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### Research Universities: Core of U.S. Science and Technology

According to the Carnegie Foundation for the Advancement of Teaching. there were 4,387 institutions of higher education in the United States in 2006. Of these 199 are classified as research universities, based on their award of doctorates and the receipt of significant research support. In 2003, the top 100 performed 79.6 percent of the total of academic research. The top 20 were responsible for 29.6 percent of the total; of these, 12 were state supported (including UCSD, which ranked sixth) and 8 private. These research universities have played a critical role in the nation's rise to global prominence in science and technology. Whether the U.S. will continue to enjoy its overall preeminence, in an increasingly competitive environment, will depend on how well the research universities – and the government, industries, and private donors and foundations on which they depend - meet the challenges the universities now face.

#### World War II as the Watershed: The Bush Report

Until World War II, private universities obtained research support from their endowments and from non-profit foundations, and state universities, from state governments. The war brought significant change. On June 12, 1940, President Franklin D. Roosevelt issued an executive order creating a National Defence Research Council. The NDRC was chaired by Vannevar Bush, formerly Dean of Engineering at MIT and then President of the Carnegie Institution of Washington. In 1941, FDR set up the Office of Scientific Research and Development (OSRD) in the Executive Office, giving Bush more authority to organize the nation's scientific resources in preparation for what was considered America's inevitable entry into the war in Europe. OSRD sought to enable scientists and engineers to serve the war effort in settings as close as pos-



By Richard C. Atkinson and William A. Blanpied

sible to their accustomed venues, which often meant universities. Even when it was necessary to create new, secret research facilities, the R&D at these facilities was often placed under the management of universities.

As the war was drawing to a close, FDR asked Bush for advice on what lessons should be drawn from the wartime experience. Bush appointed committees and summarized the findings in a report entitled *Science – the Endless Frontier*. The

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Bush report stressed four conclusions that became the basis of the nation's science policy:

1. Except for national defense, the proper concern of science policy should be support rather than utilization of research.

2. Again with the exception of national defense, the principal focus of federal support for science should be basic research.

3. The mechanisms for the support of research should be consistent with the norms of the practitioners (which effectively meant it should be given in the form of grants allowing the researchers more flexibility rather than contracts setting rigid requirements).

4. Less explicitly stated than the first conclusions but logically implied by them was the proposition that because of the primacy of basic research, the nation's universities should be the seedbed of the national research system.

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#### The Two Formative Periods

It is no exaggeration to say that the implementation of the Bush Report in subsequent decades enabled the research universities to achieve their present status. To appreciate how the research universities have become core contributors to the nation's science and technology, it is important to note the changes that occurred in two formative periods, from 1950 to 1975 and 1975 to 2000.

1950-1975. In this period, the research universities flowered. In the 1950s, universities' share of the nation's total R&D effort stood at 5.3 percent. By 1975 it had risen to 10 percent. In 2004 it reached 13.6 percent. It was widely accepted that investments in research, including the basic research carried out mainly at universities, was a significant factor in promoting economic growth. Other intangible measures testify to the importance of the research university in this critical quarter-century. Between 1950 and 1975, all 26 of the Nobel Prizes in physics were either won outright or shared by Americans; the comparable figures in chemistry and physiology-medicine were 18 out of 26 and 26 out of 26, respectively. With few exceptions, the laureates were on the faculty of American universities. During the same period, large numbers of foreign students sought admission to U.S. graduate schools.

1975-2000. In these years, private industry stepped up support for academic research. In the 1950s, while federal support seemed almost limitless, university researchers ignored industrial funding. By 1975 it stood at only 3.3 percent of all university funds for research. As federal support began to dry up, and as the federal government sought to encourage cooperation by such legislation as the Bayh-Dole Act of 1980, industrial support rose in the 1990s to about 7 percent, where it has since remained. Overall, the profile of U.S. research support changed significantly in this period. In 1975, the federal government accounted for about 45 percent of total national R&D expenditures, while industry accounted for 42 percent. By 2000, the federal contribution had declined to 24 percent, while the industrial share had risen to close to 70 percent.

