Chronicles

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Reminiscences: Early UCSD History

Memories of the Founding of UCSD

—by Ellen Revelle

My late husband, **Roger Revelle**, began dreaming about a possible University of California campus here in La Jolla during the 1950's. He had become the Director of the Scripps Institution of Oceanography, which was part of the University, in the summer of 1951. At that remote period, the University had only two general campuses, the original one in Berkeley and the other, UCLA, in west Los Angeles. And, as far as the then Chairman of the University of California's Board of Regents, **Edwin Pauley**, was concerned, that was the way it should remain. Those two campuses, was his firm belief, could be expanded, if the need arose, but there was absolutely no need for any additional ones.

Roger, however, had quite another opinion. He himself, as a graduate student at SIO, had had to follow certain requirements of UCLA, including satisfying its language requirement. There may well have been other things required that were far less applicable to a scientific degree than language. But it was not only the students who were saddled with various University rules. Staff, too, had to put all SIO orders through UCLA, even down to such trivia as paper clips! But UCLA students, of course, did not have to take courses pertaining to oceanography.

When Roger became the Director, this all began to appear not only a nuisance but also rather stupid. He also began to realize that the San Diego area was experiencing tremendous population growth, so that another UC campus in this southern part of the state would become a necessity. And so the battle began.

The very powerful Chairman Pauley, at the first whisper of a possible new campus, made his adamant objection quite clear. An early attempt to block any such action was his suggestion that if a campus were to be built in the San Diego area, it could be built in Balboa Park! He obviously was aware that such a move would be totally impossible. Then his second attack was to try to convince the Regents of the undesirability of a college campus in such close proximity to Miramar Marine Air Base, because of the disturbing noise that would be inevitable. Pauley went so far on that tack as to invite several of his fellow Regents to visit him and his charming wife, **Bobby**, at their place in Hawaii. They owned an 18–acre island just off Oahu, on the Pali side. Not too far away there was a Navy base, where Navy pilots practiced aircraft landings. They normally flew quite low, right over the Pauley's nice swimming lagoon, as Roger and I both knew, having been guests on two occasions at Coconut

Island, and the noise was quite loud. But when the Regents were guests, Pauley managed to arrange for the jets to fly even lower, with their afterburners on. It must have been quite a terrifying experience for his guests!

Aside from these various obstacles being raised by Pauley, Roger realized that there might well be local opposition right here in La Jolla. Quite naturally, since there was already the small SIO campus, an undergraduate campus in its proximity seemed logical to him, but he realized there should be wide support.

Unfortunately, La Jolla at that time had a well-established "Gentlemen's Agreement" that prevented any Jews from purchasing property here. (Mentioned today, one is met with stunned disbelief that this could have been!) But actually, a real estate broker could lose his or her license if found to have made such a sale! This situation, Roger realized, would be untenable if there were to be a University campus in La Jolla. SIO had already had very fine, Jewish senior scientists unable to rent or buy a house locally. So, in order to create local enthusiasm for a possible future campus, he set about talking to any interested group, especially gatherings of UC Alumni. On almost any such occasion, there would be a veiled question, either at the talk or later in a small group, that went about as follows: "Dr. Revelle, if there were to be a campus here, might there be some…ah…people of…ah…that other religion?" I had to persuade him that such a question was bound to be asked, and that he must "keep his cool," perhaps count to ten before attempting to answer, as it so irritated him that the person wouldn't come right out and say "Jewish." He would finally reply that yes, indeed, there undoubtedly would be Jewish professors, who might well have families, too. He would want the students to be widely exposed to various beliefs and experiences, and many of the best professors were Jewish.

His efforts were rewarded, as La Jolla's unfortunate "Gentlemen's Agreement" was finally abandoned. La Jolla has certainly not fallen apart because of this action!

Now back to the airbase noise problem. Roger, aware of Pauley's tactics, devised his own approach. He identified a fairly large number of college or university campuses with closer proximity to airports than the one proposed here on the mesa north of SIO. This land had already, by vote of the people of San Diego, been donated to the University of California for a campus of the University, but establishing that campus would still have to be approved by the Board of Regents.

At a meeting of the Regents in 1956, on the Davis campus, the question of a possible southern campus was to be discussed. **Walter** and **Judith Munk** and I attended this meeting — my only such experience. Roger was called on to make his presentation. Using a large easel, on which he displa yed, one after another, maps showing various campuses and their proximity to airports, while reading off statements from either the college or university president or some other figure of authority. In no case was there a report of any serious interruption of classes!

