vic­t­

ims of the Indian earthquake, which collected over $14k from the Caltech community. If you have not yet contributed to that cause, you can still do so at www.redcross.org.

You can also contribute to the victims of the El Salvador earthquake there!

Another worthy initiative in which you can participate daily and at no monetary cost to you is visiting www.thelungerisite.org. Daily workers contribute to advertising sponsors donating over $3.4 million to feed the hungry in 2000. Sister sites include the Rainforest Site, the Kids AIDS Site, the Breast Cancer Site, the Child Survival Site and the Landmine Site. These are all linked from the Hunger Site.

A Modern Day Les Misérables

If you believe that opportunities to help out people in need are lim­

ited to faraway places, read the story of Ronnie Hawkins, three-strike de­

fendant who was shocked with a 50,000 volt stun belt for eight sec­

onds to shut him up while he was representing himself in a case against him in 1998.

Perhaps more significant is the fact that Mr. Hawkins, an AIDS patient, is serving time in prison for life for shoplifting slightly more than $200 in pennies. Hawkins had six prior felonies – four robberies, one attempted robbery and an assault with attempt to commit robbery – but when it’s the likes of Ronnie Hawkins, we’re tempted to throw away our chances.

Forced to a life in prison for stealing a painkiller that more socially inclined nations might provide for free, Mr. Hawkins story is a painful reminder that the Victor Hugo’s Les Misérables, the tale of a man who’s condemned to years of penal labor for stealing a loaf of bread for his sister’s dying child, is not the longest-running Broadway musical for nothing – it deals with a theme that, centuries after it was written, is still pungently current.

How can you help out, ask by speaking out. To whom should you express your discontent (of the non-availability of painkillers for free, at the place of the punishment at Stalin belts), or what wish? Or, place at start out is with your rep­

resentatives. Passions as repre­

sentatives in the US Congress are:

Adam Schiff
Representative
35 S. Raymond Ave.
Suite 205
Pasadena, CA 91105
Phone: 626-304-2727

Boxer, Barbara
(D)
senator@boxer.senate.gov

Feinstein, Dianne
(D)
senator@feinstein.senate.gov

If you disagree about Mr. Hawkins’ punishment being unjust, here’s a less controversial local op­
portunity to help out: the Red Cross, located nearby on Lake St., is in­

itiously seeking blood donors, and several members of the Caltech community donate their blood a regular intervals. You can call him at 626-799-0841 or email sggvarc@crossnet.org.

Next time we complain about usual woes, let’s remember we’re not in such bad shape after all. And let’s give a little.
NEW
From Levi's Jeans

NEW FOR JUNIORS
SUPERLOW JEANS
$29.99

NEW FOR MEN
LOOSE STRAIGHT 569* JEANS
$31.99

Available at Mervyn's
THE ELBONIAN WILDLIFE PRESERVE.

DON'T WORRY ABOUT THE ENDANGERED SPECIES. OUR DRILLING WILL HAVE NO IMPACT.

I'M SAD TO REPORT THAT OUR OIL DRILLING HAS CAUSED THE EXTINCTION OF THE ELBONIAN UNICORN.

SAVE A SAMPLE OF THE ANIMAL'S DNA SO WE CAN CLONE A NEW ONE.

DON'T FINISH THAT.

I THOUGHT THAT QUANTUM MECHANICS WAS YOUR STRONG SUIT.

YOU HAD HUNDRED SEVEN SPECIES OF ELBONIAN LIFE RUINING THE PRISTINE BEAUTY OF ELBONIA!

YOU'RE THE CHEMISTRY WIZ, REMEMBER? THIS IS A PICTURE OF PRISTINE ELBONIA.

... AND THEN YOU SAID, "IT DOESN'T MATTER IF WE SEE IT FIRST." THEN I SAID...

BLACK, CAT STEALS THE SHOW AT OUR NEW MEETING.

... THAT GIRLS DECIDED WITH "THIS STUPID MAKUP" WHILE THE GUYS DREW TITANIC OVER MY FACE, THIS WAS MY FACE, I HADN'T LAUGHED THIS MUCH IN YEARS.

DO YOU REALIZE THAT NO HUMAN WOULD BE ABLE TO USE A PRODUCT WITH THAT LEVEL OF COMPLEXITY?

GOOD POINT. I'D BETTER ADD "EASY TO USE" TO THE LIST.

YOU TRY THIS FUNNY? YOU THINK THIS MAKES ME LOOK NORMAL. I THOUGHT I'D DRAW A QUOTED ON MY FACE IN A STRANGE "BLUE" HUE.

YOU'RE TALKING TO A CHEMISTRY WIZ, REMEMBER? I THINK MY FEET SMELL WORSE THAN YOUR HANDS.

I BURNED SOME OF MY OWN MAKEUP. I'M DONE WITH BLUES AND DUMBER.

THE ONLY MAKEUP DOES THAT NOBODY HAS TO USE H OOD MAKEUP. YOU DON'T WANT DRAW THIS, DON'T WANT DRAW THIS.

