Medical Adventures in Latin America—SLAC Employee’s Daughter

One of the many non-scientific conditions which makes life interesting at SLAC is the cosmopolitan atmosphere brought about by the number of languages spoken in addition to English. It is not uncommon to hear French, German, Hebrew, Spanish, or even Russian spoken here, but probably the most often spoken of these is Spanish because so many of the employees have a Latin heritage or a great interest in Latin America. Vacations in Mexico or Central America and South American have become increasingly popular, and a bare mention of interest in such a trip is usually enough to bring forth a number of people in any department who have been there and who have suggestions how to make the most of it as an experience of their own.

This enjoyment of vacation time with our Southern neighbors is not just a SLAC phenomenon, for we are almost in the middle of the Bay Area but far from the interest in Mexico; Californians who travel to the South are only outnumbered in the United States by Texans.

Alicia Wilmunder (right) and her partner from Florida make up a typical Amigos Team in front of their shack in Izalco, El Salvador.

With all this interest it is not surprising that some more permanent ties have been made from the Bay Area to Latin America. One such is the Town Affiliation Association which helps communities here “Sister Cities” outside our country. On September 10, 1973 issue of BEAM LINE (page 40) Examples of Sister Cities are Palo Alto and Guanajuato, Mexico; San Jose (California) and San Jose, Costa Rica. Such city affiliations make it possible for citizens and officials to communicate and discuss common problems and their solutions, exchange students for visits and study, and just get to know one another as people.

A typical day includes taking care of those who came into the clinic (above), and bringing immunizations directly to those who live in homes in the outlying barrios such as this one (below).

Another organization providing medical help is called “Amigos de las Américas.” This group, consisting of about 600 teenagers and their professional trainers and advisors, provides medical help to Guatemala, Honduras, Nicaragua, Colombia, Ecuador, and Peru during nine weeks of our summer. Unlike the Amigos’ primarily surgical program, the Amigos’ program is primarily preventive. Young people 18 years or older must undergo over 100 hours of classroom work in English, Latin American history and culture, and medicine. At the end of their training they are made into teams of two or three and placed in villages in the six countries where they set up clinics and provide immunizations for diseases and parasites. Each team provides these services for three weeks and then returns home when replaced by the next team. These same teams provide nine weeks of services to each village during the summer. The following year new areas will be selected in each country and appropriate immunizations provided until each country has been fully covered.

I first encountered the Amigos while driving with my family in Guatemala. We were visiting the Indian community of Chichicastenango on market day, and were much surprised to see a long line of Indians in their colorful ikate costumes. The line started in the middle of the market square and continued for half a block where it ended at a cord table attended by three neatly dressed girls, each with a red, white, and blue badge carrying the words “Amigos de las Americanas” on her lapel. I was preparing hypodermic syringes, one was questioning each person at the level of the line, and the third was giving each a shot in the arm and a drop on the tongue from a medicine dropper. They were far too busy to talk to us then, but late in the afternoon they had to stop when they ran out of materials, so we talked with them as they were folding up their table and carrying off their equipment. They had been there since dawn and in that time had given a thousand injections for D.P.T. and polio immunizations. It was just another day in the life of the “Flying Samaritans.”

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SLAC

Job Openings

The following job opportunities are currently available at SLAC and have been approved for internal placement. Interested SLAC employees should apply directly to their appropriate supervisors. Applications must be submitted through the BEAM LINE does not necessarily correspond with the formal posting periods.

PSPE Technician I - Applicant will be solely responsible for maintaining the electrical and electronic equipment. Applicant will be required to act on problems that arise, advise in emergencies, and ensure verification measurements to ensure transmissibility which is certified by the Department of Standards. Make participation measurements. Will involve assembling the component devices of measurement systems in configurations desired for the established standard test procedures. Will calibrate high accuracy DVM's and perform tests and repairs when handling is indicated.