Then came the most dramatic presentation of all. President **Clark Kerr** read aloud a letter, written to the Board of the Scripps Memorial Hospital by the architect who was designing their new hospital building on the mesa, considerably closer to the Miramar Air Base than was the site of the proposed University of California campus. The letter stated very clearly that there would be no need for the extra expense of double-glazed windows, as there should be no problem with noise from Miramar! As Dr. Kerr finished reading the letter, Mr. Pauley glared fiercely at the poor architect and demanded: "Did you write that letter?" To which came a rather frightened: "Yes, Mr. Pauley."

At that point, one of the Regents, whom I'll always remember fondly, said something to the effect of: "Those people down there in La Jolla have been waiting around long enough. I move we vote to establish a campus of the University of California in La Jolla." His motion was quickly seconded and voted. There were only two dissenting votes — obviously that of Ed Pauley, and of one other Regent.

Originally, the campus was known here as UCLJ — which led to its being called "uckljay." But soon the citizens of the San Diego area decided that since they gave the land, the campus should be UCSD, and so it became — causing frequent confusion when people arriving in San Diego tried to get directions to UCSD.

Before the UCSD campus became a physical reality, with buildings and incoming freshmen students, Roger had already begun recruiting senior faculty members for the possible campus. They were brought to La Jolla as members of a future Institute of Technology and Engineering, which was "to provide graduate instruction and research with the understanding that the Institute later may be converted into one of more departments of instruction and research." They were given offices in buildings at SIO. **Harold Urey** and **Jim Arnold** were two of these stellar scientists who were lured to La Jolla by Roger's vision of how the future here in La Jolla might unfold.

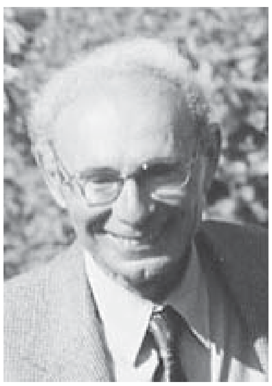
The first class of undergraduates was enrolled in the fall of 1964. By the time of the graduation of that first undergraduate class, the campus had several buildings, including the tall one named in honor of Harold and his wife **Frieda Urey** — a building which, probably before its naming, Harold had pronounced "the ugliest building I ever saw!"

Passions Outside Academia

*And here's another passion described by my old friend, **Manny Rotenberg**, an early physicist at UCSD who did much to develop computer science here before and after he served the campus as Dean of Graduate Studies. His own photography is inventive, quite beautiful, and endlessly beguiling. —ed.*

Photography Over Time

—by Manny Rotenberg



Like many people, I was drawn into photography by kids. **Paula** and I lived in Los Alamos, my parents lived in the east and they didn't like to travel. They didn't like the pictures of their grandchildren that I sent them (they were little better than smudges), so they sent me a top-of the-line camera. Then they complained that the pictures were too small and the next thing I knew a professional enlarger was delivered to my doorstep. I was hooked.

We left Los Alamos in 1969 for Princeton, Chicago, then La Jolla, where the academy succeeded in smothering my picture taking. But retirement provided the opportunity to take it from life-support to therapy and finally to full recovery. I built a darkroom and started to acquire equipment for it when it occurred to me that I was making a mistake. Chemistry was out, digits were in. We needed a storeroom, anyway.

Photography has always been the poor stepchild of the graphic arts. Pigment-on-canvas artists always regarded it as the embarrassing mother-in-law to be locked in the attic. Only recently has it emerged as a legitimate art form, shown in major galleries and museums, but it has been a long, tough, struggle. Paint-art has an ecclesiastic history that allowed it to survive the commercial portrait efforts of the great Dutch and Italian painters. Photography had no such history. The first commercial studio was opened in Paris in 1853 by **Felix Toumachon** (he went under the unfortunate name of "**Nada**") and developed the familiar static poses we associate with old photos — a style forced upon him because of the long exposure times required by the available technology. It was only the work of people like **Matthew Brady** (1860's), **Eadweard Muybridge** (1870's), and **George Eastman** (1890's) that moved the field from simple studio posing to a place of some importance in journalism and science. In 1900 Kodak introduced the Brownie and everyone became a photographer. In spite of its becoming a commonplace activity, artists like **Alfred Stieglitz** (1900), **Man Ray** (1920's), **André Kertész** 1920's), **Ansel Adams**, **Imogen Cunningham**, **Edward Weston**, and **Henri Cartier-Bresson,** to name but a few of the important people of the 1930's, managed to save the field from a kind of electric guitar death. There were some occupational hazards: The French photojournalist **Eugegrave** né **Boudin** was assigned to report on the brothels of Paris. He died of syphilis.