HE TOLD ME TO USE A PRODUCT I KNEW HOW TO USE. I TOOK OFF MY BLUE MAKEUP AND ALL OVER MY FACE, THE BLUE PIGMENT. I THOUGHT LIKE LEONARDO DICAPRIO AT THE END OF TITANIC. WHEN THE GUYS THOUGHT I REGRADED SOMETHING THIS I CRIED. THEY TOLD ME TO USE "BLUE LEMONOSQUEEZE STICKER".

WELL, THAT WAS IT FOR MY STRESSFUL SCHOOL DAY.

LET'S TUNE THAT THE TEENAGER ON THE PHONE, HE ORDERED A DINNER FROM "BLUE LEMONOSQUEEZE STICKER".

GEOGRAPHY BETWEEN THE TEENAGER ON THE PHONE, THE CHEMISTRY WIZ, AND THE CHEMISTRY WIZ.
Crippling Depression

By Ben Lee, Tim Wan, & Mike Yeh

One quality that I previously associated with Matthews’ music was a lulling, lullaby quality. Even the more energetic songs seemed to float. The songs took a more relaxed route to involving the audience. Some artists try to sweep their audience over with emotions and power chords. Instead of taking the cheap and easy route of infectious pop melodies, Matthews writes music that grows on the listener. The attachment to his songs does not always develop immediately, but it is stronger for that. His music is mature; it contains many nuances. Rarely do modern songs stray from the verse/chorus/bridge pattern of music, but Matthews’ music abounds with musical interludes.

Though the Dave Matthews Band has found this next level of hard, edgy rock, I hope they lose it again. I do not think the progression towards a more polished studio rock is an improvement for this group.

 Shameless Plug: For more Dave Matthews Band music, come see Caltech’s premier cover band, Out of Context, perform Dave Matthews’ “#41” (from the hit album Crash) at Beckman Auditorium April 21 at 8 PM.

You should buy this album if:

1. You are a hard-core DMB fan who awaits each new album with open arms.
2. You want to hear Carlos Santana’s guitar skills on “Mother Father”.
3. You are a fan of the polished rock acts that get so much play on the radio.

Next time: Anastacia Not That Kind or something entirely different.
**Announcements**

**Scholarships**

The Math Department announces two categories of prizes offered this year to Caltech undergraduates.

- The 2001-2002 Upper Class Merit Awards. Details are available online at [www.finaid.caltech.edu/news.html](http://www.finaid.caltech.edu/news.html).
- The California Tech Division of the Humanities and Social Sciences Seminar On Science, Ethics, and Public Policy. For complete information, visit [www.hss.caltech.edu/sepp.html](http://www.hss.caltech.edu/sepp.html).

Information, applications and recommendation forms for the 2001-2002 Upper Class Merit Awards Ceremony are available at [www.finaid.caltech.edu/news.html](http://www.finaid.caltech.edu/news.html) for complete information on the following scholarships: Win cash in EDFUND photo contest Winter Environmental Studies Scholarship Program for 2001-2002 Summer Work Study: Information and applications for 2001 Summer Work Study are available in the Financial Aid Office. If you are interested in Summer Work Study, please submit the required application as soon as possible, but no later than June 1, 2001. Your financial aid financial aid must be complete by June 1 in order to be considered for Summer Work Study. If awarded, the Work Study funding will begin with the July 2001 payroll.

**Scholarships**

**The California Tech**

**The California Tech**

The California Tech Division of the Humanities and Social Sciences Seminar on Science, Ethics, and Public Policy. For complete information, visit [www.hss.caltech.edu/sepp.html](http://www.hss.caltech.edu/sepp.html).

*ATTENTION: DEPARTMENT HEADS*, 2001Fall

Dear Department Heads:

We are writing to let you know that the deadline for your 2001-2002 Undergraduate Merit Awards nomination is Friday, April 20, 2001. Please let us know if you have any questions.

Best regards,

Kathleen G. Abert

Director of Undergraduate Scholarships

**Web Site**

[to receive information about joint AAGT at the Spring meeting, please contact Elaine O at 916 or ext.415@its.caltech.edu]

**Upcoming Events**

A screening of artist's videos from Britain will be shown at the Caltech Outdoor Art Space in Science Park at 7 p.m. The event is free. The screening will be held behind the Campus Recycling Compost Bin in Holliston.

**Caltech Library System Spring Instructional Sessions**: "Quick Review: Accessing Full Text Journals and New Online Databases" April 10, 2001 from 12:00 - 1:30 p.m. This class will be held in a walk-in basis. [Sherman Fairchild Library, Multimedia Conference Room, 3rd Floor, Room 328. In formation: email kathleen@library.caltech.edu or call ext. 6713.](http://library.caltech.edu/)

**The Aero Association of Caltech/JPL**, will hold its Spring General Membership meeting on Wednesday, April 17 at 7:30 p.m., in 12-325. The meeting will feature guest speaker Barry Schiff, who has received worldwide recognition for his wide-ranging aeronautical achievements. He holds five world speed records and has received numerous honors for his many contributions to aviation safety, flight test technology, and aeronautical research. Mr. Schiff will speak about joining AAGT at the Spring meeting, please contact Elaine O at 916 or ext.415@its.caltech.edu.

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