

I had hoped to become briefer this year but the opposite has happened. Instead of becoming more compact as I get older, I get more verbose. Maybe because more is happening in our lives (possible) or maybe I'm getting worse at self-censorship. My apologies in advance either way. I make no promises of getting better next year, especially since I already know of some interesting upcoming trips, including, I hope, my first visit to Korea.

The year started out fairly slow. I was still alone the first weekend of January (since Jørgen and Kristina were still in Denmark), so I did the Epiphany Run without having to worry about getting back for anything. Instead of coming straight back, I went around Lake Chabot before returning (for a total of 28 miles). The weather was really good for it, for a change, even though it was pretty cold. I did Mike P's Fremont Fat A-50K at the end of January and spent a good bit of it running with a lady from San Jose (I think). She said I should write a book about my running. I should have replied that I already am, it's called my Christmas letter. (Jørgen already thinks so and probably some of you do, too; I guess it's pretty much my only serious hobby.)

Near the end of January, Kristina and I went to Livermore for the Camp Butano Creek reunion where I signed her (and myself) up for camp in August. It's easier to get a slot when you can register the first day it's open.

We spent a pretty wet weekend at Stinson Beach this winter. I got a good long run in before it really hit. Otherwise, Jørgen went for a long hike in the rain and we also walked out to the end of the beach and back in the wet, windy weather. That is one way to get the beach to yourself. Kristina didn't join us for dinner either night but stayed in the room (which was really a cabin this time) watching TV. We got movies from the office and watched 2 or 3, including 'The Darwin Awards' so named for an insurance investigator chasing down people who take themselves out of the gene pool by dying in extraordinarily dumb ways. There are a number of books and a website about just such people. Check it out. My student Randy gave me one of the books and we've all read it and gotten quite a few laughs out of it.

At the beginning of February, Jørgen and I went to a joint LANL-LLNL fission meeting in Los Alamos. It was pretty cold up there with quite a bit of snow on the ground but the roads were clear so it was easy to drive and safe to run. I even made it up to the ski area one day. Jørgen stayed for 2 days while I stayed the whole week. We had a couple of dinners at Peter's house, in his new addition. He has installed a Korean grill table in there and prepared some of the dinner on it. That was fun. The weather got really warm during the day, warm enough that we were able to sit outside without jackets when the sun was shining. It was generally quite a nice trip.

During the winter school break, Kristina and Jørgen went to Truckee for several days to ski. They stayed at Boreal, one of the first ski areas after Donner Pass. It is pretty convenient travel-wise and a good place for beginners but a pretty minimal place to stay. They didn't even have internet and Jørgen's cell phone didn't work. The food left a bit to be desired as well (the only food available was in the skiers' cafeteria and consisted of either pizza slices or hot dogs). But they had a nice time together and got in a couple of days of skiing and also some snowshoeing in the area where the ill-fated Donner party had stayed. Kristina had read a lot about the Donner disaster and it had been one of her wishes to go to there in winter (though the conditions were nothing like the winter of 1846-47 when the Donner Party was there).

Our troop went to Camp Sugar Pine, near Arnold, to overnight at the end of February. Before going to the camp, we went sledding at the Bear Valley Ski Area, just up the road. To have time to go sledding, we left home at 06:30. I insisted we go without stopping so our car, with Kristina, Mari and Kate M, arrived long before the others. We'd made arrangements to rent sleds for the girls for the afternoon and I wouldn't let those three start without the others so they were relieved when the other cars arrived. They really had a great time. We had the camp infirmary cabin which slept 24. We were six adults with the girls and, lucky us, there were three bedrooms for the adults to take so we could sleep in relative peace. It also had a rather big kitchen so we could prepare a decent meal at dinner with pasta, tacos and brownies. In the morning the girls made snow art and did some interesting things with ice. Kristina borrowed my boots so I wasn't able to do too much in the snow except walk very carefully to avoid sinking in and getting my feet excessively wet. (She finally got some rubber boots for her Little Farm work so next time she can use

those and leave me a bit freer to move.) Before they were done with their snow art, it started to rain so we did the rest of the activities from the covered back porch of the cabin and left right after lunch instead of hanging around. (We wanted to go back again next year but hard economic times have hit the Girl Scouts too and they are closing Sugar Pine for the winter this year.)

The same day we had booked Sugar Pine, our Girl Scout cookies arrived. Thus several of the troop parents not involved in the Sugar Pine trip had to go get the cookies and sort them out in Susan's garage. Jørgen had to pick up Kristina's and basically filled our garage staircase with her orders. I was in charge of organizing cookie booths for our local area and had to deal with not only our local troops but interlopers as well. The week before our cookies came and two weeks before the public sales started, a leader from another troop called to tell me that there were girls selling cookies by campus who definitely were not from our area. I went down and chased them away and henceforth took to calling myself the 'Cookie Booth Nazi' for scaring off little girls. The mom's excuse was that her daughter goes to Cal (UC Berkeley) so she could sell cookies there, even before our cookies even arrived! Well, she's from another area altogether and money she makes doesn't benefit our local area as it should. Yes folks, Girl Scout cookies are a cut-throat business. We ask for lump-sum dues from our parents at the beginning of the year and we exist on that plus whatever we make from cookie sales. The sales basically pay for all our troop trips. Also, the money our local area gets from the regional Council depends on how many cookies we sell. You can't be a Girl Scout troop if you don't sell cookies.

We'd never done that many booths ourselves so I was surprised at how many booths some troops did. We barely had enough cookies to last a whole shift so on our first day, I brought down 10 cases from Kristina's stash to sell at our booth and then had to replace them. That really put us behind on delivering her cookies and I'm still not sure that everything balanced in the end. We did get all the cookies out of the house except for one box of Thin Mints that didn't seem to belong to anyone. (Plus four boxes that a real estate agent trying to sell Martin Redlich's (extensively renovated) house paid for but never returned Jørgen's calls about delivery; I think he's finally given up and started eating them.)

The last weekend of booth sales I dared to go out of town for the night with Jørgen for the first Diablo Trail 50K. I'd heard about it from Mike P and approached Jørgen about it to see if he was interested. Boy, was he! He went out and bought a big map of the whole Mt. Diablo area to plan his own race day excursion. The weekend before, we went out there so he could bike the trail the opposite way. I dropped him off at the start (race finish) and then went out to the end (race start) to pick him up, going first to Brentwood to run out to the delta on a flatter bike trail my group leader at LLNL had told me about. (He runs sometimes too so I thought he knew the trail. Only a little it turns out: he thought it ended about 6 miles before it actually did; he had no idea it ended at the delta.) It took Jørgen about eight hours to get through the route on (or rather with) his bike, with at least six of those spent pushing the bike uphill, he claimed. He reported seeing snow cover near the top of the peak.

The night before the actual race, we stayed at a Motel 6 in Walnut Creek with both our cars to make a switch, Jørgen going on foot from the finish this time instead of biking. It rained a little in the night, just enough to turn the first part of the trail to slime. (It was not as bad as my previous foray into that general area. On Christmas Eve last year I went to the other side of that area to run beside the Los Vasqueros reservoir and thoroughly hated it. I got into the kind of mud that has the consistency of concrete and stuck to my shoes as if held on by superglue. I spent the rest of the day back at the lab walking around barefoot because of the blisters I got. For once I quit earlier than planned.) The first aid station couldn't be set up because the truck with the supplies couldn't make it up the hill so we had 9 miles without aid. The runners were taken around another way, on a single track trail that was so slimy I kept sliding backwards and had to use my hands to get up the hill. (I learned my lesson and went out and bought trail shoes soon after. They have made a big difference.) I tried wearing gaiters to keep the mud out but they pinched my ankles so I left them at one of the aid stations. About 10 miles in the wind was so strong and cold I felt like I could be blown to the Altamont Pass and beyond. It was overall absolutely wonderful and I look forward to doing it again next year. The finish area was great too. They had a band and, better still, a shower house since the park has a pool. I think I was the only one that made use of it though. Jørgen also had a lot of mud trouble for the first hours - like walking on glue, he said.

