



Spring 2013

Volume 2

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EX-Ls EXPRESS – Winter 2013

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Bob Birge – 2002	Virginia Cherniak - 1986
Per Dahl - 2001	Bill Bigelow - 1985
Tom Beales – 2000	Ted Bowers – 1981-1984

WELCOME NEW MEMBERS THIS QUARTER

Tony Linnard
Martin Pollard
Nancy Brown
Phil Phythian

EX-Ls Honorary Life Members

Shirley Ashley	Inge Henle
Esther Colwell	Bud Larsh

2013 CALENDAR OF BOARD MEETINGS & LUNCHEONS:

<u>Board:</u>	<u>Luncheons:</u>
April 11	May 16
July 11	August 15
October 10	November 21

Board Meetings start at **3:00 p.m.** on the dates listed above, usually in 54-130B (that's in the conference room addition to Perseverance Hall at the Cafeteria) at the Lab, but subject to change at the last minute, so check with a Board member if you plan on attending. We welcome attendance by interested members.

OFFICE ADDRESS:

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MEMBERS DECEASED IN 2013

Dick A. Mack

There have been a number of important developments in the past few months that should be of interest to EX-Ls members. Much of the activity stems from the completion and publication of the retiree survey. For a summary of the survey results and instructions for its access, refer to the article by Janis Dairiki elsewhere in the Newsletter.

Particularly noteworthy has been the interest and positive response elicited from Laboratory management with whom the results were shared. On February 4, the EX-Ls officers held their annual meeting with Rebecca Rishell, Deputy Chief Operating Officer, to update her on EX-Ls activities in general with particular emphasis on the survey results. On February 25, Janis Dairiki, Rich Sextro and I met with Deputy Laboratory Director Horst Simon to discuss the survey and respond to his comments. In both cases, much of the discussion was focused on exploring mechanisms whereby connections between retirees and the Laboratory could be maintained and enhanced. One point of discussion was the communication of Lab activities to members of the EX-Ls and other interested retirees. The other was whether there could be expanded opportunities for retirees to remain connected to the Laboratory through volunteer participation in collaborative projects. Both of these topics had been highlighted from the survey as retiree interests.

With respect to communication of Lab activities to retirees, a proposal under discussion is to designate one of the annual luncheons as an opportunity for the Laboratory to designate a guest speaker who would update the Ex-Ls concerning new initiatives and other activities of general interest. In the past, we have had occasional talks from current Lab directors that have proven to be quite successful in terms of EX-Ls member interest. There have also been presentations describing specific Lab projects such as the Bevatron demolition and Next Generation Light Source that seem to have attracted similar interest. The current proposal would be to formalize these talks into a recurring event with more Lab involvement in providing appropriate speakers. There is also discussion of combining this with a reception for recent retirees to welcome them to the retirement community, introduce them to the EX-Ls organization and provide information about retiree resources. These ideas were discussed at the most recent Board of Director's meeting where considerable interest and enthusiasm were expressed.

A second topic was directed to exploring mechanisms whereby retirees could volunteer to serve as a resource to the Laboratory in specific projects with joint participation. In the recent past, EX-Ls members have participated in such Lab sponsored events as the Open

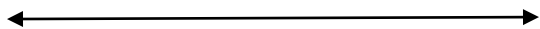
House and Wellness Fair. We are in the process of exploring other opportunities where a wider group of EX-Ls might become involved. One suggestion that triggered considerable mutual interest was the possibility of a Lab history project in which retirees are called upon to reflect upon their experience at the Lab and integrate this and other information into a Lab history. Following discussions at the recent Board meeting, an informal committee consisting of Rich Sextro, Janis Dairiki and myself has been formed to explore options. EX-Ls members are encouraged to contribute ideas as to how such a project might be structured. Our goal is to generate an informal proposal to take to the Lab to solicit their support and involvement. It is recognized that individuals from both the Laboratory and the retirement community would need to be committed to the success of such a project. Again, I remind members that here is an opportunity that requires volunteers. Hopefully, interest in Lab history is sufficiently important that members will be available.