#### **Current Challenges**

Although the momentum of growth is well established, and there are indicators of positive progress, the research university faces a number of critical challenges – nine in particular – in this first decade of the present century:

1. Increased funding for academic research continues to be skewed towards only a few fields. Between 1973 and 2003, support for medical sciences (measured in constant, inflation-adjusted dollars) rose from approximately \$3 billion to \$12 billion, that for biological sciences from slightly less than \$3 billion to \$7 billion, while support for engineering research rose from \$1 billion in 1973 to \$5.6 billion in 2003. In contrast, support for most other disciplines, including the physical sciences, earth, atmospheric and ocean sciences, and all the social sciences, increased only from \$1 billion in 1973 to about \$2 billion in 2003. The skewing of research funds has been exacerbated by the notorious practice of "earmarking" - whereby members of Congress feather the nests of their constituents and supporters. In the case of academic research, the earmarks set up research projects that circumvent the process of peer review.

2. The project system forces university faculty, especially new faculty, to spend an inordinate amount of time on proposal preparation. In fields where research funding has not increased significantly, competition has become more formidable, especially for newly minted Ph.D.s. The overall success rate for proposals submitted to the National Science Foundation is about 30 percent; for new Ph.D.s it is 20 percent. This is a problem because unless younger faculty can succeed in showing they can produce acceptable research, they are forced to accept positions at less prestigious universities and colleges. In an effort to compete better, faculty researchers are tempted to submit proposals for safe rather than more risky cutting-edge projects.

3. Talented young people are being deterred from opting for careers in science by the time needed to develop their careers. It takes a minimum of five years – seven is the norm – for students in the natural sciences and engineering to obtain their PhDs, and they are then required to obtain one or even two three-year postdoctoral appointments before they can be considered for tenure track appointments. Young scientists are typically in their mid-30s before their independent scientific careers can begin. This puts them in a less than enviable position vis a vis their college classmates who gain secure and productive positions in other professions, not to mention higher salaries.

4. America's rise to global prominence has been made possible, to a significant degree, by the influx of foreign students, but there is no reason to believe that the numbers of this indispensable element in past success will continue to increase indefinitely. In 1998, Asian institutions of higher education awarded 20,000 PhDs, on a par with the number awarded to Asian students in the U.S. Since 1995, a growing number of Chinese, Korean, and Taiwanese students have been obtaining their doctorates in their home countries. In view of the determination of Asian countries to move their universities into the front ranks, U.S. universities would be ill advised to count on attracting more, or even as many, of these students as they have been accustomed to getting.

5. The advance of knowledge has led to the fragmentation of disciplines, with the result that many departments have been split into independent departments devoted to sub-specialties. While this is a good development in some respects, because it reflects and promotes progress in specialized research, it is bad insofar as it weakens communication and makes the integration of new knowledge more difficult. Moreover, many universities that once had a core college of arts and sciences plus a few professional schools such as law and medicine now include less "academic" schools devoted to what are considered more practical curricula, further fragmenting the research university.

6. Because of the increased focus on research and graduate education in the research universities, faculty advancement depends primarily on the

production of highly regarded research, and undergraduate instruction suffered because it is considered peripheral. Undergraduate courses are often made up of two lectures a week to a large class by a senior professor, supplemented by recitation sections conducted by graduate students or post-docs with no training in teaching and in many cases with halting English and no understanding of the give-and-take between teachers and faculty that is commonplace in American universities. Indeed, it is worth noting that a larger proportion of undergraduates who attend high quality four-year colleges go on to graduate school than do those who are undergraduates at the country's leading research universities.

7. In many research universities, senior faculty design their courses to prepare undergraduates for graduate school, thereby doing a disservice to the many students who take these courses as preparation for careers in medicine or to gain an insight into the history and current status of knowledge in one or more scientific disciplines. These students need a broad oversight of the fields rather than the narrower, specialized preparation designed for prospective graduate students in the fields of research.

8. Despite major efforts mounted by the NSF and other federal agencies as well as professional societies to encourage women and ethnic minorities to seek careers in science and engineering, the results have been disappointing. There has been a noticeable increase in female engineers and slight increases in the number of females who elect to earn Ph.D.s in the physical sciences, but there is indisputable evidence that these talented young female Ph.D.s continue to bump up against the "glass ceiling" as they attempt to advance in conservative academic hierarchies.

9. A problem unique to the state universities that qualify as research universities is that their budgets depend on uncertain whims of state governments and legislatures. Although most of the large state universities derive the bulk of their budgets from overhead on federal research grants, funding from state governments remains the bedrock of their research programs. As state budgets become tight, politicians are tempted to suppose that significant reductions in university budgets can do little harm in the short run – failing to understand that reconstituting a diminished educational institution takes many years to accomplish.