A week or so later, during Kristina's spring break, I dropped Jørgen off along the Morgan Territory Road (also in the Mt. Diablo park area) so he could hike to Walnut Creek while I was at work. (Kristina spent the day at the Livermore Public Library.) That road is really hilly, narrow and remote through the park land and my gas gauge was standing nearly at empty, making for a very nervous trip. Thanks to my hybrid, I did make it the 15 miles or so to the next gas station. Jørgen had a nice day-long hike to Walnut Creek and we picked him up late in the afternoon.

At the end of March, there was a birthday party/workshop at the lab for the 60th birthday of Miklos, a former member of the LBNL Theory Group, now a professor at Columbia. I wasn't able to attend the talks but did go to the dinner, down at Skates at the Berkeley Marina. I was early and only found Walter Greiner there. We sat at the bar and talked. If I'd been alone, I probably would have ordered a drink but, unlike a good German, Walter took nothing so neither did I. Walter seemed quite mellow and friendly, I guess I've finally been around long enough. Skates is a little bit of a strange place to have a dinner like that, especially one with a talk, because they don't have a private banquet room, our group just occupied the upper level of the restaurant, a couple of steps up from the rest of the diners who could all watch us if they wanted. It was a little cramped up there but otherwise very nice and enjoyable evening.

When we were home again, Jørgen told me that Wladek, Miklos' advisor and one of the founders of the Nuclear Theory Group at LBNL, had recently been diagnosed with pancreatic cancer. (Word of it had just gotten out that same morning). He had been losing weight for some time and had not been getting any serious consideration from his doctor so the cancer was rather well advanced by the time it was discovered. He decided not to subject himself to treatment and spent the time until his death at the end of September putting his affairs in order, including his physics affairs. He had remained active in his research and come in nearly daily since his retirement and, even in September, worked with some of his Polish collaborators who were visiting in the summer. We had celebrated his 80th birthday with a symposium three years ago.

The day after Miklos' dinner, Jørgen and I went off to the Quark Matter meeting in Tennessee, once again sponsored by the University of Tennessee and Oak Ridge National Lab. (The previous time, in 1991, it was in Gatlinburg, in the Smoky Mountains. This time around, with a much bigger crowd, it was in the main conference center in Knoxville.) Since we had such an early flight, we stayed at one of the hotels near SFO and got on the hotel shuttle before 05:00, ugh. There were quite a few of us from Berkeley on the flight. We had to change in Denver and experienced some delay there. I was sitting next to James who was looking glumly at the flight schedules via the free wireless in the terminal and saying in a very dismayed tone that if our flight was canceled (like most others were) there would not be another direct flight to Knoxville for the rest of the day. In other words, we were toast. Fortunately, things cleared up and we still managed to get on the direct flight, still early enough for me to go running before dark and get somewhat lost in Knoxville, having managed to run off the edge of the map sooner than expected. In the evening, we went to the "Welcome Reception" at the Conference Center. There was not a single organizer to be seen (we found out later that they were all partying somewhere else) and only a couple of enormous piles of cheese cubes were there to welcome us, plus a few of bartenders (standing under a huge sign on the wall saying Southern Hospitality) selling us the wine to go with them - some hospitality indeed.

When we arrived, we found that the Knoxville Marathon was just over. Bummer, I would have tried to come a day earlier if I'd known. At least I managed to get a course map from one of the organizers so I could check out pieces of it during the week. The meeting was fun, with some friends there I hadn't seen for a while, especially Kari. Jørgen and I went to the CMS dinner down at the riverfront on Wednesday evening where I had some very nice catfish and a margarita in a glass big enough for a betta to swim in comfortably. Knoxville has some nice trails so the next morning, still feeling the effects of the margarita (otherwise I might have thought it through a little more), I set out to do at least half of the Knoxville Marathon course. I hadn't really considered that it is easier to run a street marathon when the road is closed to traffic and there are signs and course monitors to make sure you don't get lost. Yes, well, I eventually found my way around about half of it, venturing into what seemed to be one of Knoxville's richest areas and finally finding my way back to the trails toward campus and the conference center.

The next day I had made arrangements to go running with Andreas from CERN. We have gone out together several times over the years when we meet at conferences. The first few times I suggested the

route so this time I left it to him. We met early on Friday morning and drove to Oak Ridge and parked just within the city limits. He planned for us to run down along a lake, cross a road and circle a peninsula on trails and then back along the lake again to the car for about 15 miles. Having just done 13+ the morning before, I was not so eager to go a longer distance with a faster guy but how bad could it be? At some point I was ready to hope that it couldn't possibly get any worse. The four miles on the trail along the lake was clear enough but then finding our way into the park area was difficult. When we did start on the trail, eventually, it was muddy and a bit slippery. (At least it was not steep.) In addition, it rained a bit on and off but it wasn't a hard rain. Andreas really didn't have a decent map but the concept was clear enough: go clockwise, staying close to the water and you should end up back where you started, right? Wrong. The peninsula was not a narrow neck but wide and the area was criss-crossed with trails that were not on his map and not marked. We came out to the road far from where we'd crossed it previously and no idea of how far off we were and an equally poor idea of which way to go to get back to the trail we'd followed along the lake. We were lucky to find someone in the parking lot who was willing to give us a ride back to where we initially crossed the road. In fact, he was willing to take us all the way back to the car but since we wanted to close the loop ourselves, we ran the four miles back to the car instead. Looking back, it was fun, if for nothing more than to triumph over adversity. After all, we did make it back in time for lunch. (I've recently been reading about a local Bay Area guy who seems to make it a point to get lost, spending a week lost in some wilderness area after getting off the trail and having no food or water along. Shortly after he was found, he did it again but not for as long the next time. Compared to that, an extra mile or so in the mud is no big deal.)

The food at this Quark Matter was really not all that super, definitely not the finest the region has to offer. We were served the same identical salad for lunch the whole week. (Yes, I am sure that it was prepared fresh each day, it just was prepared exactly the same way every time.) The first day, we had some chicken-pineapple dish with chicken pieces that gave no impression of having ever been part of a living creature. Enough people complained that the organizers got some money back from the caterers. The next evening, we went to some pub where I got a piece of tuna so well done that I thought it was masquerading as a brick. And they had the nerve to suggest that I thought it was too spicy. The spice didn't bother me, the fact that I couldn't chew it did. I will not speak of the box lunch we got for the excursion.

Since the excursion was the same day as the CMS dinner and we wanted to be back on time, instead of joining the bus tour to Chickamuga and Chattanooga to see the battlefields, we rented a car and drove ourselves. (Getting it was a bit of a circus, though: The guy in charge had driven off with the keys to the place in order to take an old lady home and she had slyly made him think she lived close by when in fact it was many miles away.) Chickamuga was the site of one of the bloodier battles of the very bloody US Civil War, with about 50,000 casualties over the course of the battle. Mistakes were made on both sides and though the Union soldiers were driven back to Chattanooga, in the end they successfully held it, a major victory in the south since Chattanooga was an important river port and railway hub. Controlling Chattanooga meant controlling what traveled south through the interior of the country. With so many casualties, there were more soldiers engaged on both sides than live in Berkeley today. We had a little trouble finding the battlefield initially since we didn't realize that it was actually in Georgia instead of Tennessee and was therefore actually not on our maps. We finally made it there and spent some time in the visitor center looking around and watching videos of battlefield re-enactments. Driving around through the battlefield, covering about 7 miles by road, was less informative. The scale was big enough to be confusing and the habit of each unit (corps, regiment, battalion or whatever) of placing as large a monument as it could afford where it spent the most time fighting, making the park look rather like a huge cemetery. (This seems to be the way Civil War battlefields were commemorated in general. I recall my visit to Gettysburg with my mom in 1989, after graduating from Stony Brook, having the same sort of feeling of being overwhelmed by marble and Roman numerals – the unit numbers such as the XVII Alabama etc.) I don't recall anything like it at other battlefields I have visited elsewhere in the world or even from other times in the US. The area around Boston where the Revolutionary War started does not have these sorts of monuments.