In the last president's message I commented on proposed changes in the processing of retiree health care inquiries. On March 26, an announcement was made in the Today at Berkeley Laboratory (TABL) website that effective April 1 retiree health coverage processing and inquiries will be transferred from LBNL Human Resources to the University of California Office of the President's Retirement Administration Service Center (RASC) in Oakland. This includes the Health Care Facilitator position formerly located at LBNL. The RASC unit also supports retirement services for current Lab employees. They will also be providing support for our Lab retirees and their eligible family members/dependents concerning their UC-sponsored health benefits coverage, including Medicare benefits coordination. The message goes on to comment that RASC has a proven track record of meeting employee needs. Approximately 90% of UC employees using RASC for retirement services have rated them as satisfactory or better and would recommend them to other employees.

In response to a request from the EX-Ls, Bharat Parikh, LBNL HR Benefits Representative, and Michael Waldman, UCOP Manager of RASC-Retirement Administration Service Center explained the changes to the Board at our most recent meeting. In brief, the changes were dictated largely by budgetary constraints within LBNL caused by, among other factors, congressional sequestration. We were assured by Michael Waldman from UCOP that the services provided would continue to be effective and that the satisfaction level of current RASC users was high. One remaining question is how members of the LBNL retiree community who don't follow TABL become aware of these changes. We were (continued on page 4)

assured that the Laboratory would work with the EX-Ls and UCBRC to contact retirees with this message.

Finally, I would like to point out that we have another outstanding speaker lined up for the May luncheon. Tony Hansen is a former Lab employee known to many of us. He will be describing elements of his very interesting career as a globe-circling air pollution analyst. Having listened to presentations by Tony in the past, I can assure members that they will be entertained, amused and informed.



UPDATE ON THE RICHMOND BAY CAMPUS:

University of California leaders in January 2012, after an extensive review process, identified the Richmond Field Station as the preferred site for Lawrence Berkeley National Laboratory's second campus. The site would initially integrate Berkeley Lab's biosciences programs currently in leased space. The site presents an excellent opportunity to solve the Lab's pressing space problems while allowing for long term growth and maintaining the 80-year tradition of close cooperation with the UC Berkeley Campus. The site will remain a "preferred site" until completion of planning and environmental reviews and final approvals from UC Regents and the U.S. Department of Energy. The Lab started the first phase of formal environmental document process in January and is continuing through this year and into early spring next year.

Earth Day

April 22nd is Earth Day. In lieu of a fair this year, Sustainable Berkeley Lab has planned a series of events over the week. These talks, demonstrations, panels, exhibitions, and movies all focus on environmentally sustainable practices for both the workplace and at home. You can see one of the seminars via video streaming, or stop by one of the events to learn how you can make a positive impact.

Visit the website

<https://commons.lbl.gov/display/sustainlbl/Upcoming+Events> for more information and updates (<https://commons.lbl.gov/display/sustainlbl/Upcoming+Events>).

Armando Viramontes

MAY 11 FUND RAISER FOR CRS

Community Resources for Science (CRS), the organization which EX-Ls supported in 2012 with its annual donation, is sponsoring a fund-raising event at Oliver Ranch in Sonoma County. You may remember that CRS is working with elementary teachers to improve science education and there is more about that in the last paragraph.

But first, the Board and Staff of CRS invite you to join them for a special day featuring an exclusive, private tour of Oliver Ranch on Saturday, May 11, 2013. You will join collector Steve Oliver for a personal tour of his picturesque 100-acre property in the Alexander Valley featuring 18 remarkable site-specific installations by artists, including: Andy Goldsworthy, Ann Hamilton, Bruce Nauman, Martin Puryear, and Richard Serra. One of the best kept secrets -- and most exclusive art tours -- in the Bay Area. (Learn more about Oliver Ranch here: www.oliverranchfoundation.org)

The tour is 2 – 2 ½ hours long and is a light hike across the rolling woodland. Paths are not paved and are not wheelchair accessible. Following the hike the group will stop at a nearby winery for lunch and wine tasting. Ticket price of \$150 per person includes the private tour of Oliver Ranch, lunch at the winery, and chartered bus service to and from a central meeting point in Berkeley. A great way to support CRS while enjoying a relaxing day of art and wine. Bring a friend! To reserve your tickets, contact CRS by phone, email or mail! (Phone: 510-527-5212; Email: community@crscience.org)

More CRS news: Next Generation Science Standard

The Next Generation Science Standard is being rolled out this year, and CRS is doubling its efforts to help teachers to prepare for the new standards. One LBNL scientist who helped review NGSS earlier this year says that he thinks many teachers, especially those teaching K-8, may find it difficult to adjust to the inquiry-based standard. In any case, CRS has started to encourage teachers to move in that direction and initiated the "Science Super Star" program. You may want to take a look at this video (really cute):