SHIFT: Days
SALARY: $841-972
REQ No: 8961
Position

PSPE Technician II - Applicant will maintain all types of electronics equipment including high power pulse modulators, high power r.f. amplifiers, high power amplifiers, regulated power supplies, low level output equipment.

SHIFT: Day
SALARY: $910-1025
REQ No: 8808
Position

Maintenance Person II - Applicant will be required to maintain various items such as: electrical systems, computer systems, and maintenance systems. Assist in performing duties which may include the operation of computer equipment. Applicant will be responsible for the electrical equipment in the plant. Applicant will also be responsible for maintenance of all construction equipment.

SHIFT: Days
SALARY: $794-942
REQ No: 7925
Position

Machinist III - Applicant will be required to perform various tasks such as: machining operations, layout work, electrical work, and assist in performing electrical work. Applicant will be responsible for the maintenance and operation of the electrical equipment in the plant. Applicant will also be responsible for the maintenance of all construction equipment.

SHIFT: Days
SALARY: $842-1055
REQ No: 7926
Position

Office Assistant III - Applicant will perform clerical responsibilities for determining procedures and methods of work. Applicant will be responsible for the operation of computer equipment. Applicant will also be responsible for the maintenance of all construction equipment.

SALARY: $807-974
REQ No: 7913
Position

Two other jobs available within SLAC are for a Secretary and an Office Assistant.

Adventures in Latin America

(continued from front page)

I saw my 15 year old daughter, Alicia, in exasperation with the girls from the Amigos team, but I was unable to help without the role of the leader. I asked her if I could stay to find out if there was a local chapter she could join. The nearest one was in San Mateo, and I soon found myself making the weekly trip to her classes. Although I initially intended to stop by after school, I quickly picked up the class plan and was over. I made the mistake of staying one evening and arranged a visit to the program. Imagine yourself with a group of 50 young people, all of whom have already spent the day in school, and an evening trip to her classes. Although I only intended to attend for a couple of weeks, I found it beneficial to the program.

Contact the Employee Relations Office (ext. 2305)

If you are interested in any of these positions.

SLAC Joggers Take Note

What's the best way to run a race? Start slow and give it all you've got in the "stretch." Or, start fast on the stretch, but you'll never catch us. These questions have been answered mathematically (believe it or not) by Professor Joseph Keller of the Courant Institute of Mathematical Sciences, New York University, in an article appearing in the September 1963 issue of "Physics Today." By using some fairly simple equations, including Newton's second law of motion and a mathematical representation of the energy lost by a runner during a race, Professor Keller was able to derive a theory of running which was also able to give all the world's current track records, from 55 meters to 10,000 meters, with an error of no more than 1.3 percent.

We won't go into the mathematical techniques employed, but some qualitative results are interesting — and nearly sound planning is to enter next year's SLAC Long Distance Race.

First, the theory predicts that the strategy to be employed in short races is drastically different from that of longer races. For distances longer than 320 yards, one should accelerate as hard as one can for one to two seconds (the exact time depends upon the distance to be run) and then run at a constant speed until a second or so before the end of the race, slowing down somewhat at the very end.

Thus it appears that one might do to save energy for a faster speed in the stretch, but rather get through the beginning and try to maintain that speed for essentially the rest of the race.

This result is, of course, one of the reasons of the race, wishing to go a certain distance in a minimum amount of time. It should be used up shortly before the end of the trip.

Any comments, joggers?

Electrons May Someday Help Dig Subway Tunnels

Machine-gun-like bursts of electrons may someday be used by engineers to dig high-speed rail tunnels for high-speed railway systems. Using electron beams, researchers at the Lawrence Berkeley Laboratory are examining the idea.