From Chickamuga, we drove to Lookout Mountain above Chattanooga and had a look at the visitor center there. Since we still had some time, we went to the Chattanooga aquarium. The aquarium, divided

into a freshwater part and a saltwater part, was huge. The freshwater aquarium was pretty unique and very interesting for us, mainly because we have not been to very many such. There was a lot to see there that was new to us. We spent less time in the saltwater part because it is the type of aquarium that we have typically been to, not because it was less interesting. We can recommend it.

After the meeting, I flew back on my own while Jørgen went up to Michigan to spend the rest of the weekend with Yael, Tamir and Naomi.

At Camporee this year, we worked on the Becoming a Teen badge. Johanna and I got some of the older girls to tell them about what being a teenager was like. Later on, we had a visitor to the troop to talk about puberty. I found her through the CYGNET study and she did a great job. Her name was Buffy and, even though I'd never watched the show, in my mind I kept thinking of her as Buffy the Vampire Slayer. She was very nice and mild, not at all like a 'slayer'. We are very lucky to get speakers at our meetings who are willing to come for free, we couldn't really afford to pay for them.

Part of my time at the Quark Matter meeting was spent frantically trying to arrange some heavy-ion physics talks at a meeting I was helping organize in Denver in mid-April. I guess I'd hoped that someone else would plan those sessions but by late March it became clear that if there were to be such sessions, I had to do it so I was chasing experimentalists representing the various collaborations around trying to get speakers and getting them to book hotel rooms etc. I even made a meeting poster to display at the conference. It wasn't a great poster but it did the job and was much appreciated by my fellow organizers. (You know that your meeting is on a shoestring budget if I do the art work...)

The meeting I was working on was the Third Meeting of the American Physical Society's (APS) Topical Group on Hadronic Physics (GHP). Since I have been member-at-large on the executive committee since January 2008, I was on the local organizing committee of GHP'09, along with Stan (Chair Elect) and Winston Roberts (Chair). It was a lot of fun to work with them, as well as our web guru Susan (who did it all from Jülich, Germany). We held the meeting in Denver, just before the April meeting of the APS. (Actually in May this time, next year's April meeting is in February, go figure.) A couple of other members of the executive were also there so we had a 'working lunch'. Sam, Agnes and Paul were also there. I went out with Agnes, Paul, Gerd, Rene, Hugo and Camelia one evening. We ended up at a Cuban restaurant with very good food but with such low lighting that I had trouble reading the menu. After dinner, most of us went out to a couple of bars that Gerd and Rene had discovered. It was Goth night at the first one and it was not too full. Although most of us were dressed in dark clothes we were distinctly out of place between the pale faces and stark black outfits worn by the regulars. The guys seemed somewhat reminiscent of Professor Snape from Harry Potter. One of them talked to us about how they were playing 'oldies' from the 80's. Can you say 'I feel old.'? We had one drink there and then moved down the street to another, livelier, place that obviously had problems with underage kids trying to come in. Everyone had to show an ID. Of course I hadn't brought my driver's license to dinner, just my credit card which, at the time, seemed more essential. Even telling the bouncer I was probably old enough to be his mother didn't help so I walked back alone. The next day I went out to lunch with Sam and had a good laugh telling him about it because, ever since we met when I was an undergraduate at U of I in Champaign-Urbana, he liked to tease me about my 'drinking problem'. Back then I really didn't drink at all and was only just finding out that there was more to wine than Manishevitz. The previous night, however, my drinking problems was being unable to enter the bar to drink

Our conference rooms were in the basement of the Denver Sheraton with so-so wireless. One place I found to sit between sessions was next to the elevators for one of the towers (the hotel and conference center consisted of two city blocks with the basement area connecting both). It's a little bit confusing when you first arrive and I saw many people dragging their bags back and forth until I just started redirecting them. One was the mom of a former scout in our troop who was in town a couple of days visiting her brother while both were attending meetings. That was a *very* lucky break for me because I left my credit card sitting on one of the computer terminals at the hotel business center when I printed my return boarding pass and didn't discover I no longer had it until I was trying to get it out to pay for parking. Worse still, the card was issued by UC Davis. I called the hotel and found out that they had it and would mail it back for an exorbitant fee but meanwhile I had the idea to call Hallie and ask if she would bring it back. I finally

managed to connect with her and she was kind enough to do so. (I would have paid the fee for mailing it back but wouldn't have liked to try to write it off on the expense report.)

Denver is a relatively nice city for running, with quite a few bike trails. Indeed, the street next to the conference hotel was a pedestrian zone with free buses the only allowed motor traffic for a mile or so. Very nice. The weather was a bit cool still, most likely due to the altitude, but it remained good for the entire meeting.

The timing of the meeting was a bit unfortunate in some respects. Swine flu was really big in the news and some participants were rather reluctant to travel and some reported seeing other passengers wearing masks on their flights. One of the speakers came from Mexico and said that it appeared to be rather mild. He was ultimately right but still it was in the early days and people were more inclined to panic. We were rather lucky that no one seemed to be sick or complained afterwards about getting sick.

I was back home for a couple of weeks after that before flying off to the European Centre for Theoretical Physics in Trento, Italy, for a meeting on quarkonium production. It was originally scheduled to be a couple of weeks later but some of us were also organizing a workshop in Seattle for the second half of June so this one was moved up. I had hoped for the first alternate date which would have ended one week before the Ohlone 50K but the organizers opted for the other alternate which ended on Friday, the same weekend of the Ohlone race. The beginning of the meeting was Memorial Day in the US so I also missed our Girl Scout troop trip, a two night camping trip to the Sierra foothills with a day of whitewater rafting. All family members were invited so it was a rather large group. Jørgen took Kristina and two other girls had also did some star gazing work with the girls on the Sky Search badge we'd started the previous fall. He is a much better person for dealing with a rafting trip. I much prefer to spend my time on firm ground and probably would not have gotten on the river in the first place. While the meeting was actually pretty good, with some little time for discussion possible, the timing was lousy.

Since the last time I'd been to Trento, I'd gone through Milan in the usual way and had my wallet lifted on the way home, I wanted to try a different routing. Therefore I flew in and out of Munich and took the train from the Munich airport to Trento. This has the advantage of being a direct train with no change necessary. It goes through the Alps and is an absolutely beautiful ride. The disadvantage is that it is an Italian train rather than German and even buying a first class ticket didn't particularly raise the level of comfort. I spent some time working and, unlike most modern European trains with tables big enough to hold laptops, these cars had little pull up tables only big enough to hold an espresso.