<http://www.youtube.com/watch?v=4OWBN5ZSNnc>

Learn more about CRS and sign up to volunteer at:

<http://www.crscience.org/contact/index.html>

Janis Dairiki

DICK MACK REMEMBRANCE by BOB BUDNITZ

Dick Mack died in mid-March 2013. He was a long-time member of the EX-Ls, following an illustrious career at LBNL. Bob Budnitz, who served as the second Head (1975-1978) of the (then) Energy & Environment Division, offers his personal recollections of Dick

Dick A. Mack, who worked at LBNL for over 30 years (1946-1977) and was one of the lab's most important people during that time, died on March 11 in Santa Cruz at age 91. This short reminiscence will recall Dick's early work with Ernest Lawrence and also his key work in helping in 1969-1973 to found the Energy & Environment Division (which split later into today's Environmental Energy Technologies Division and Earth Sciences Division.) After his retirement from LBNL, he and his wife Dorothy (who died in 2006) moved back to Santa Cruz County, where Dick had been born and raised and where he lived until his death.

Dick went through Santa Cruz public schools, graduated from high school in 1939 and from Cal in 1943. Then he promptly went into the service, spending the remainder of the war in Washington DC at the Naval Research Laboratory. He met and married Dorothy (who served in the war teaching at a marine school) in 1945. Dick's first job after the service was with the Rad Lab in Berkeley.

Dick had always been interested in electronics, including having a ham radio set as a small boy. This led first to his wartime posting (electronics research instead of a fighting role) and later to that first job at the Rad Lab. He quickly attracted the attention of Ernest Lawrence himself, who gathered a small group of young technical experts (known as "Lawrence's boys") to work with him directly on various new technical ideas. Lawrence would turn to his "boys" whenever he had an idea for a scientific or technical advance or an invention, or he had a need for independent evaluation of something he was thinking about. In telling these stories to me, Dick would always call Lawrence simply "EOL." He would say something like, "EOL asked me to do this as a rush job for 3 days ..." or "EOL had this harebrained scheme that we had to straighten out." Anyway, Dick was proud to discuss those schemes with anybody younger (like me) who would listen. One such scheme was Lawrence's idea for a better color television, at the time not yet a commercial system (so this must have been in the late 1940s.) Lawrence had an idea that he put his "boys" to work on, and Dick worked on color TV off and on for a couple of years. But just as they were making real progress, apparently RCA patented a scheme that eventually became the winner in the global competition for color TV, and Lawrence had to drop the Berkeley work.

Those must have been heady days. Working under Lawrence, Dick had major roles in developing the control systems for both the 184-inch cyclotron and the new Bevatron, along with working on a lot of other advances in data-taking. Some of his work really made possible the elaborate physics and chemistry experiments for which

others at the Lab achieved major science fame, including Nobel prizes – with Dick (and others like him) in the background.

In late 1969, Andy Sessler and Jack Hollander founded an "environmental program office" that after considerable early growth became the Energy & Environment Division in 1973 when Andy became the lab director. Dick Mack, who by then was the Head of the lab's Electronics Engineering Department, quickly became the third leader of the nascent group. Dick was an invaluable member of the team, in part because he knew how to "get things done" in the lab bureaucracy. He was also trustworthy and good natured, which translated into an ability to work with younger staff (like me!) In parallel with his "day job" in Electronics Engineering, Dick spent most of his time helping E&E get off the ground during those formative years, 1970-1973. Frankly, Dick really had a lot to do with putting E&E on a firm footing within the Lab in the first few years because he was universally respected, which mattered a lot in those early times, when many in the rest of the Lab were frankly suspicious of E&E, or worse were openly skeptical about its founding and rapid growth. Dick also contributed technically to a few of the earliest E&E projects.

His relationship with me was typical. I was a youngster around 30 when the E&E program began, but Dick took me under his wing and helped me to figure out how to make a difference in the first few projects in E&E that he and I did together. [He did the same with the late Craig Hollowell. In July 1971, Craig and I became the first two actual employees of what was to become the E&E Division.] Dick was to me, as he was to Craig and several others, like a kind "uncle" whose demeanor was so wonderful that we all simply loved the guy. Everyone should have a mentor like Dick Mack.