(In addition to his genius in developing photo equipment, George Eastman can be credited with two memorable quotes. "You push the button, we do the rest," and, "My work is done. Why wait?" He then shot himself. This was in 1932.)

While photography does not involve the intellectual discipline and training of mathematical physics nor does it have to undergo the intense scrutiny of academic review, it does have its own demands. Like paint art, art photography has to be interesting to the photographer and to the viewer. At Los Alamos my main subject matter (in addition to the kids) was the beautiful, stark landscape of northern New Mexico, but I had had enough of landscape shooting. My first foray after retirement was street photography. I would go to street fairs and malls and shoot people drinking coffee or eating or talking on cell phones. The best shots were of people trying to do all three things at once. I would usually approach my subject , announce what I was doing, ask if it was OK. Upon approval, I would ask to be ignored. I would then walk away and return when the subject had forgotten about me. I would tell the subject that the picture may appear in a show, and there seems to be universal interest in being exhibited. I have been rebuffed only a couple of times. Is it legal to shoot someone surreptitiously and then exhibit the photo? Yes, because one has no reasonable expectation of privacy when outside. So be careful out there.

But photography eats ideas voraciously. What next? How about portraits? A friend suggested a project, "Double Take." Take a few dozen shots of a photogenic person, let him choose the one that he deems mostly represents him and I choose the one that I think is best. The pair of shots is shown simultaneously. The viewer knows what the game is but not who chose which photo. I have now assembled about twenty of these pairs. I pitched it to the Atheneum and they accepted the project but the space was not adequate for forty or fifty large pictures. I am still waiting for the proper venue. With one exception, all the people I asked to sit for me were more than willing to do so.

Arthur Wagner was one of my "Double Take" victims. One thing led to another and with his help and that of **Steve Adler** and **Walton Jones** of the Department of Theater and Dance, I began to shoot the plays of the MFA students. I chronicle the development of the performance from the initial table reading through to the dress rehearsal. The collection of shots then form the subject of an exhibit in the Department reception area and the archive for the play and its performers. The wonderful thing about shooting actors is they know how to behave on front of the camera and they are all photogenic.

Shooting dancers presents a special challenge. Much of the beauty of dance is in the movement, so aesthetically there is a clash when you confront dancers with a still camera. There is a critical moment that has to be captured when the action peaks, but it is very fleeting and often missed. Both the acting and the dance faculty have been marvelously cooperative in helping with this project and they all have my gratitude.

I have recently been shooting the dance sequences for Bizet's opera, *The Pearl Fishers*, which the San Diego Opera is putting on next month. This is not one of Bizet's best moments, but I can tell you that the dancing is easily worth the price of admission.

Photo: Arabesque, M. Rotenberg

Mark Your Calendar!

Wednesday, April 14
4:00-5:00 PM
Price Center Davis/Riverside Room

Maarten Chrispeels

"Organic Produce or Genetically Engineered Crops: Do We Need To Choose?"

Maarten Chrispeels, a member of the Division of Biological Sciences, is an internationally recognized plant physiologist who has used molecular genetic approaches to understanding at the molecular level what controls the flow of water into and within plant cells. More recently he has embarked on understanding the mechanisms of plant resistance or susceptibility to insect pests, a problem of major global importance. Professor Chrispeels has played the leading role in recruiting an outstanding faculty in plant biology on our campus. He is the editor in chief of the journal *Plant Physiology* and his fundamental contributions to the plant sciences have been recognized by his election to the National Academy of Sciences.