The flights were good though. I was very pleasantly surprised to find out one of the advantages to having status on United: I was upgraded to business class on both transcontinental flights. On the way home, I even got to sit upstairs on the 747. Wow, I could get used to that. It was a surprise each time. On the way out, I was in the lounge with my boarding pass but when I came to the gate, they took it away from me and said that seat was filled, then handed me another boarding pass which, to my big surprise, was right up front. (Actually, the seats are so big and the seat pockets in front of you so far away it is quite a stretch to reach anything placed there. I really liked the foot rest and the fact that the seat could give me a continuous back massage. Getting the foot rest out was easy, putting it away was hard.) [I like having status on United so I try to do all my flying on that airline. Since this was the only trip I took outside the US all year, I was thrilled to get a double elite miles offer later in the year to keep my status, especially when I will have more trips outside the US next year, both making it easier to retain it for the following year and allowing me to make use of the lounges when taking international trips, worth its weight in gold for sure.]

This time my hotel was just across the street from the church where the Council of Trent was held. I wanted to go in and have a look since I'd neglected to that on previous trips but this time it was closed for renovation. The hotel room was tiny and more expensive than the place I'd stayed last time when I'd had an apartment just under the roof. Oh well, at least the stay was short. The breakfast could be taken outside in the courtyard so that was nice. I enjoyed running there, as usual, even though I didn't have the time to do anything really long and, since I'd be doing the Ohlone race immediately after returning, that was probably a good thing. After I first arrived and checked in, I went out for a run and got caught in a hard rain before I could get back. At least it was warm.

It was sort of sad to have to leave the meeting early even though I'd be seeing many of the same people only a few weeks later in Seattle. On the other hand, there was no way I was returning Saturday night for a Sunday morning race. I left after lunch on Thursday to take the train to Munich. I found a hotel in a little Dorf a few kilometers away from the airport. It was such a small village that I think there was only one pub in town and hardly any shops, at least not in the vicinity of the hotel. Since the weather was fairly lousy by the time I got checked in, I just ate in the hotel restaurant. The tables were family style so I was seated next to a couple of guys who left soon after. While there was no fish on the menu, there was at least some chicken that was actually rather good. I had enough time in the morning to go for a run through the fields before going to the airport. I got some chocolate at a large grocery store just outside the terminals where the prices were really pretty cheap, at least considering how expensive food is at SFO. Ever since the airlines pretty much stopped free meal service on flights and the liquids regulation makes it impossible for you to carry your own drinks into the boarding areas, the airport caterers seem to feel free to engage in price gouging. I try to bring my own food from home but have to suck it up and pay about \$3 for a 20 oz. bottle of soda, nearly twice the price in the grocery store.

I got home Friday evening and, by Saturday afternoon, was off to Livermore for the Ohlone run. Jørgen and I came in two separate cars so we could have one at the start (left by me) and the other at the finish (left by Jørgen) and switch since, by the end of the day I would be at the finish and he would be at the start. We stayed at America's Best Value Inn in downtown Livermore, close to the finish. It is no prize but for \$50/night, it's a bargain if you just want a place to crash (and right across the street there is a Safeway and a Starbucks that opens 5:30); I used it as such in late October when I had a LLNL-sponsored conference dinner at a winery and had to be in very early the next morning. It ended up costing quite a bit indirectly since my cell phone fell out of my pocket and into the toilet, getting fried in the process. We had dinner with Jon and Debbie at their home in Livermore. No wine for us though, pre-event. It was really nice. They really have a lot of space in these newer developments where converted farmland is less expensive and easier to build on than the steep, tiny lots available in Berkeley.

We had checked out of the hotel by 05:30 the next morning. For the first time, the race directors were offering an early start option and, even though I didn't need it, I took it because I was worried about possible effects of jet lag on my performance and wanted to make it as far as possible before starting to feel bogged down. Just as well since I was at the start area by 06:00, even before the start was set up, so I helped with that. The early hour and the unreality that comes with switching nine time zones in a day contributed to a sort of dazed feeling on my part that I described to a friend as akin to having beamed down from the Starship Enterprise without being told I was going anywhere. Hanging around for an hour before starting was bad, waiting another hour for the regular start would have been excruciating. It was also pretty amazing to see how many people were on the mountain already. Apparently a popular thing to do on a weekend in Fremont is to climb Mission Peak before sunrise to watch the sun come up. The parking lot was overflowing when I drove up. After I started, I was running with a guy until quite close to the top of the peak. We met someone making his way down who told us that we were almost halfway (presumably assuming we were running up the mountain and then down again). He looked quite surprised when we said we were only getting started and were only about 1/10 the way along. I was doing really well most of the way, so much so that I felt more like I was cheating even though I had a legitimate reason to take the early start. Then came the trek down to Williams Gulch from Schlieffer Rock which I did with some kind fellow. When I starting climbing out of Williams Gulch again, the jet lag hit (it was 23:00 in Trento) and I really, seriously wanted to take a nap right there on the trail but instead I had to face the last steep ascent of the course. The Ohlone course is just unrelenting (climbing a total of 7800 feet, and dropping a similar amount, over its 50k length), maybe one reason why I keep doing it. The guy I'd been with previously was so worried by my phase change from alert and talkative to dead tired that he sent someone back from the last aid station to check on me. It was kinda embarrassing, especially because by the time they met me, it was downhill (almost) all the way and I'd recovered. Even if not, inertia would have kept me moving down to the finish at that point. I resolved I'd rather not do an international trip before the race again. (I haven't really learned though since there is a meeting I'm organizing scheduled before next year's race but at least I'll be coming back from Chicago, not Italy.)

Kristina had her 5th grade graduation at the beginning of June. It was pretty exciting for her to be able to move up into the upper school for the following year. The ceremony was combined with Kindergarten graduation and, as such, was quite special since her class was the first Kindergarten class the teacher had had at the school. There was a little extra bit in the ceremony to celebrate that.

I was one of the organizers of a workshop at the Institute for Nuclear Theory at the University of Washington in Seattle that ran for the last couple of weeks in June. The workshop was about quarkonium production so a lot of my physics friends in that field were there, including Helmut, Carlos, Hermine, Peter, Agnes, Tony and Mike. Most of us had been together in Trento only several weeks previously and this workshop was a great opportunity to continue the discussions started there. (Initially, we weren't sure how it would work out to have two such meetings so close together but it was actually pretty good since, at least in Seattle, we had time to actually work on the things we'd been discussing in Trento.) In any case, I always like going to Seattle because it is a beautiful place to visit and gives me a good opportunity to see my friends in the area. I flew up from Berkeley on a Monday afternoon since the workshop was to run from Tuesday until Friday of the next week, giving a weekend in between which I made good use of.

The first week of the INT program was also the first week that school was out and Kristina went to our local scout day camp in Tilden. This year she and the other girls from our troop had training to become program aids next year. As such, she got to choose a camp name which was pretty exciting for her. We discussed a couple of possibilities over the phone and she finally decided on Tweety, that little yellow bird with the enormous head. (At least it is recognizable immediately, it turns out that many people don't realize that my name, Charm, is from physics and think of 'lucky' charms like four-leaf clovers and horseshoes.)

I stayed at the University Travelodge once again. The apartments aren't looking any better but at least there is a kitchen and working wireless. It's right next to one of the major biking/running routes in the north part of Seattle and across the street from a mall with a huge grocery store (QFC) and an almost equally big bookstore plus restaurants in abundance. What more do you need? (Actually, I needed space: they put me into a one bedroom apartment on the lower level at first with no work space. A little bit of negotiation netted a two bedroom with kitchen table one floor up for the same price. Since Jørgen and Kristina were joining me for the last couple of days, I did actually need the space and didn't want to deal with having to move later.)