The other major character feature of Dick Mack was that all his life he was an ardent Christian, whose faith sustained him (and Dorothy and their family) in a way that I marveled at. For a short period he tried to convert me until it became clear to him that it wasn't going to work (I'm a committed religious Jew), after which we spent the next few decades discussing honorably how my religious tradition and his interpret various religious ideas differently, and why. We both learned a lot, and grew to love each other all the more due to this dialogue we had over the years.

Dick Mack was one of the nicest people I've ever known, and he spent his whole life doing "good works" to further peace and prosperity wherever he could. What a great fellow!

DON'T LEAVE IT FOR YOUR SPOUSE TO THROW OUT

Eleanor Dahl

I think that most of you were aware that Per Dahl, my husband and friend of 45 years, died on October 1, 2011. Per was diagnosed with lung cancer in 2010, so we knew that each day was precious.

Per was born in the Georgetown Hospital in Washington, D.C. when his Norwegian father was working at the Carnegie Institute in Washington. His parents took him to Norway at the age of four and he returned to the United States at the age of 17 after the War, waiting in Eau Claire, WI until he could join the US Army to become acclimatized with being an American. Therefore, settling his estate brought on complex problems.

Before your spouse leaves you, the most important item to be done is to prepare a Living Trust with your lawyer. This eliminates the remaining partner from having all assets frozen and having to go through probate. The bank was probably the easiest part.

He left me his documents from 1950 and earlier, that he did not want to decide to throw out: documents, journals, letters, photos, etc.

Right after Per died—Day 1, I managed to trip over my cane giving myself a fat lip and a black eye and he wasn't even here to take credit for that!

Once I looked halfway decent, I went to the Watergate Market for food, etc. The market is where I received a lot of sympathy from many living in Watergate who had watched Per withering away. Friends told me that I would be at least two years cleaning up the unit. I'm a doer, no way. I was proven wrong!

My first jolt was from my lawyer. She said to make an appointment in 6 months to settle the estate. She said don't notify the Bank or Credit Cards but contact SS immediately. Well, I didn't want to wait that long doing nothing. Fortunately, Tom Beales sent me a checklist of what to do. I studied this list and checked off the items that I could accomplish without the lawyer. What a great help, thanks Tom.

It took almost 6 months to complete the estate. First thing was to have a meeting at the Social Security office in downtown Berkeley. People were complaining about the office but I didn't have any problems. Insurance policies, IRAs, UC Berkeley retirement program, etc., could all wait. I did them one at a time so they went smoothly.

This year has been quite a journey and how to tackle all the books; his papers, and his father's papers from 1920s, etc.?

Jeanne and Bill Hassendahl came over one day to sort through all Per's papers. We managed to go through about six large packing boxes of his papers from

Brookhaven National Laboratory, Lawrence Berkeley National Laboratory, and Superconducting Super Collider, conference papers, etc., in one long day with a pleasant break for lunch. Guess what? Almost all of his papers are on the Internet in different libraries here and abroad. We did ship off a small box of items to the Superconducting archives in Florida.

In addition, I had two large books of Per's father's papers. They, too, were on the Internet. The recycle bin in my building was the recipient for all these papers.

Per left 6 bookcases of books that needed a home. Well, the El Cerrito library had a program of just pick up a free book—no help there, also the going rate for used books, .60 cents. Moe's did take a few. Some of these were not all the type of books for a local library. Several cartons of other books were left at a local library. In addition, Per was very interested in wartime books—these are in English, Art, stamps, etc., that I would like to find a home for as well.

I typed a list of the titles and authors for his History of Science books for one shelf and sent it off to the Office of History of Science and Technology (OHST) where Per had been a Visiting Scholar for several years. OHST had a visiting professor from the University of Lisbon, Portugal. She looked at the list and said yes. Six cartons of his books are now in the OHST library in Lisbon.

One and ½ shelves of books in Norwegian! I typed up a list of these books and sent it off to the Norwegian Consulate in SF. While they were impressed with the collection and it was worth having, they did not have the room. However, the Seamen's Church in SF took all of these books.

What to do with 29 large pages of Per's cartoons that he drew just after the war and are in Norwegian? A friend contacted the Resistance Museum in Oslo, yes; they would like them. They are now in Oslo. Then there were more of his Father's papers. One envelope has been sent to the FRAM Museum in Oslo and I'm finding more to go to Oslo. Per's other art works have been spoken for by the family. Three of Per's father's painting now have a home with other family members. Whatever is left will go to a family cottage at Lake Chetek, WI.