Overall, an examination of the history of research universities in the U.S. reveals that as elsewhere, they are fundamentally conservative institutions. When they do change, they most often do so slowly and deliberately. From the 11<sup>th</sup> century through the mid 19<sup>th</sup> century, universities were predominantly teaching institutions, with their distinguished faculties expected to earn their non-academic rewards separate from the institutions themselves. The evolution of American colleges into research universities proceeded slowly following the Civil War. Only during the past 60 years have those universities flourished and become the core of the U.S. science and technology system and widely acknowledged as the best in the world. The record of the last 60 years suggests that U.S. universities will continue to compete successfully in the world market for knowledge. But they can do so only if they understand the challenges they face and are prepared to adapt to them.

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### President's Letter

Meetings of the Council of UC Emeriti Associations (CUCEA) give us a chance to hear directly from the managers of our retirement system (UCRS) and health plan negotiators. At the recent meeting in Berkeley we learned of some important developments on both scores:

The annual UC payroll currently totals \$6.7 billion. \$1 billion of this (16%) is transferred to UCRS, but actuaries tell us that this sum will soon not be sufficient to keep the plan fully funded. Last year, the portfolio managers achieved a 6.1% gain on the \$43 billion they invest, enough to keep us at 104% funding, according to the set of assumptions customarily made for projected faculty and staff retirement. But that level of funding has been gradually falling after reaching 174% in 1990 – a circumstance that prompted three very early retirement incentive (VERIP) offers and the termination of employee contributions to UCRS.

To deal with the decline, the advisors to UCRS are currently urging that contributions by faculty and staff be resumed. Understandably, both faculty and staff and the labor unions that represent some of them are balking. Negotiations are currently underway. Meanwhile, the current Defined Contribution Plan (DCP) payment will be transferred to the UCRS portfolio instead of being accounted for separately. CUCEA has forwarded its own letter to President Dynes and to the Regents urging prompt resumption of employee contributions. CUCEA believes that the opposition is short-sighted because full funding is in the best long term interest of UC employees and annuitants alike.

Because the newspapers bring frequent word of under-funded pensions and corporate conversions from defined benefit plans (DBP) to defined contribution plans (DCP), questions were asked about the Regents' commitment to the current DBP form of retirement compensation. CUCEA representatives were told that no change is being considered for current annuitants, or for current faculty, or even for current UC staff. What about new hires, someone asked? What

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#### President's Letter - cont'd

we learned is that new hires at the weapons laboratories are presently offered only a DCP, not the traditional DBP. Accept this news for whatever it might foreshadow in the not too distant future.

With respect to health insurance plans, we were reminded that health benefits are paid from a pot entirely distinct from UCRS and have never been guaranteed. However, there is no historical precedent for withholding health benefits from annuitants. The current bill for UC health costs - including annuitants, active faculty, and all staff - is \$622 million, with an anticipated growth to \$699 by 2009. Negotiations with contractors this past year resulted in a reduction of average proposed premium increments from 22% to 11% without significant limitation of benefits. Next year, the Regents will place all existing contracts out to open bid.

The issue that looms on the horizon is compliance with a new law requiring that all future health cost obligations be publicly reported along with projected means of financing them. These obligations presently amount to \$6 billion, to rise to \$8 billion by 2009. For the first time, this debit must appear on the Regents' balance sheet, together with a plan to account for its management over a 30-year time span. Fortunately, we employ expert minds losing sleep over this fiduciary issue so that we may continue to enjoy a full night's rest.

– Jack C. Fisher Professor Emeritus of Surgery President, the UCSD Emeriti Association



### THE TIMES ARE NEVER RIGHT

Warm days hanging over San Diego, where streets slide into murky canyons. What is this but home & what is home but a misnomer? Pisces has shifted into Aries. Aggravated bumps shadowing the server's arms are no concern to anyone yet called to our attention show a strain, a fearsomeness hard to conceal. The times are never right. A skin of air is over everything. The sun flows like a liquid, all the universe we see has never happened. There is no truth to time except for birthdays. In a city under siege a ceremony gathers, scattering the birds. We live forever in the instant, in the house we share. A groom & bride are figures, smaller than a thumb & little reckoning how short the passage between death & life.

Jerome Rothenberg, Professor Emeritus of Visual Arts and Literature, was honored recently at Geisel Library where he presented a poetry reading.

# Energy Policy: Another Penner Formula

#### Q and A with Stanford S. Penner, Distinguished Professor of Engineering Physics Emeritus

Q. You have been saying for some time that the world is not running out of oil - aview recently confirmed by other experts and officials – but there is evidently a big disagreement about the source of the oil and gas in the earth. Please explain the difference between the "Western model" and the "Russian/Ukrainian" model of how all that black gold gets created.