Editor's Note

My face is red and my spirit laid low by ***Ralph Lewin****'s note about my stupid bibliographical error in the previous issue of* ***Chronicles****. Ralph's extraordinary book,* Merde, *was published by Random House in 1999, not by Harvard University Press in 2003. Copies of the book are on sale at the Friends Resale Shop at the International Center for the reduced price of $10.00, wholly for the benefit of the Friends of the International Center's graduate-and-undergraduate scholarship fund.*

Leonard Newmark

How My Field has Changed Since I Began

*I don't remember **George Backus** as a fellow student in the College of the University of Chicago in the 1940's. When I arrived at UCSD in 1963, George had been long-established as a geophysicist at SIO, so it was only later that I came to appreciate his extraordinary intelligence and wonderful collegiality.—ed.*

In Remembrance Of Geophysics Past

—by George Backus

Remarkable improvements in computational hardware and software and in the variety and sensitivity of measuring instruments have made the last half-century exciting in almost all of science. Geophysics is no exception. When I entered the field 50 years ago, theoretical modeling of earth phenomena was very rough and approximate. Theory was carried out analytically, and tractability required that problems be greatly simplified. (A famous satirical physics problem begins, "Consider a spherical cow....") Numerical computation was possible but so laborious that it, too, required severely simplified models. Data were sparse and inaccurate because there were no satellites or global networks of instruments, and many modern statistical techniques needed for handling those data were still in the future.

Two geophysical discoveries of the last 50 years seem to me particularly interesting: the acceptance of continental drift and sea-floor spreading; and the recognition of the origin and reversals of the global magnetic field. Rather than try to give a broad overview of 50 years of geophysics, I shall describe living through these two discoveries. One of their most interesting facets is that in the end each was the key to understanding the other.

Since very little of my own work was on continental drift, I will begin with the geomagnetic field. When a magnetized needle is suspended at its center of gravity so as to rotate freely in all directions, it points more or less north-south and also, except near the equator, either above or below the horizon. Thus such a dip needle establishes a magnetic direction at each point on the earth's surface. The horizontal part of this direction was probably known to the Greeks, and was used by the Chinese around 1000 A.D. to estimate north at sea. The vertical part was measured by navigators in the sixteenth century.

In 1600 **William Gilbert**, the personal physician to Elizabeth I, had enough data to publish a book noting that the distribution of magnetic directions on the earth's surface was approximately that of a north-south axial dipole. Such a "dipolar" distribution of the field could be produced by a very small bar magnet at the center of the earth or by a uniformly magnetized sphere of any size, inside and concentric with the earth. Before Gilbert many people thought that compasses were somehow attracted by the North Star.

In the 17th century it was noticed that there were significant deviations from the dipolar pattern and that they changed with time. (The direction of magnetic north in London changed by 30 degrees in 200 years.) Sir **Edmund Halley**, eponym of the comet, observed in 1701 that maps of these deviations drawn at different times seemed to change shape slowly and to drift westward at a rate that would carry them once around the earth in something like 1000 years. (By way of comparison, weather maps change shape and drift eastwards, but at a much faster rate, once around in a few weeks.) Halley suggested that the "dipole" found by Gilbert inside the earth moved relative to the outer surface. This was the first evidence for a core inside the earth that moved beneath a solid outer layer (the solid mantle). In 1906, **R.D. Oldham** showed that there was a spherical region inside the solid earth that propagated only seismic compression waves, not shear waves. By 1914 **Beno Gutenberg** had seismically measured the radius of this presumably liquid core to be 55% of the radius of the whole earth.

Various astronomical evidence suggests that the liquid core is mostly iron. Liquid iron, however, cannot be permanently magnetized. Why does the earth have a magnetic field? In 1919 Sir **Joseph Larmor** proposed a promising mechanism. Molten iron is an electrical conductor, and when a fluid conductor flows in a magnetic field, the field induces electric currents in the fluid. Perhaps one can arrange the geometry so that these electric currents are exactly those needed to sustain the field. Such a bootstrap process is known to work in ordinary electric generators, or dynamos, where the self-regeneration is made possible by an ingenious combination of wire windings and sliding electrical contacts. Car batteries are charged by such dynamos. The question was whether self-regeneration could be produced in an electrically conducting fluid by complicating its motion instead of its topology. In 1934 **T.G. Cowling** found a disappointing partial answer: there could be no self-regeneration if both the fluid motion and the field remained unchanged by all rotations about one particular axis of symmetry.

For several years it was thought that Cowling's theorem might be a special case of a more general result that would rule out fluid dynamos altogether. After WWII, Nobelist **P.M.S. Blackett** proposed adding to Maxwell's equations an extra term to generate magnetic fields. Meanwhile, following a suggestion of **Walter Elsasser**, some workers tried to use computers to model non-axisymmetric fluid dynamos. In those days computers were too small to handle the required fine scales of fluid motion, and more recent work has shown the old computer models to be so inaccurate as to be wrong. In 1958, **Arvid Herzenberg** and I independently mustered enough *Sitzfleisch* to produce mathematically rigorous examples of non-axisymmetric self-regenerative fluid dynamos in spheres. We had to invent and specify motions for our purposes, an essentially unphysical procedure. Modern computers can model fluid dynamos in which one specifies the core heat sources that drive convection. The computer calculates both the magnetic field and the fluid motion. It is not implausible that such a fluid dynamo could reverse itself, and indeed these numerical models do sometimes reverse direction (see below). The subject is still very active, and there remain disputes about what drives the convection and how to use satellite measurements of the magnetic field to observe the fluid motion in the core.