Our meeting started out with two days of intensive talks, followed by no more than 2-3 talks/day the rest of the time. For those two days, we wanted to have coffee and snacks for the participants. When we found out it was going to be \$35/person to have someone else handle it, Peter and I decided to do it ourselves. The INT would reimburse me if I bought snacks and would provide the coffee if we'd make it. Peter took the coffee, I did the snacks. That meant getting muffins, pastry and cookies from the QFC and arranging them on trays at the appropriate time. The plus side was sitting in the very back of the room, near the kitchen, and sometimes using the need to putter there as a convenient excuse for not sitting through the last round of arguments. Maybe not exactly the best way to handle things but we were very hands on, quite cheap, and - bonus - I got to choose so it was guaranteed that I'd like/eat what was left, glutton that I am. We also arranged a dinner the second evening at Ivar's near the campus that one of us had to take responsibility for. It was a little chaotic but, by putting 26 meals on my credit card, I managed to snag lots of cash for our upcoming vacation. I didn't have to go to a cash machine for more than a month.

While still on my own, I had dinner with Asmus and Laura at a nice Indian restaurant not too far from their house. It is always nice to visit them and catch up. Joe was able to come down one afternoon and take a walk around Green Lake with me. We had a snack at a picnic table, watching the stream of people going by and remarking on how different our lives turned out than we would have expected when we were kids eating lunch together at school. It is interesting that most of my best friends from high school were a year behind me. Tina, Matt and Brian are about the only ones from my year I ever see.

The weekend was really busy, just not so much for physics. When I realized I'd be there on my own over a weekend, I started trolling around for a race in the area. I knew there were several marathons up there in June but, for some reason, didn't find any of them. I did find a *very* fast 50K though, the second half of a 100K. I briefly seriously considered trying the 100K but the logistics would have been almost undoable and

I didn't want to destroy myself for the rest of the workshop so I signed up for the 50K instead, the third one I'd paid for this year (aside from the ones I didn't pay for), a record for me. The course was mostly laid out on old railroad beds, starting near Snoqualmie. Mike solved my logistics issues by agreeing to take me to the start and waiting for me at the finish. Because the 50K started from the midpoint of the 100K, to make things easier for the aid station crews, the 50K didn't begin until the crack of noon so I could sleep in for a change. Nonetheless, we left at 10:00, just in case we had trouble finding the start. It turned out to be a rather small affair, about 14 people each doing the 50K and 100K, basically at least as many, if not more, people were manning aid stations over the whole course than running it. Despite being June, it was rather cool and sort of foggy/damp at the start, even at the middle of the day. The first 10 miles or so was on a gravel bed, followed by paved trail for the middle part where we went through the town of Snoqualmie, and ending with a gravel trail again. The organizers were pretty ingenious and, realizing that some people just can't help taking down pink ribbons or other course markings, told us to follow the signs that said 'Lost Dogs' with pictures of two beagles named Mutt and Jeff on them. Nobody takes down a sign saying 'Lost Dogs'. (There were standard ribbon markings away from the more inhabited areas.) Since the course was really pretty straightforward for much of it, markings of any kind could be rather few and far between. Nearly the last 10 miles were on a fairly flat and straight gravel bed with almost no road crossings, interrupted by one aid station about 6 miles from the end. I knew I eventually had to get off and cross (under) a road but there was not a single marker after the aid station until the turnoff and, since everything looked the same, I had almost no concept of how far along I was. It's hard to judge just from time since I often start to drag a little bit near the finish and couldn't tell how much my pace might be slipping. Then, finally, after seeing NO ribbons for miles, the course went under a low road bridge next to a stream and through an area where quite a few trees had been cut down and almost every single one was marked with various colored ribbons. It was a bit of an overload for my poor little brain and I almost missed the last turn to the finish. I had sort of hoped to finish in under 5 1/2 hours when I realized I was running pretty well but of course I missed that mark, finishing in 5:33. Since I originally wished to do better than 6 hours, I couldn't complain. Mike was there waiting and he seemed to have been hanging out there for quite some time. Ultrarunners are a pretty laid back bunch so he'd had a reasonably nice afternoon.

I didn't want to hang around too long afterwards since we'd made plans to go out to dinner with Helmut. We went to Etta's downtown and had a really great meal. Since it was Saturday, I hadn't held out much hope for a same evening reservation but we managed, thanks most likely to the stupid economy. Mike's dinner was on me for blowing his day hauling me around. We had a fun little excursion getting back to his car afterwards. He'd brought his GPS from Los Alamos and, while useful for getting downtown, had a bit of an annoying intonation. He also had a GPS on his phone. Still we couldn't find the car for some time. (It reminded me of a time when I was a postdoc in Germany. Some friends had parked my car in the garage under the Luisenplatz in downtown Darmstadt. We'd met up and then paid for parking before heading down to get the car. My friend, who did orienteering as a hobby, couldn't find the car back. We took so long that we had to pay extra to get out of the garage...)

Sunday was very busy too. I met up with a running buddy who had moved to Seattle a year ago or so. She was planning to do the Seattle Rock 'n Roll marathon the next weekend so didn't want to do too much. I didn't mind because I could feel the 50K a little bit in the morning. Good thing too. We had to stop various times while she adjusted clothing, talked on her cell phone and consulted maps. That kind of stop/start style makes me crazy. I wanted to tell her to please focus but held my tongue and was grateful I'd done 50K the previous day. Otherwise I might have had steam coming out of my ears. We parted after the run and I spent the rest of the afternoon out and about. I went to the Burke Museum on the UW campus first, a place I'd wanted to go for years but never managed to take the time to get to and with the visiting scholar ID card from the department, I could get in for free. It isn't all that big but it was really good in the areas it concentrated on: fossils from the Northwest and native artifacts from all over the Pacific Northwest. It was all very interesting and well done. Then I hurried to a nearby multiplex to see Angels and Demons, the latest Dan Brown/Tom Hanks-with-funny-hair movie. It is supposed to have something vaguely to do with physics and the beginning takes place at CERN: not one I'm familiar with but the Hollywood version where all the buildings look new and physicists hang around in control rooms in

the tunnel next to the LHC beam, even when it is on – yeah, RIGHT. (No sarcasm at all.) Then there were two lines that really soured the whole thing for me. Physicist 1: “CMS and ATLAS are on line”. Physicist 2: “I hope the heavy-ion guys didn’t screw up”. I made such a rude comment that the guy in front of me turned around and stared. If you don’t think, it’s a relatively painless chase movie with far fewer religious boners than *The DaVinci Code* but about the only physics thing they got right was that antimatter exists. The idea that you can keep enough of it around to make a bomb is unbelievably stupid.

Jørgen and Kristina came up by train to Seattle. They left Tuesday evening and arrived on Wednesday evening. Amtrack doesn’t own the rails so they had to wait for the freight trains in some cases, spending about 2 hours near Medford, OR. All that seems sort of built into the schedule though so they were not all that late. I sneaked in and did laundry at the University Inn, on the other side of campus, where some of the other guys were staying instead of going out to eat with them and then waited for the rest of the family back at the Travelodge. The next morning, I ran out to Budget to pick up a car for our vacation. It was pretty expensive since we were going to drop it off in South Dakota and not all rental agencies even had a location in Rapid City, SD. So beggars can’t be choosers held in this case. Jørgen and Kristina went to the zoo in the afternoon while I went to the INT for the last full day of our workshop. With the freedom to drive, we went to Judy and Jay’s house for a fantastic meal. We would have felt pretty well treated with the ahi tuna we got as an appetizer. Kristina watched movies with their kids while we feasted. They’ve got a great location for their house too, pretty much vertically up from the I-90 bridge across Lake Washington and the open view lets them see the Cascades and Mt. Rainier (when it isn’t too cloudy – I hardly got a glimpse of it from the INT this time).