A. There remain large amounts of fossil-fuel resources which are well categorized and are of the type that has been used to fuel the world economies for more than a century. Of these resources, coals are the hardest to use cleanly and the most abundant. Petroleum, in the form of accessible oil, unconventional oil such as oil recovered from tar sands (as in Alberta, Canada, for some years), shale oil (not in the present market on a substantial scale because of the ready availability of conventional oil at lower costs), etc., are known to be sufficiently abundant in total to last for about another 500 years at projected levels of population growth and with the hope that reasonable reductions in per capita use will be achievable with world human populations stabilized around 10 billion beginning around 2050.

The picture of conventional oil resources and reserves (i.e., the readily available component at competitive prices with current recovery technologies) is greatly confused as the result of the Russian-Ukrainian (R-U) assertion that oil is not a fossil fuel but is instead formed by direct reactions in the earth mantle at depths that are inaccessible with current drilling technologies. Direct reactions require only the presence of water and carbon-containing rock strata at high pressures and temperatures as in the mantle.

These ideas were popularized in the West by **Thomas Gold** in his book *The* 

Hot Deep Earth (which the Russians refer to as an unprecedented example of plagiarism). There are two important publications in The Proceedings of the National Academy of Sciences (PNAS) dealing with this topic. The first of these was published by J. F. Kenney et al. in August 2002 and contains a proof that the methane formed by direct reactions between water and carbon-containing rocks is converted to higher hydrocarbons simulating major oil components in accord with the Second Law of Thermodynamics (a pillar of 19th century science from which no deviation is known). The second paper was published in 2004 by D. R. Herschbach (Nobel Laureate in Chemistry) and his associates at Harvard and contains experimental studies under mantle conditions verifying that oil-like components are formed and that plant fossil remnants are not required to produce petroleumlike mixtures.

Disagreements remain between the R-U and Western views which have entered the comic circle with the R-U assertion that the joy of finding similar chemicals in plants and oil mixtures has as much force in settling the question as the assertion that ivory keys in pianos verify the descent of elephants from pianos. The discussions continue. I am unaware of major accessible oil resource discoveries resulting from direct use of the R-U model, although it is certain that hydrocarbons have been found in archeozoic rocks (dating to approximately 2.3 billion years ago) which antedate the formation of plant life on earth. It is also certain that hydrocarbons are observed in extra-terrestrial bodies (e.g., meteors, outer planets, etc.) that could not possibly be the results of plant debris. With the R-U model, petroleum becomes a renewable resource which will always be available on our planet.

These discussions have led to special interest for deeper drilling in order to search for oil. A test in Sweden moti-

vated by Gold led to ambiguous results: oil was found at a depth of about 14,000 feet but not in large enough amounts to lead to commercial viability. Those of us who regard the Second Law as the pillar of knowledge it surely is, are more inclined to accept the R-U model than the fossil-fuel idea supported by most of the petroleum specialists in the West. Scientific verification of the Western model requires experimental verification that methane will form higher hydrocarbons under near-surface conditions (e.g., with the help of bacteria or some similar magic) without demonstrating that during the long times that plants have grown on earth, periodic upheavals turned the surface into near-mantle conditions.

Q. What can we do to reduce our dependency on imported and increasingly expensive oil especially now that there is growing evidence that the burning of carbon-based fuels is causing dangerous climate change? Is conservation the best immediate answer? If so, what would it require that we are not already doing?

A. This is the type of question which was extensively examined during the Carter administration following the Arab oil embargo. Then as now, energy conservation was easily identified as the cheapest and best way to go. As an example, consider the transportation sector alone. It is responsible for about 25% of total energy use. By replacing conventional engines with (optimistically) a performance of 25 miles per gallon by hybrids (my 2002 Prius still gives me about 50 miles per gallon when I drive it carefully), we save about 13% of total energy consumption (this number is almost 50% larger than the U.S. reduction of carbon dioxide emissions required by the Kyoto protocol). Of course, there remain many other opportunities for reducing energy consumption by building more efficient systems, reducing energy losses from

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homes, using roof-top solar collectors in sunny climates to produce hot water for home use as was done in Florida more than 80 years ago, etc.