The question of the origin of the geomagnetic field is largely theoretical and computational, but there was also a very interesting empirical issue: whether the whole field reversed from time to time. In 1906 **Bernhard Brunhes** observed rocks in France and Italy magnetized oppositely to the direction of the present field. Others found the same thing in Japan, Siberia, and Australia. In 1963, **A. Cox**, **R.R. Doell,** and **G.B. Dalrymple** used radioactive decay to date geologic columns of lava going back 4 million years, and showed that there were several magnetically reversed layers that were contemporaneous at many sites. This convinced most people that reversals were real, but skeptics remained until the second revolution, that of sea-floor spreading and continental drift.

The idea of continental drift was first suggested by 16th century geographers who noticed that the east coast of South America fits with the west coast of Africa. In the early 20th century **Alfred Wegener** added some geological fits to support the idea. Drift met with serious doubt, partly because the evidence was slim and partly because of the respect enjoyed by the eminent geophysicist **Harold Jeffreys**. He argued that seismically plausible compositions of the mantle made it too strong to permit a continental raft to plow through it. Moreover, as Jeffreys pointed out, the coasts of Africa and South America did not really fit all that well.

The question was resolved unexpectedly by geomagnetism. In 1962 **R.G. Mason** and **A.D. Raff** found very coherent, more-or-less north-south trending, stripes in the pattern of magnetization of the sea floor off the west coast of the US. The stripes were 20-30 miles wide and several hundred miles long, with discontinuous breaks at three east-west trending faults. The discovery was made here at the Scripps Institution of Oceanography, but none of us understood it. **Vic Vacquier** came the closest. He observed that the magnetic patterns just north and just south of one of the east-west faults could be made to match by shifting one of them several hundred km along the fault.

Magnetic stripes, magnetic reversals, and continental drift were united in one remarkable insight by **Drummond Matthews** and **Fred Vine** at Teddy Bullard's Geophysical Laboratory in Cambridge, England. I was there on sabbatical in 1963, at the regular afternoon tea, when Drum and Fred, his student, came in with their proposal. They had found magnetic stripes parallel to the mid-Atlantic Ridge running through Iceland, and the stripe patterns were mirror-symmetric across the Ridge. Their explanation was that the earth's hot, viscous mantle rose up and spread out eastward and westward on the surface at the Ridge. As it cooled, it became permanently magnetized by the contemporary geomagnetic field. Every few hundred thousand years the field would reverse, producing two oppositely magnetized stripes, one on each side of the Ridge. This picture involved the confirmation of three hypotheses at once: sea-floor spreading at the ocean ridges, convection in the mantle, and magnetic reversals. In 1965 **Teddy Bullard**, **J.E. Everett** and **A.G. Smith** resolved Jeffreys' objection about the poor fit of the South American and African coasts by observing that the fit was excellent if one used the edges of the continental shelves instead of the coastlines, the latter being an accident of the present-day sea level. Jeffreys' other objection was met because the continents did not plow through the mantle. They were carried along on its surface.

Vine and Matthews convinced the geomagnetists at once, but seismologists waited a year until they could confirm that on the "transform faults," where the earth's crust was broken and two pieces slid past one another, the earthquake sources had the predicted geometry. This seismic confirmation and the coastal fit may have been what led **Bob Parker** (then and now at SIO) and **Dan McKenzie** to invent plate tectonics.

Geomagnetism and plate tectonics remain very active fields. They continue to profit from new physical, chemical, and geological data, from advances in numerical fluid mechanics and, most of all, from new ideas. Workers in both areas seem much less confused than we were forty years ago. Nevertheless, I feel lucky to have had the chance to be confused.