Per also left a book about his career in Science and covering some of Per's Father's work as a physicist in Norway. I have been working on this 17-Chapter document, mainly for the family. Another unpublished book is on the "Sinking of the Tirpitz," during the war in Norway.

Also, any suggestions regarding what to do with an 11-volume stamp collection (continued on page 7)

(rather than a standard stamp album, Per drew around each stamp) would be very welcomed.

So, as I say “Don’t Leave It For your Spouse.” Although, I’m not sure what I would have done without all these items to worry about this past year, this year, and probably, next year, as well. Some of you might have had similar experiences.



EXCITING TOURING OPPORTUNITIES FOR FALL 2013

The UC/CUCRA Travel Program, designed especially for UC retirees and managed by Collette Travel, is offering two new tours for Fall 2013. The first is Shades of Ireland. The second is Rediscover Cuba – A Cultural Exploration. This tour is offering a unique experience for U.S. citizens who have not been able to visit Cuba for many years. These and other fall tours are briefly described below.

Discover Croatia – 14 Days – September 9 - 22, 2013 - \$4,299

Tour Highlights: Venice, Opatija, Wine Tasting, Plitvice Lakes National Park, Dubrovnik, Split, Diocletian's Palace, Zagreb, Bled, Pletna Boat Ride

Shades of Ireland - 10 Days – October 28 – November 6, 2013 - \$3,249

Tour Highlights: Dublin, Irish Evening, Kilkenny, Waterford Crystal, Blarney Castle, Jaunting Car Ride*, Ring of Kerry, Killarney, Farm Visit, Limerick, Cliffs of Moher, Galway, Castle Stay

Italian Vistas – 13 Days – November 2 – 14, 2013 - \$4,499

Tour Highlights: Rome, Colosseum, Ruins of Pompeii, Sorrento Coast, Isle of Capri, Florence, Statue of David, Leaning Tower of Pisa, Tuscan Winery, Venice, Murano Island, Verona, Stresa, Locarno, Switzerland

Rediscover Cuba - A Cultural Exploration - 9 Days– September 8 – 16, 2013 - \$4,099

Tour Highlights: Trinidad, Pottery Demonstration, Cienfuegos, Bay of Pigs Museum, Havana, Cuban Fine Arts Museum, Maqueta de la Ciudad de La Habana Museum, Ernest Hemingway Home, Casa Fuster

Go to Collette Vacations:

<http://www.collettevacations.com/brochure.cfm> or (877) 872-4331 for detailed tour information and booking. These tours are offering early booking discounts so contact Collette Vacations as soon as possible. Remember, these tours are available to your family and friends; you are not required to be a UC Retiree to book or participate in any of these tours. When conferring with Collette staff, retirees should be sure to indicate their UC affiliation so that CUCRA receives the proper credit and commission.

KEEPING IN CONTACT WITH THE LAB

Donald Grether

One of the results of the recent retiree survey was that retirees really want to remain in contact with the Lab. There is no panacea, and what works for one person may not for another. However, there are a couple of ways to keep up with at least some of what is going on at the Lab.

The first is to join Friends of Berkeley Lab. It is free and all you need is an email address. Go to the Lab's home page at lbl.gov and then to F on the A-Z Index. Scroll down to Friends of Berkeley Lab and then click on Interested in Joining? If you join you will receive an occasional email announcing special events (such as the October, 2012 Open House) and providing some information about what is going on at the Lab. For example, the most recent edition is dated April 8, 2013 and includes an announcement about the next Science at the Theater to be held on April 22 and address “How Hot Will it Get?” – referring of course to Global climate change. The free talk will start at 7:00 pm at the Berkeley Repertory Theatre.

There are also brief articles with photos on a variety of topics including: Why clouds matter and why there may be fewer of them, Engineering bacteria to generate currents, Lab Director co-authors Atlantic op-ed on sequestration cuts, and A long journey home: Original 11 inch cyclotron returns to Lab after 75 years.