Since the bicentennial of the Lewis and Clark expedition began in 2003, I had been interested in reproducing at least some of their trip ourselves. We had talked about it for some time and decided to make it sort of a theme for our summer trip since we would be starting off from Seattle after my visit to the university. While we didn’t visit either the western end (Fort Clatsop in Astoria, OR) or the eastern end (St. Louis, MO) of the expedition, we did cover a good bit of the middle with a number of other interesting stops. Of course, we could not directly follow their route since they were mostly traveling by water but the trip gave us some idea of the area they traveled through.

We started out from Seattle shortly after noon on Friday. We didn’t plan to go too far but were eager to get started. Our first stop was at Snoqualmie Falls, where I’d run just the weekend before but didn’t bother to look at the falls on my way through. We sat down on a bench overlooking a few of the falls to eat some lunch, one of the few noon meals we actually ate while not in motion. From there, we went southeast into the dry end of Washington state. Our goal was to get to LIGO before the end of the afternoon.

LIGO is an acronym for Laser Interferometer Gravitational-Wave Observatory and searches for evidence of gravitational waves. Gravity is the weakest known force in physics, many times weaker than the other three type of force known (so far): the weak force that is responsible for β decay and analogous conversions of elementary particles; the electromagnetic force (electricity and magnetism); and the strong force that holds atomic nuclei together (we study the physics of strong interactions by means of nuclear collisions). All these other interactions are mediated by the exchange of some “field quantum”: the massive W and Z bosons for the weak force, the massless photon for electromagnetism, and the massless (but “colored”) gluon for the strong force and it is expected that gravitational interactions are also mediated by a field quantum. It is called the *graviton* (for lack of a better name) and it has not yet been detected. LIGO wants to document the existence of gravitational waves, that they travel at light speed, the same as other massless particles, and determine the properties of the graviton. LIGO sits in the Washington desert (there is a sister lab in Louisiana), part of the Hanford Nuclear Site where uranium was enriched in during WWII to use in the first nuclear weapons, developed in Los Alamos. It is now a lab doing other things as well but that is its origin. LIGO is sited there because it is a rather remote area (good for reducing background vibrations in the earth *e.g.* from traffic), the government owns the land already, and it is fairly flat, good for laying down long beam lines. It works as follows: A powerful laser beam is produced and split into two separate (but in-phase) beams that are sent along two mutually perpendicular beam lines (presently 2 km long, to be expanded to 4 km), at the end of which they are reflected by mirrors and sent back. When a gravitational wave (coming from a violent event far away, such as collision between neutron stars or black

holes) passes through the area the two laser beams are disturbed slightly but differently, thus bringing them out of phase; by monitoring the resulting phase shift, the physicists can then determine not only the arrival of the gravitational wave but also the approximate direction from which it came (further accuracy is obtained by comparing the data with the simultaneous observations made at the sister laboratory). LIGO is thus a different sort of telescope. Gravitational waves have very long wavelengths (since they are produced by large bodies) and correspondingly low frequencies, and so to capture enough of the wave to make a measurement, the arms must be long. They are rare as well so background subtraction is very important since there are many sources of vibration, even in a rather remote area. The traffic is light on the site but it is not absent and heavy trucks moving around on site cause vibrations in the ground. In addition, there are microquakes (mini earthquakes) happening all the time in a seismically active region, as Washington State is. Even though we can't feel them, they are still there. To reduce such noise further, the entire LIGO will be equipped with upgraded shock absorbers over the next several years.

We were lucky to have an 'in' there: the director, Jay Marx, who sits in CalTech in Pasadena, went there from the Nuclear Science Division at LBNL and knew us for years. When we first drove in, we couldn't find anyone since it was rather late in the afternoon (and it was Friday) and the visitor center had closed early, but there was some loading going on behind the building and after talking to the workers someone finally emerged. He seemed a little reluctant to deal with us at first, but that changed entirely when we mentioned our 'friend' Jay. We actually go to go into the detector control room and watched their displays of the continual noise being picked up by the detector system. They seemed quite pleased to have us there for a while, it's not every day a couple of physicists just 'show up' for a visit some place like that, and we had a very interesting time with one of the scientists there. We finally had to leave to find a place to stay. We'd spent long enough there that we didn't want to try to go much further, pressing on into Oregon, but instead found, with some difficulty, a hotel in Richland, WA. There was a lot going on in town: a car show, complete with parade; a Renaissance Faire; and some other events that I didn't quite register but were enough to fill up almost all the area hotels. It ended up pretty well anyway, our hotel was next to the river, complete with a great river trail, the first of many on this trip, and only a couple of minutes walk from a really nice restaurant. We had a table by the window where we could watch the sun go down.

I found out about the Renaissance Faire when I went running on the river trail in the morning: part of the trail was blocked by the faire. Some of the participants didn't bother with hotels and stayed in tents inside the area. It was kind of fun to see them crawling out of their tents in their idea of 17th century outfits. Lewis and Clark had come this way along the Columbia River on their way to the sea. From Richland, we soon crossed the river into Oregon and spent the day driving through OR to reach Idaho for the night. We made two interesting stops along the way. The first was in the visitor center on the Tamastlikt reservation. It presented some bits of Indian history, both before and after the European settlers began arriving. The displays were very good and interesting. The center is near the area where the Whitmans set up their mission in the early 1800s. They wanted to prove the power of God over the Indians' beliefs and helped treat the Indian illnesses. Their downfall came when an epidemic went through the area and many Indians died. When they saw that the Whitmans were not all powerful, they killed them and the other settlers nearby.

We spent quite a bit of time there before moving on and were worried about it getting very late but still managed to make one other stop, at the Oregon Trail Interpretive Center in Baker, OR. The center is really well done with exhibits for kids, including how to pack your prairie wagon and the choices you'd have to make to make such a move in those days. Not only did you have to bring your personal goods but also quantities of foodstuffs like salt, sugar and flour – not too many grocery stores out there if you run out. I imagine you've heard that the ground was so rutted by the wagon trails passing through that some of the ruts are still visible today. Well, the center sits on a hilltop just above one such location. We went down for a closer look and met a woman and her daughter in the parking lot. The woman said her grandmother had come west in such a wagon.

From there we drove all the way to Mountain Home, ID, a bit behind our schedule, especially since we'd crossed from Pacific to Mountain time when we entered Idaho, making everything an hour later. We weren't all that impressed with Mountain Home but really didn't want to go any further that night.

When we'd arrived in Mountain Home, I asked the hotel clerk where I might find a place to run and he suggested a dirt road he often biked on. He said no one lived out there so it would be a good place. It was nice enough but when I was on the way back, I saw a truck pull up along the side of the road and a guy with two dogs get out. Naturally the dogs wouldn't leave me alone. He was apologetic and said that of course he brought his dogs out there to run because no one lived out there, the same reason I was there but I thought no population would mean no dogs either...

We had time for one stop before pressing on to Yellowstone. That was at Craters of the Moon National Monument, a really fascinating place but, coming to think of it, probably aligned with Yellowstone, at least geographically speaking. It is a volcanic park, with lava flows from at least half a dozen major eruptions creating bizarre formations, cinder cones and a forbidding moonscape. We took several hikes around, including up one of the cinder cones where Kristina tried to race me to the top after whining about having to walk uphill in the first place. There were some growing plants in a few places but none of them looked all that healthy. (The connection to Yellowstone comes through the volcanic activity of course. Yellowstone is a supervolcano, sitting over a huge hot spot that has moved over time. The hot spot under the Craters of the Moon has moved somewhat over time and is certainly related to the one under Yellowstone. There was a really interesting article in National Geographic about the Yellowstone supervolcano, check it out!) One of the last things we looked at in the park was the 'Ice Cream Cone', so named because snow collects in it and does not melt since it is low down and well shaded.