*In response to my request for an article from physicist emeritus **Bob Swanson** regarding his passion for woodworking , Bob begged off for a while, but offered instead this erudite article resulting from his new-found involvement with his Scandinavian heritage. — ed.*

The Dala Horse (Dalahästen)

—by Robert Swanson

If you were at a Scandinavian Christmas party, you might come away with a little Dala horse that is one of Sweden's better known symbols and a fine example of Swedish folk art. There is archeological evidence of horses in Sweden as far back as 4000 B.C., probably brought there by nomadic people from Asia and Europe. Horses represented so much power that they were part of ancient religious practices, found their way into Swedish mythology as the "water kelpie" (Bäckahästen) in the Skåne region, and became part of Christian religion with St. Stephen (Staffan) the patron saint of horses. There are "Staffan" songs and "Staffan" traditions in many Swedish provinces.

The whittling of horses or of household objects with horse themes goes back many centuries, but really took hold in the province of Dalarna in the early 19th century. Horse carving as a commercial craft was a way to eke out an existence in a marginal economy. The prominent villages where horses were carved were Bergkarlas (the early horses were known as Bergkarlas horses), Risa, Vatnas, and Nusnäs, all along the lake Siljan shore east of the city of Mora. Mora was an important center for furniture manufacture. Some of the early horses were carved from scrap left over from furniture making; later, tree trunks were cut in 6-inch-long slices called "kringlor," which became the most common height for a Dala horse. The kringlor were split into four straight pieces with wedges. Some kringlor were cut in pie shaped wedges, which gave rise to a style of horse with a narrow head. The horse shape was roughed out with sharp axes, the wood between the legs was removed by drilling with brace and bit, and the final details done by whittling. The carved wood was allowed to dry for a few weeks before the horse was painted. This was the archetypical cottage industry, which could be carried out on any farm. It was often the case that the manufacture of horses was done by a member of the family who, because of age or some disability, was unable to take part in any of the usual farm work.

Dala horses were produced in such quantities that traveling salesmen or people making deliveries of furniture or other products would take along some horses to sell. They were small and could easily fit in unused spaces. In time, the horses became a sort of currency which could be used by travelers to pay for food, lodging, or hay for the live horse pulling the wagon.

Moving into the 20th century the axes were replaced by band saws, the homemade paints with red lead pigment were replaced by less toxic paints. The brushes, made by stuffing hair from the tails of squirrels shot during the winter into the hollow quill of a chicken feather, were replaced by dip painting of the base coat and manufactured brushes for the ornamentation. One thing that survived was a technique attributed to **Stika Erik Hansson** of painting with two colors on the brush at the same time.

Most of the Dala horses are the typical stocky, stiff-legged animal with orange base color taken from the original red lead pigments of old. But not all. Many of the early carvers and painters exhibited considerable artistry in their work. However, in most cases it was considered such a common skill that they did not sign or otherwise identify their work as artists commonly do. Many beautiful and unusual horses still survive from the 19th and early 20th century which cannot be attributed to a particular artist. On the other hand, the delicate and lifelike horses of **Jones Anna Ersdotter** and her son **Anders**, **Jemt Olov Persson,** and **Anders Zorn** are readily identified and sought after by collectors.

The Dala horse has had its stage debut. In 1940, satirical writer and stage artist **Karl Gerhard** produced a musical *Gullregn* (Gold Rain), which featured a Trojan horse in Dala décor, so large that it could hold inside six ballet girls in lederhosen and hats. From the horse's fifth (!) leg — i.e., the fifth column — Karl Gerhard stepped out and sang his famous song about "the notorious horse from Troy which has always been called *Mein Kampf*." You should appreciate the pun: the Swedish title of Hitler's book is "*Min Kamp*" and in Swedish *Kamp* can mean either 'fight' or 'horse.' This outraged the German emissary in the audience, who protested to the Swedish foreign minister. The song was forbidden to be sung, which caused Gerhard to go on stage each evening and, in its place, read the resolution about the ban! He continued to sing it at private performances, and after a couple of months the horse (provided with a muzzle and a nightcap) and Gerhard returned to the stage with an alternative, but still offensive version of the song.

Collections of Dala horses can be found in the villages around Mora, in the Gavle Museum north of Stockholm, and in Nordiska Museet in Stockholm. More about Dala horses can be found in the book *Wooden Horses of Sweden*, by **Anne Marie Radstrom**, which was the principal reference for this page and can be ordered from the American Swedish Institute.