Second, each day the Lab sends the email today at Berkeley Lab (TABL) to everyone with an lbl.gov email address. However, TABL is also available on the Lab's home page. Just click on Today at Berkeley Lab near the upper right-hand corner. [It's also worth staying on the home page for a while. There is an ever-changing array of short articles with photos.] Each edition of TABL consists of a list of titles or “one-liners”. If you are interested in a given topic, just click on the title. Examples from the April 9, 2013 edition are: Researchers find way to catalyze more sugars from biomass, Daughters and sons to work day on April 18, and this month in Lab history...Lawrencium added to periodic table.

**REPORT ON LBNL RETIREE
SURVEY/ACTIONS**

I hope you have all had a chance to look at the survey report on the EX-Ls web page at: <http://www.lbl.gov/EX-Ls/>. The survey with 425 responses (19% response rate) provided interesting results and sufficient information to address our main goals: to obtain a comprehensive picture of Lab retirees, to ensure that programs and activities of the EX-Ls and the UC Berkeley Retirement Center (UCBRC) are well aligned with retiree interests, and to inform LBNL management of the continuing contributions Lab retirees make to the Lab, the University and their larger communities.

The results suggest that most LBNL retirees are enjoying retirement. They typically lead busy, productive and satisfying lives, continue to make important contributions to the Lab and UC, and are actively involved in their local communities.

There are a small number of retirees for whom the experience has not been as positive. Issues that negatively impacted some respondents were poor health of retiree or spouse/partner, lack of preparation for retirement and trouble adjusting to life changes. Based on the 17% of respondents who were either caregivers or care receivers, UCBRC has established a new healthcare support group for them.

The awareness level about UCBRC is good and almost one-quarter of the respondents have been involved in UCBRC activities and programs. Several respondents commented that the UCBRC is one of the best things about retirement.

We (Ad hoc survey committee members) have discussed the survey results with Lab Management and with Patrick Cullinane, UCBRC director, to explore how we can best respond to retirees' comments. We have learned, for example, that retirees really want to remain in contact with the Lab – not surprising when over 50% of the respondents had worked at the Lab at least 20 years. We were pleased to find that Laboratory Management showed considerable interest in the survey results and has proposed to work with the EX-Ls in improving the interactions between the Lab and the retiree community. Since the Lab does not currently have a list of retirees it has been difficult to achieve any direct communication. UCBRC is willing to help with mailings to retirees since it does have names and addresses. This would enable the Lab to communicate directly with all retirees, not just EX-Ls members, and would be especially important in passing on messages that impact retirees. Direct communication would also provide a way for the Lab to let retirees know about volunteer opportunities at the Lab that could utilize and profit from their expertise.

Activities being considered by the EX-Ls include expanded newsletter coverage to convey more Lab news, additional social activities, Lab tours, and a possible history project in collaboration with the Lab.

We want to again thank all of you who responded to the survey. The Board would welcome any further comments or suggestions you may have.



**SUMMARY OF LUNCHEON TALK ON
FEBRUARY 21, 2013**

**Caldecott Tunnel Fourth Bore Project
Elpidio Perez, Speaker**

The Caldecott tunnel is well known to all of us and many use the tunnel on a daily basis to get to the Lab. As we know all too well, the present three bore tunnel with its traffic switches can be a nightmare. Enter the dedicated Fourth Bore to relieve the congestion started in 2010, it will be completed this year. Problems in getting over the East Bay Hills from the Berkeley/Oakland area to Orinda and points east is not a new one. Back in the 1880s people began to discuss a tunnel through the hills to make it easier for residences on the eastern side to access the western region. By 1904 the first tunnel was a reality. It was a single, one-way tunnel that accommodated horse and buggy as well as automobiles. The tunnel known as the Kennedy Tunnel was 1,000 meters long and 17 feet wide and was timber supported. This old tunnel is now sealed and a faded memory.

By the 1930s there was a large increment in population in Contra Costa County that resulted in the need for a new tunnel. A two-bore tunnel was designed and paid for by WPA funds, part of the New Deal to provide employment for out-of-work citizens. This tunnel was completed in 1937 but not without its tragedies. Several deaths of construction workers occurred. However, upon its completion, the tunnel saved motorists an hour in travel time. The tunnel was named the Caldecott Tunnel in the 1960s in memory of Thomas Caldecott, former Alameda County supervisor and a big supporter of tunnels.