Since the volcanic landscape was so fascinating, we spent far too much time in the park for a sedate drive to Yellowstone. Therefore Jørgen attempted to set a new land-speed record for a Camry. Uh-oh. We were noticed by the police, probably the only guy on patrol in a 50 mile radius, just our luck. He was rather kind but still issued a speeding ticket. A little negotiation was necessary to make sure we could get it paid after we returned home (it was Sunday morning, so the Arco court house was closed and we couldn't pay there, and it would be too late by the time we had returned home (we had not brought our checkbook, so we couldn't mail a check while away) but at least the policeman was kind to speeding tourists. *[This is really not how it happened. In fact, I simply didn't notice the speed because there were no good reference points along that wide open country (only beautiful blooming green fields around) and no other traffic (except for the police car which was far away coming towards us and didn't at all look like a police car) and, moreover, we were all preoccupied with Kristina's quest to observe licence plates from all 50 states in the course of the trip (we were trying to come up with the states she had missed on her list) - the kind policeman told us that he also used to do that when he was a kid.]*

Our late approach meant we had to abandon driving up through the Teton range, instead entering from the west, so we didn't get much of a view of that mountain range. In fact, I was a bit surprised that we didn't see more mountains, maybe because we were already quite high and you had to be outside the huge caldera to see anything higher. After passing through the entry portal, we realized that this tourist magnet probably had cars with license plates from most of the 50 states plus Canada so Kristina had a good harvest there. We indeed got most of them while there with the exception of Hawaii (big surprise, not), Delaware and Rhode Island among a few others. (We did see at least one Alaska plate since it IS possible to drive from there to the continental US. If it was possible to drive from Hawaii, there's a good chance we would have seen a car with those plates as well.)

We stopped in the Norris geyser basin before going on to our destination in Canyon Village. Kristina didn't like the smell of the geothermal activity AT ALL and complained quite a lot about having to go anywhere near them. She was not averse, however, to getting her national park Passport stamped, as she did many places on the trip. I have to admit the smell is hard to take but it is still fascinating to walk on the boardwalks between bubbling mud pools, thermal vents and steam pits. Just don't breathe too deeply.

We finally arrived at Canyon Village where we got a very nice cabin a little way from the visitor center and dining room. It was not too big but big enough to move around without tripping over each other or our stuff. Even though we could walk to the dining room, we were told to worry about bears so we drove every time. We were in the forest with no real apparent reason for why the place should be named Canyon Village: there was no evidence in sight for any canyon nearby. We did go to a ranger program the first night and heard about the Grand Canyon of the Yellowstone, apparently less than a mile from us. The

mosquitos were fairly troublesome and it got rather cold so we decided not to do that again. I was sitting next to a couple of Hispanic women from the campground that Sunday evening. We met them once or twice again during the visit. Once they told us that they'd driven from Connecticut starting Friday to get there. Whoa. Another time they were generous enough to give me some bug repellent to keep from being eaten alive.

One rather remarkable thing about Yellowstone is that the cell phone coverage is amazingly good. We speculated that it was to allow people to call for help in the more remote areas if they got into trouble. The park is so big and the roads so few that it's easy to imagine not being able to easily find a ranger otherwise.

That first morning I went out to run along the canyon rim, the first morning of the trip that I was worried about what animals I might meet. I was a bit wary about the bears but figured I had only one direction to watch for while running along the canyon rim. It was quite nice on the trail but on the way back, I decided to stay on the road. Once in the parking lot I saw two large bison/buffalo grazing across from the bathrooms. I slowed down to not disturb them.

The bison sighting was a good start to the rest of the day when we went around the bigger loop road. We hadn't gone more than a couple of miles down the road when we spotted a bison in the road, making a big traffic backup. It finally moved, walking next to the road for a while so we could take some pictures. We thought seeing one so close up like that was really great but in a couple of minutes forgot all about that one since just a little further along we could see what seemed like all the rest of Yellowstone's bison gathered in one place. We stopped for quite some time to watch them all. It was really fascinating, there must have been more than a thousand of them, and the closest ones were just a few steps away. We stayed there quite some time, simply observing the herd. It is hard to imagine how it must have been when the plains were covered with herds up to a million strong in the 1800s, surely a breath-taking sight.

Kristina had gotten the Junior Ranger workbook before we set out and managed to fill almost all of it out in the course of the day. It had a part for each of the main areas along the loop road and since we spent time at all of them, she was able to find what she needed. There is a big lake near the middle of the park that feeds the Yellowstone River which passes behind Canyon Village. It was quite peaceful to sit there since it is not so crowded as the area surrounding Old Faithful which was a complete zoo. Parking there was a big problem and then getting near enough to Old Faithful to see anything was another challenge. With a short set of bleachers, an approximate timetable, and the huge crowd, it was more like watching a sporting match than a natural event. Part of the ranger workbook included timing the eruption to estimate when the next would take place. This was a rather long one so it meant that the next one would be in 45 minutes rather than half an hour. We picked up some lunch and went for a walk on the boardwalk around the thermal area, Kristina complaining bitterly about the smell all the while. It was tough to find a place to sit and eat since Kristina didn't want to be anywhere near anything steaming or stinking and that excluded almost everywhere on the trail. Finally we sat down on the boardwalk facing a couple of trees, probably the best smelling place in the immediate vicinity. We watched someone placing flags out in the thermal area and wondered what it was all about. It turned out to be a ranger documenting the locations of some native plant species. Since there were several different colored flags, I asked if they were color-coded to match a particular plant species and she said no. We finished up the walk just in time to see Old Faithful erupt again. That geyser was definitely Kristina's favorite thing in the park especially because it didn't have much smell. I think the area was really very interesting from a geologic point of view but the crowds didn't make for much of a nature experience.

Before going back to our cabin, we went to check out the Grand Canyon of the Yellowstone, right in our backyard, so to speak. While nothing like the Grand Canyon of the Colorado (the big one), it is still pretty impressive. There were a few places to stop and walk out to viewpoints, a relatively peaceful end of the day.

The next morning, Jørgen and Kristina went over the visitor center to turn in her Junior Ranger book and, while there, found out that if she did 10 hours of educational activity, she could earn a National Park Girl Scout patch, new this year. She had about half the time left to do so we went over and did the geologic workbook from the visitor center before dinner one evening.

We got an earlier start the next morning to do the north loop since I planned to go running the last 12 miles of the loop while Jørgen and Kristina tried to go horseback riding. The north loop was shorter so it

was a little more relaxed. We stopped at the base of a road up to a mountain overlook, just outside the caldera rim with a fantastic open view since it was one of the higher points in Yellowstone, an already high area. Jørgen and I walked up a little way up while Kristina stayed in the parking lot. It was actually quite cool up there since there was still a bit of snow so it wasn't so nice for her to hang around.

Near the Roosevelt Lodge, we went out to hike a couple of miles to a mountain lake. I was hoping we'd see a moose there since a ranger had said there was one in the area. Even though we didn't, it was a great hike, not too hilly and not too many bugs.

We spent quite a while at Mammoth Hot Springs, just inside the north edge of the park. This was one of the first inhabited areas of the park since the army was stationed there to patrol the park in the early days of the park, before the park service existed. It is also a thermal area with some very interesting terraced formations. Kristina didn't want to go anywhere near the formations, unfortunately, because she again didn't like the smell and didn't want to walk up hill.