Reminiscences: Early UCSD History

*This is the continuation of **Lea Rudee**'s account of the history of engineering at UCSD in which he played a large part.*

The Beginning of the School of Engineering at UCSD: A Personal Perspective #2

—by M. Lea Rudee, Founding Dean

During this period *[of renewed campus building —ed.]* a consortium of semiconductor companies initiated a state-by-state competition for a major university/industry laboratory that was to be called the Microelectronics and Computer Technology Corporation or MCC. **Dan Pegg**, who was then the Executive Director of San Diego's Economic Development Commission (EDC), got San Diego identified as California's nominee. The EDC controlled a significant amount of city-owned land near the campus and a choice site was committed to MCC if they came to California. San Diego's selection was hotly contested by UCB, who were less than helpful in the state-by-state selection process.

California was unprepared for the kind of intense coordinated effort it takes to win one of these competitions. For example, after much pleading the then governor, **George Deukmajian**, made a brief appearance at the one-day site visit that was held in University House. He made a short canned presentation and declined to take any questions. Chancellor **Atkinson** did not interrupt a one-month research leave in London to attend. President **Saxon** was as helpful as he could be and was in attendance for the entire site visit.

When the site visit team went to Austin, Texas, they were met at the plane by the governor, the president of the university, and a team of leading state and university officials. The governor spent the day with them. Texas made a strong offer, both economically and politically, and MCC remains active in Austin. It is often credited in being the key breakthrough in creating the high tech concentration that now exists in Austin.

California and UCSD learned from this experience, and when a similar competition for a fusion-energy research and design center (ITER) occurred, a well coordinated full-court press got the project to San Diego. Unfortunately ITER had technological problems and the US terminated its participation in a few years and ITER had little, if any, impact on the local economy.

Perhaps as a consolation prize, what is now Engineering Building I (EBUI) was made the top of the building projects queue in the governor's budget and was given a budget for "fast track" design and construction. It was the first large building constructed at UCSD in about a decade and would rival Geisel Library in size. It was also the first building to be built under the then new policies of energy conservation.

As large as it was to be, it could not house all of engineering. The decision was made to leave computer science in AP&M (Applied Physics and Mathematics), since it did not need the heavily serviced, specialized laboratory space that was to be included in the new building. It was designed in about half the normal time by the local architectural firm of BSHA and Earl Walls Laboratory Design Consultants. The initial site selected was on the south side of Warren Mall where the classroom building and the Literature Department/Warren Provost are now located. I was chair of the Building Advisory Committee. When I returned from a two-week vacation I found that soil samples during that time had given preliminary evidence of a fault on the initial site, and the building was relocated to its present site. Later testing showed that the fault was a false alarm, but by then we could not change back.

The south facing location made achieving the energy conservation goals more difficult and special consultants for energy efficient design were included on the design team.

The triangular footprint of EBUI is due to the then road system. The west-facing slope in both EBUI and CMRR were planned to coordinate with the Geisel Library's unique design and role as campus icon. A less obvious feature of EBUI is that it was designed so that the basement and first two floors of the eastern section are very vibration free. To achieve this we added a much more rigid structural system and an isolation joint to separate the east and west sections. Both of these are visible from the front of the building. The state instructional equipment budget for EBUI was the largest the UC had ever received.

When EBUI was first constructed it seemed way out of scale. This changed when more buildings were added to Warren Mall, particularly EBUII. Indeed when EBUII was completed it was nominated for an award, called an Orchid, in a juried competition run by the San Diego AIA. When the jury visited EBUII, they instead chose EBUI, which had not been nominated. When I represented the University at the awards ceremony, the AIA's calligrapher was still confused and the award certificate listed the incorrect building.

Even though they were combined in a single department, there was little interaction, and some friction, between the Electrical Engineering (EE) and Computer Science (CS) groups. There were no faculty members whose subdisciplinary emphases bridged the two groups. Since they were going to be geographically separated too, the CS faculty felt they would be better served as a separate department. At that time it was not obvious what was the best way to organize CS and EE. For example, there were separate departments at Stanford, but combined ones at Berkeley and MIT. After much deliberation and negotiation it was decided to separate, but to add a jointly administered Computer Engineering degree program. Each of he new departments committed to hire faculty to collaborate on the new curriculum. It is interesting that, despite the intellectual gap between them, each group wanted to retain some of their former names – CS became CS**E** and EE became E**C**E. The development of CSE was helped by the addition of an endowed chair by **Irwin Jacobs**, it was one of the very first endowed chairs on the general campus.