Post WWII there was an enormous growth spurt in Contra Costa County that again led to the consideration of yet another bore, the third bore. The third bore was completed in 1964 and served approximately 54,000 vehicles daily. Fast forward to the present, the 3-bore tunnel serves 160,000 vehicles (continued on page 9)

LUNCHEON SPEAKER FOR MAY 16, 2013

Dr. Anthony D.A. Hansen

Magee Scientific Corporation, Berkeley

COMBINING SCIENCE WITH ADVENTURE: CHASING AIR POLLUTION TO THE ENDS OF THE EARTH

daily. This led to the daily traffic shifts designed to aid traffic movement at peak hours. Needless to say, this solution did not work well and a fourth bore was needed to ease traffic. The total cost of the fourth bore was estimated at \$402.1 million (compare this \$11.5 million for the 3rd bore in 1964!). Funding was obtained from federal, state, regional and local sources and boring began in 2010.

Boring the tunnel was complicated by the nature of the rock which was inconsistent; some very hard like granite and others brittle. Two borers were used to drill the tunnel and no explosives were used. Because of the fear of gasses in the newly forming tunnel and because of hazardous fumes both engines used to bore the tunnel were state-of-the-art electrical units. One started at the Orinda side and the other on the Oakland side. Just imagine trying to line up both sides so they would meet mid-tunnel. After removing 1 foot of rock in either direction, the areas were surveyed at both ends. This paid dividends; when the tunnel broke through, it was off the mark by only one-half inch!

The fourth bore is 1,033 meters long and is 0.9 miles from the Hayward fault. It is built to withstand a 7.2 earthquake. Excavation and support of the tunnel was tailored to the ground conditions in the immediate area. Iron lattice girders, bolts and shotcrete (reinforced concrete) were used to stabilize the tunnel which is horseshoe shaped. Seven cross-passages exist between the fourth bore and third bore to aid in evacuation in case of fire and other catastrophic events. Construction is state-of-the-art with much thought being put into safety. There are 12 foot shoulders so disabled autos can easily be pulled off the roadway. Jet fans are present to prevent the accumulation of excessive traffic fumes and lighting is designed to prevent "tunnel vision".

Rock formations in the fourth bore date back to the Miocene period (5-23 million years ago). The crews constructing the tunnel found interesting fossils such as from camels (they actually originated in America and not Arabia), fish, wolverines and ruminating pig. The UC Museum of Paleontology will be the recipient of the fossils and will analyze and catalogue them.

When will the Fourth Bore open to traffic? The exact date is not known but CalTrans is shooting for this August. They hope it will be before the new span of the Bay Bridge opens on Labor Day. The race is on!

Dr. Tony Hansen is a scientist with a variety of interests and experiences that overlap areas of scientific research, gadgetry and instrumentation, business entrepreneurship, and an attraction to discomfort. His work in atmospheric science was quickly accompanied by the realization that since there is air everywhere, one must travel in order to study it. He soon graduated from the standard postdoc's torture on broiling asphalt in summer Los Angeles, to the cooler climes of the Poles; becoming unipolar in his early career and bipolar by age 50. He will share some of his experiences in his luncheon talk, illustrated with flames, black umbrellas and other visual aids.

Tony joined the Lab in 1977 fresh from gaining his Ph.D. in Physics on the Berkeley campus. He worked in the Atmospheric Aerosol Group under Tica Novakov until 1990, during which time they concentrated on the properties of the "Black Carbon" (or "Soot") particle. The group discovered, defined and developed methods for studying this pollutant. At the time, 'soot' was regarded as a historic relic of the 'Coal Age'; but in the intervening years, it has come to be recognized as the Number-2 contributor to global Climate Change, and the number-1 indicator of the adverse public health effects of exhaust emissions. Tony developed an instrument for measuring 'Black Carbon' in real time, and formed a business in 1986 to commercialize this invention. He subsequently transferred to a part-time position in the Engineering Division in 1990 where he contributed to the early success of the instrumentation and automation program within the fledgling Human Genome Project. The other half of his time was devoted to growing his business and using his instrument to measure Black Carbon in heavily-polluted places such as India and China, and at supposedly pristine locations such as the North and South Poles. He took early retirement in 2005 to continue the business and scientific development of the instrument. In this talk he will outline the attributes of Black Carbon and its effects on climate and health, and will then show some pictures from his most recent trip to the South Pole to install one of his units.