Of the much heralded "new technologies" for energy conservation, limited use of wind energy makes sense in some locations. Unfortunately, photovoltaic power conversion remains excessively costly, hydroelectric power conversion is limited by resource availability as is also geothermal energy production. Wave energy is competitive in only very few locations as in the Bay of Fundy. It is no accident that after about 30 years of the many renewable initiatives proposed during the Carter presidency and periodically supported with government grants, the current mix contains only a few percent contribution from the total collection of these soft technologies. Subsidies for non-commercial ventures have a way of evaporating and contributing little after the subsidies are gone. Biomass as a fuel source sounds interesting but large-scale use will interfere with the world food supply which will probably always have greater priority than energy production. Recent price increases for corn are an early example of the effects of crop diversion for energy production.

It is, of course, clear that the development and implementation of Generation 4 nuclear reactors (which will require at least two decades before substantial contributions to world-wide energy supplies can be achieved) will provide the beginnings of a total solution (with breeder technologies) using passively safe systems in order to eliminate the possibility of calamities caused by human errors, proliferation-resistant technologies to remove the contributions of nuclear energy use to wider applications of nuclear weapons, disposal of radioactive wastes in stable rock strata, etc. Success in building fusion reactors (still nearly 40 years in the future according to insider estimates) should offer the same opportunities. These nuclear solutions merit separate detailed discussions because successful applications will not be resource limited during the likely planetary occupancy by the types of species we see now or their surviving descendants.

## "Star Wars:" The Sequel

Strategic Defense in the Nuclear Age. By Sanford Lakoff. With an appendix by Richard L.Garwin. Westwood, Conn.: Praeger International Security Studies (2007). Pp. 238.

In 1989, when Herb York and I collaborated on A Shield in Space: Technology, Politics, and the Strategic Defense Initiative (UC Press), it seemed as though Ronald Reagan's "Star Wars" program would ride off into the sunset with him. Reagan's supposition that it would make nuclear weapons "impotent and obsolete" was the latest example of what Herb called "the fallacy of the last move" – the notion that one side could gain victory in an arms race by adopting a radically new weapons system, when experience showed that a capable adversary would figure out how to neutralize, copy, or defeat it.

But as the end of the Cold War was followed by renewed fears of nuclear proliferation to "rogue states," the program not only survived but has reached limited implementation in the form of midcourse ground-based interceptors now being deployed in Alaska and California and possibly in Europe. Against such potential adversaries as China, Pakistan, Iran, and North Korea, even Senator Sam Nunn, the Democrats' national security bellwether, agreed that a limited defense could be highly effective. In addition, SDI had acquired a significant political constituency. As one defense analyst noted, "Every company is on notice that if they want to be a long-term player, they can't let SDI get away." Under these influences, moderate Republicans crafted a compromise with the Democrats called the Missile Defense Act, under which 100 ground-based interceptors would be deployed at a single site, as allowed by the ABM Treaty.

When **Bill Clinton** took office, he wanted to put the program out of its misery altogether. When the Republicans gained control of Congress in 1994, he pulled the rug out from under them by cleverly offering to keep the research going so that if it proved feasible, it could be implemented in short order – expecting it would simply remain a research program, at least on his watch. But when **George W. Bush** became president in 2000, he ordered rapid deployment on the ground that the U.S. could not rely solely on deterrence against the "axis of evil." As a result, testing was undertaken and a limited, ground-based system began to be deployed on the west coast.

Because of these developments, when a publisher of a series on defense policy asked me to do a reprise of the issue, I agreed. This new book reviews the earlier program, taking advantage of information and studies that appeared in the intervening years, and brings the story up to date. In it I conclude that the current plan for deployment of midcourse defenses is unreliable, for reasons best explained by Richard L. Garwin, the preeminent authority on defense technology, in a Scientific American article reprinted as an appendix. I also point out that the single greatest lesson of the Cold War is not just that the threat of mutual destruction kept the peace, but also that diplomacy, buttressed by economic challenges and inducements, was critical in stabilizing the superpower arms race and ultimately bringing it to an end.

Strategic defenses, moreover, cannot serve to address the problems now posed by the threat of terrorism. Terrorists can do significant damage, as became evident on 9/11, using only conventional weapons, indeed by turning nonweapons like high-jacked aircraft into lethal bombs. If they should acquire WMD, they are not likely to use them in ICBMs. Strategic defense must therefore be considered as one among a variety of policy options rather than as one that stands alone or can provide a simple or permanent technological fix. To the extent that a strategic defense becomes feasible, it may be necessary, but it is hardly sufficient in itself to guarantee security or maintain peace. \*

## Anecdotage

#### By Sandy Lakoff

"Take my car . . ." The Times of London, a treasure trove of English eccentricity, recently reported the death in a highway crash of a rather unusual car thief. A "contract cleaner" by vocation, he was notorious for going into showrooms, posing as a potential buyer, and driving off with an expensive vehicle, which would later be found spotless at the side of the road with its keys still in the ignition. "He would even take vehicles to the car wash or give them an extra polish before abandoning them." In 2004 he had been jailed for six years for making off with 36 new cars from garages across Sheffield. Altogether he amassed 155 convictions. He was once described by a judge as "the kind of thief you would want to steal your car." His wife finally gave up on him after his last court hearing, saying, "He looked after the cars he stole better than me."