Just before EBUI was completed, I was chatting with the late Provost **Pat Ledden**, who was then Assistant Chancellor. He mentioned that one his major problems at the time was that the Stuart Collection plan to put a neon sculpture by the world famous artist **Bruce Nauman** around the top of the Mandell Weiss Theatre was meeting stiff resistance from the surrounding neighborhood. I suggested the Powell Structural Systems Laboratory as an alternative. Nauman came to the campus and was immediately taken with the Powell Laboratory. He said that if he had designed a building on which to site his work, this is the building he would have designed. **Hegemier** and **Seible** were accommodating, provided that none of the radio frequency emissions from the neon would interfere with their work, and that the lab had a cutoff switch so they could turn the light off during late night tests when it might interfere with their measurements. Both conditions were met and the installation resulted in a photograph of the Powell Lab being on the cover of *Art in America*, surely a first for an engineering building.

After the *Snake Path* was installed as part of the expansion of the Library, **Hugh Davies**, the director of San Diego Museum of Contemporary Art, commented to me that leaving Engineering I at dusk, when Nauman's *Seven Vices and Seven Virtues* is turned on and **Alexis Smith**'s *Snake Path* is still visible, is "the best display of public art in America."

The AMES Department added more traditional engineering majors, and enrollments all across the Division grew. This led to the addition of additional faculty. We soon justified another building, Engineering II. The design team was challenged to build a building at an inflation-adjusted cost of 80% the cost per square foot of EBUI. For EBUII a nationally prominent architectural firm was hired, ZGF, and **Bob Frasca**, the F in ZGF, played a key design role. Many ingenious ways were found to keep the costs in line without compromising the comfort or functionality of the building. Before EBUII was completed, ZGF won a top award from the national AIA, and renderings of EBUII joined other exhibits in the AIA display gallery, called The Octagon, in Washington, DC. It is also featured in a book about the work of ZGF. EBUII was nearly completed when I left the Dean's office and the dedication took place early in Dean **Robert Conn**'s tenure.

I announced my intention to end my term as Dean in early Fall of 1992 but Dean Conn was not in place until January 1 of 1994. During this transition period, several administrative changes occurred – the name "Division" was changed to "School," the bioengineering group was established as a separate department, and the **Walter Zable** Chair was established for the occupant of the Dean's position. This was approved at the last Regent's meeting before Dean Conn arrived, so I occupied the Zable Chair for only a few weeks.

During my time as Dean, the faculty grew from over 44 to over 102. It shrank right at the end to just below 100, since one of the state's periodic budget crises led to a hiring freeze. The national visibility of our programs and faculty grew at an even higher rate and UCSD emerged from the sidelines of American engineering education to a nationally visible major force.

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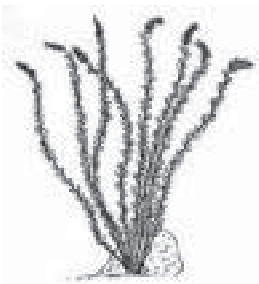
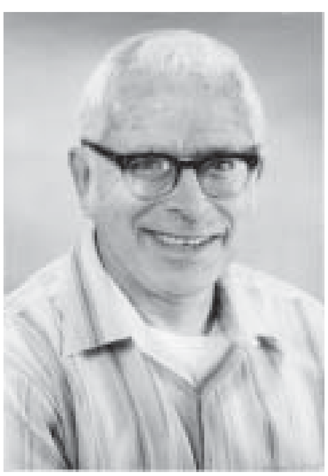


April Flowers

RETURN SERVICE REQUESTED

President's Report

—by Murray Rosenblatt



I am a member of the American Association of Retired People (AARP), though it is not clear that I'll renew my membership when it runs out. In this respect I'm depressed by reading an article in the issue of their *Bulletin* of December 2003, which gently tries to persuade one of how proper AARP's backing of the national administration's Medicare bill was. They admit that the legislation which runs to 681 pages in print is confusing and can be interpreted in many different ways. There is a "demonstration project" to allow competition between traditional Medicare and private plans — with additional subvention for the private plans. Various of the benefits are, it is claimed, to be determined in terms of income and assets. How this will be implemented is not clear. For salaried people it won't be too difficult to determine income. But considering the concerns with secrecy and confidentiality exercised by people with other resources, one suspects that the bill will hit hardest the people the plan claims to help — those with few resources. The great claimed advantage of the plan — funding for a drug benefit — is spotty and uncontrolled, given the government restriction of Medicare's ability to negotiate drug costs. It looks as if the drug costs will escalate because of the drug industry's clout with the current administration. Since the bill will be first implemented in 2006, its full consequences won't be clear until then, conveniently after the 2004 election.