Dr. Tony Hansen's background is in experimental physics, instrumentation and aerosol science. He received his M.A. in physics from Oxford in 1972, and his Ph.D. in physics from U.C. Berkeley in 1977. He had a thirty-year career with Lawrence Berkeley National Laboratory before retiring in 2005. During this time he published more than 60 papers in the field of atmospheric sciences and generated more than 20 patents in instrumentation related to aerosol monitoring, genome mapping and other topics.

ATTENDEES AT THE FEBRUARY 21 LUNCHEON

Maxine Adams
Marge Albo
Jose Alonso
Richard Baker
Winnie Baker
Tom Beales
Robert Belshe
Edward Bennett
Bill Benson
Eugene & Myrna Binnall
Igor Blake
Kay Bristol
Jerry Bucher
Geores Buttner
Mary Clary
Patrick Bullinane
Eleanor Dahl
Janis & Ned Dairiki
Diane D'Aoust
Genevieve Dreyfus
Andy Dubois
David Edgar
Tom Elioff
Ben Feinberg
Pauline Fleischer

Trudy Forte
Robert Fulton
Miguel Furman
Rick Gough
Harvey Gould
Don & Becky Grether
Connie & Ed Grondona
Margaret Grossel
James & Lorraine Haley
Inge Henle
Dawn Holley
Egon Hoyer
Vicky & Richard Jared
Hilma Johnsen
Joe Katz
James Koeppel
Judy & Stan Kody
Matt Kotowski
Richard LaPierre
Almon (Bud) Larsh
John & Barbara Lax
Branko & Ana Leskovar
Rayne Merrywood
Bob Miller
Ken Mirk

Sandra Mocco
Nancy & Vic Montoya
Marty Morimoto
Robert Mortiboy
Rolf Muller
Charles & Anita Ogden
Fred Perry
Terry Powell
Mike Press
Donald Rondeau
Esther & Ron Schroeder
Richard & Joan Sextro
Brenda Shank
Claire Shigley
Betsy Smith
Karen Springsteen
David & Sally Stevens
Sandra Stewart
Woody Suoza
Irma Vogel
Louise Vogelsberg
Lee Wagner
Ron Yourd
Allan Zalkin
Jon & Bette Zbasnik

Elpidio Perez – Guest Speaker
Joseph Harkins - Guest

Date: Thursday, May 16, 2013

Where: Berkeley Yacht Club, #1 Seawall Drive, Berkeley ← ← ← ←

Time: Doors Open at 11:30 AM - Lunch Served about 12:00

Bar Service: Opens at 11:30

Speaker: Dr. Anthony D.A. Hansen, Magee Scientific Corporation, Berkeley, former LBNL Physicist

Title: Combining Science with Adventure: Chasing Air Pollution to the Ends of the Earth

Topic: Dr. Hansen will outline the attributes of Black Carbon and its effects on climate and health, and will then show some pictures from his most recent trip to the South Pole to install one of his units. (See newsletter article for full details)

Catering Service: R & J Catering, Hayward, CA

Menu: Caesar Salad (family style), hot rolls and butter will be served at the tables along with coffee and water. Hot tea is available on a side table.

Entrees: NY Strip Roast with Madeira sauce, Traditional Shrimp Scampi in garlic butter, Rotelle pasta in garlic parmesan butter, Mixed Vegetables with herb butter

Desserts: Cakes

Cost: \$25 per person (prepaid)

Reservations: Computer access to the LBNL/EX-Ls Web page (www.lbl.gov/EX-Ls) will also give you the lunch form. Vicky Jared must receive your reservation by Monday, May 13. The form should be mailed to Vicky Jared, 4849 John Muir Road, Martinez, CA 94553. Please call or email Vicky (925) 228-2145 - jaredrv01@aol.com if you want to sign up or have questions.

See you at BERKELEY YACHT CLUB for the **May 16 luncheon**. Be sure to make reservations by Monday, 05/13/13. Mail To: Vicky Jared, 4849 John Muir Road, Martinez, CA 94553

From _____

I Plan to attend the EX-Ls Luncheon Yes_____ No_____ \$25 per person PREPAID

I will bring _____ guest(s)

Name(s) of Guest(s): _____

Menu is Buffet: Advance Choice is not required

Please make check payable to EX-Ls

Total Enclosed: \$_____

Willing to carpool: As Rider? _____

As Driver? _____

Need Help with Buffet? _____

Need to sit closer to the Screen? _____