The concept, which sounds like the science fiction "Star Wars," involves a "laser accelerator" with a special nozzle. Beams of electrons, with energy levels sufficient to deflect electron volts, would be aimed at solid rock. Fired at a rate of hundreds of times a second, the beam would be aimed along the track and forth along a stream of water out of a fire hose, pulverizing large sections of the track. The pulverized rock would fall to the bottom of the tunnel as dust and sand and literally be sucked out.

According to Richard W. Lynch, an engineer at LBL's Advanced Accelerator Design Group, "Developing the concept is a technological challenge, but not impossible." He added, "We have reason to hope this process would be less expensive than currently available excavation techniques, but much more work needs to be done before we can make a positive prediction."

Sponsored by the National Science Foundation and administered by the AEC Laboratory's Energy and Environment Program, the research project is directed toward satisfying national needs for more rapid and economical underground excavation. For example, some transportation authorities are now discussing the possibilities of developing a high-speed system to connect a state with a neighboring state. A tunnel for such a train might be hundreds of miles long, if San Francisco to Los Angeles, or from Washington, D.C. to Boston. More rapid excavation techniques might make such projects feasible.

Other major projects which might benefit from such a high-speed system include mass transit systems and underground utility lines and gas pipes.

A prototype is already scheduled by a small company in association with commercially available electron accelerators. at the Lawrence Livermore Laboratory, indicates that an intense electron beam of modest energy produces a significant cratering effect in granite, limestone, basalt and sandstone. It was also noted that the effect is greater in granite, which is fortunate because most underground rock is arthritic with water.

Early trials showed that the very intense burst lasting one-twentieth of a second would remove about two cubic centimeters of granite, leaving a shallow crater a millimeter deep and about two inches in diameter.

Accelerators required for an annual excavation system could be as many times more powerful than the machines tested at Livermore. The most significant technical advance required, however, would be the ability to fire hundreds of pulses a second.

SLAC

Lynch Named to Faculty

Avron L. Benaroya, director of SLAC's Accelerator Division and an experimental particle physicist, has been named a faculty member of the University of California at Stanford.

"We hired a committee of architects!"

This very high speed picture shows pieces of rock being exploded out of a block of granite after being bombarded with a single intense burst of inelastic electrons for only one twentieth-second. The electrons created an intense pressure with the rock which not only disintegrated the block but also blasted out the side of the rock where the electrons entered, but the pressure wave also traveled to the left side as well. (Photo courtesy of LBL)
NOTE TO MEMBERS OF THE SLAC FAMILY FROM PIEF IN SWITZERLAND:
This is the first time I have been away from Stanford at Christmas time for fourteen years. It is good to learn here at CERN about the progress and methods of the High Energy Physics institutions in Europe, but it is even better to find that SLAC is regarded as a truly great laboratory by all. I am also pleased (but not surprised) that SLAC runs even better when I am not there. With many thanks and best wishes for a great Christmas and peaceful New Year.

SEASON'S GREETINGS -- A computer crossword to you from Dave Gustavson in Group F.

HOLIDAY GREETINGS!
COME TO OUR SPECIAL LUNCHEON AND PARTY
Thursday December 20, 1973

11:30-12:30 Luncheon - In SLAC Cafeteria, $1.50 per person
Menu - Turkey with dressing and cranberry sauce -or- Roast beef
plus
Salad, mashed potatoes, vegetable, roll & butter, coffee, and
Cake - or - mince or pumpkin pie

The Palo Alto High School Madrigal singing group will be in the cafeteria singing
Christmas selections from about 11:45 to 12:15.

12:30-1:00 Christmas caroling and special songs for all (who fit) in the SLAC
Auditorium. The "Madrigals" will sing special numbers, followed by
a soprano duet of Henry Purcell's "Sound the Trumpet." Then the
whole SLAC chorus (everyone in audience) are invited to join in
singing favorite Christmas carols.

1:00-1:30 Cookies and punch in the Breezeway --
Christmas greetings from Sid Drell
Drawing and prizes --

(Please print)
NAME ________________________________

DEPARTMENT __________________________