The House of Windsor: In the County Recorder's office to do research on her own palatial digs on Ludington Lane, Connie Mullin Branscomb struck up a conversation with a man at the next microfiche reader. They chatted about efforts to prevent La Jolla homeowners from selling their homes to ethnic and racial "undesirables." "Do you know how that fellow from Salk managed to get around the problem?" he asked. "Which fellow?" Connie asked in turn. It turned out he had in mind Jacob Bronowski, the pint-sized polymath renowned for work in math, biology, and letters. "You were supposed to have two letters of reference," the man said, "and he had only one." "From whom?" Connie asked. "Why, the Queen of England," the man answered. "They made an exception."

#### Why did the chicken cross the road? New Takes by Celebrities

(Passed on by **David Barnhizer**, Cleveland State Law School)

**DR. PHIL**: Let the chicken first deal with the problem on THIS side of the road before it goes after the problem on

the OTHER SIDE of the road. What we need to do is help him realize how stupid he's acting by not taking on his CURRENT problems before adding NEW problems.

**OPRAH:** Well I understand that the chicken is having problems, which is why he wants to cross this road so bad. So instead of having the chicken learn from his mistakes and take falls, which is a part of life, I'm going to give this chicken a car so that he can just drive across the road and not live his life like the rest of the chickens.

**GEORGE W BUSH:** We don't really care why the chicken crossed the road. We just want to know if the chicken is on our side of the road, or not. The chicken is either against us, or for us. There is no middle ground here.

**COLIN POWELL**: Now to the left of the screen, you can clearly see the satellite image of the chicken crossing the road.

ANDERSON COOPER: We have reason to believe there is a chicken, but we have not yet been allowed to have access to the other side of the road.

JOHN KERRY: Although I voted to let the chicken cross the road, I am now against it! It was the wrong road to cross, and I was misled about the chicken's intentions. I am not for it now, and will remain against it.

NANCY GRACE: That chicken crossed the road because he's GUILTY! You can see it in his eyes and the way he walks.

**PAT BUCHANAN**: To steal the job of a decent, hardworking American.

MARTHA STEWART: No one called me to warn me which way that chicken was going. I had a standing order at the Farmer's Market to sell my eggs when the price dropped to a certain level. No little bird gave me any insider information.

**DR SEUSS**: Did the chicken cross the road? Did he cross it with a toad? Yes, the chicken crossed the road, but why it crossed I've not been told.

**ERNEST HEMINGWAY**: To die in the rain. Alone.

JERRY FALWELL: Because the chicken was gay! Can't you people see the plain truth in front of your face? The chicken was going to the "other side." That's why they call it the "other side." Yes, my friends, that chicken is gay.

**GRANDPA**: In my day we didn't ask why the chicken crossed the road. Somebody told us the chicken crossed the road, and that was good enough.

**BARBARA WALTERS**: Isn't that interesting? In a few moments, we will be listening to the chicken tell, for the first time, the heart-warming story of how it experienced a serious case of molting, and went on to accomplish its life-long dream of crossing the road.

**JOHN LENNON**: Imagine all the chickens in the world crossing roads together, in peace.

**ARISTOTLE**: It is the nature of chickens to cross the road.

**BILL GATES**: I have just released eChicken2007, which will not only cross roads, but will lay eggs, file your important documents, and balance your checkbook. Internet Explorer is an integral part of eChicken. This new platform is much more stable and will never cra...#@&&^ (C\.. reboot.

**ALBERT EINSTEIN:** Did the chicken really cross the road, or did the road move beneath the chicken?

**BILL CLINTON**: I did not cross the road with THAT chicken. What is your definition of chicken?

### Emeriti Website

The UCSD Emeriti Association maintains a website:

#### http://emeriti.ucsd.edu

Clicking the NEWS, PROGRAMS & MEETINGS button will allow you to view past issues of this newsletter. The website also provides the constitution and by-laws, lists of members, and minutes of meetings.

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— The Faculty Club —