They dropped me off at Norris relatively early in the afternoon to do the horse ride at 3:30. It was cooling off, unfortunate since I only had a singlet on top. In addition, the sky was getting dark with finally some thunder and lightning. I was getting fairly nervous about being out in the open if a storm came up and finally gave up and hitched a ride. I felt bad about chickening out, especially since I realized the next morning when I went out again that I'd quit only a couple of miles from the Canyon Village intersection and, in the end, the weather didn't really amount to anything until much later. The thunder and lightning also terminated the horseback ride early so we all got back to the cabin earlier than expected. The stables offered them a chance to go again the next morning for free but they ended up deciding not to do it.

We had a little mishap after dinner in the dining room that night, unfortunately: Kristina was wearing open-toed shoes and was walking a little too close behind me when I had to stop suddenly and I ended up backing up onto her foot. It swelled up and made it rather painful for her to walk for most of the rest of the trip.

The next morning we left Yellowstone. On the drive out, I kept hoping to see a moose in the wetter areas and Kristina kept making fun of my desire. We didn't see one but we did see a couple of elk and one bear. Thankfully, I wasn't out running at the time. Driving out to the north into Montana really emphasized how high up the Yellowstone caldera is since we seemed to go downhill for a very long time.

Upon leaving the north entrance of Yellowstone we drove to Bozeman to the University of Montana, Bozeman museum. Since Bozeman is the home of Jack Horner, one of the premier paleontologists, the dinosaur exhibit at the museum gets high praise. It was really, really worth it, the most up-to-date such exhibit I've ever seen. Some of the models came complete with feathers, as new work has shown the closer relationship between dinosaurs and birds. (I'll never look at a chicken the same way again.) Also, maybe you've noticed, maybe not, but many long-necked dinosaur fossils have been discovered with their necks bent back and twisted. I always thought that they got that way because of some movement after death, such as a fall or being washed downstream or other water action or even because of rigor mortis. However, new research has shown that it is because they were suffocating and convulsing, dying in agony. No sugar-coating there. They also had a great collection of eggs and some of the best triceratops fossils I'd seen, enough to put together the whole life cycle, from near birth to maturity. Very, very cool. Sadly, Kristina didn't want to walk around much due to her sore foot and I'd carried her through parts of the exhibit. Finally, at some point after I'd finished with the dinosaurs, I couldn't find either her or Jørgen and started to panic. I went to the parking lot at least twice to make sure the rental car was still there and zipped through the rest without really seeing it, including a group of outbuildings, a replica of an old Victorian-style farmhouse. It turned out that they were in the planetarium show and appeared shortly after it was over. Since she didn't feel like walking around any more, we left and went to find lunch. We got a great deal on sandwiches at a local grocery store before heading out on the road again.

We stayed in Missoula that night, finding a so-so hotel next to the river and the local Albertson's so Kristina could get dinner there rather than walking to a restaurant with us. The restaurant was in another hotel a short walk away. I met Jørgen there after my shopping trip and found him talking with a Danish couple also waiting for dinner. We had a very nice chat with them. They were nearly finished with their trip while we were still in the early stages. The food was great, some of the best we had on the trip.

We got off to a late start to our weekend in Glacier Friday morning, thanks to numerous idiotic decisions on my part. (Idiotic, true, but it made for a nice run even though I was worrying all the way about how late I was.) At dinner the night before, Jørgen and I had watched people hiking and jogging up to the big M (probably for Missoula but it's not clear it was the case since there was another letter across the way on another hill) and while I thought he was suggesting I try it, he was saying I shouldn't since I'd likely freeze on the way down. He was right, it turned out that the path up was rather crumbly and a little too narrow for my taste, especially the part where I had to use my hands to get all the way up to the top of the M. Someone I'd met had pointed out that the trail continued to the top of the mountain but there was also a Forest Service fire road to take down. That was true on both counts: the trail up the mountain was much better than that up the M but the top proved to be much further away than I'd expected and I had to give up and, likewise, the fire road was great but brought me down about 2-3 miles out of my way. Nobody was terribly happy with me when I finally showed up, myself included, even though it was an exhilarating run, one of the few times on the trip I really felt free while running (aside from the voice in my head shouting "You're LATE").

It only took an hour or so to get to West Glacier after all that since even the side roads in MT have speed limits of 70 mph, far too high for the road we were on in my opinion. Since Glacier park is so big with the things to see so spread out, it turned out to be fortunate that we had been unable to get reservations in the same place for three nights and were spending the three nights in three separate locations; we got more out of the whole park that way.

Our first night was spent in Apgar Village, at the western end of Lake MacDonald. We arrived so early that the room was not even ready yet and so spent some time at the visitor center (so Kristina could begin the Junior Range program there) and making reservations for Jørgen and Kristina to go on a two hour trail ride the next day. The lodge was very nice albeit a bit dark inside since the walls were dark wood and the furniture was similarly dark, but it had a superb view east over the lake towards the high mountain pass. We had two rooms, one bedroom/sitting room just inside and a smaller, inner bedroom. After our initial trip to the visitor's center, Kristina breezed through the Ranger workbook so she and I went back to try to get her GS National Park patch. The only hitch was that they'd never heard of it and asked her if she'd like a Boy Scout patch instead. No. After calling around all over the park, it appeared as though no one else had heard of this patch let alone had one so they took our address and promised to get us one as soon as possible. (They kept their promise. Soon after our return, Kristina got a big manila envelope from the Department of the Interior that contained the patch and a letter congratulating her for receiving the first GS ranger patch issued in Glacier. Never mind she did most of it in Yellowstone.)

Meanwhile, Jørgen had negotiated a canoe rental so they could go out on the lake. After getting a bit wet settling in, they had a great time. I would have been too nervous, even with a life jacket, to enjoy it very much so I went back and harassed the rangers some more by asking where to find a good place to go running the next afternoon. They all looked like they'd swallowed something very sour. It turns out that, among park personnel, the number one item on the list of 'Most Dangerous Things to do in Glacier Park' is 'Going trail running alone'. The only bear attack of the year so far had been on a runner on one of the very trails I'd mentioned. By the time I left the visitor center I was still determined but so nervous I couldn't really relax during my solo walk around a half mile loop trail by the visitor center since a mother bear with a cub was seen almost every day in the area. It wasn't until I met a group returning from a nature walk that I started to breathe again.

It was a pretty slow day since we didn't have to drive very far and there were no big hiking possibilities we could take with Kristina since her foot was still hurting. Therefore, we had time to relax at the lodge. It is right on the edge of the lake with an absolutely amazing view of the mountains to the east, framing the lake on both sides. We sat on the deck/corridor and watched the water for a long time. The water was so still that the sound of the waves lapping onto the small stones beneath us was soft and soothing.

The next morning we had plenty of time to get going and, as an oddity, had breakfast together in the same diner we had dinner in the night before. (The odd thing was that we had breakfast all at the same time, not particularly that we had breakfast and dinner at the same place, especially when it is the only place in town.) We only had to drive about 10 miles down the road to Lake MacDonald lodge to reach our

destination for the evening. On the way, we stopped several places to look around and then stopped for a hike up to a lake situated in a glacial bowl. There weren't particularly many glaciers to see since most of them had receded or melted completely in the last twenty years. However, we did see a large deer on the trail and stood watching it, among a gathering crowd, for some time. Then some people came hiking down with a dog that got it to move off the trail and we continued on. It was pretty annoying to see the dog on the trail, even on a leash, since it was expressly forbidden. I didn't start an argument with them though, it seems to me that anyone with an animal that can bite has the upper hand. Kristina stayed down with the car since her foot was still bothering her. The necessity of getting back down to her within the time frame we told her meant we didn't get to spend as much time up there as we would have liked.

When we got back down and to the lodge, we had high hopes for it since it was a magnificent looking place with a huge lobby/lounge and a small beach out front. The horse stable was on the other side of the road so everything was within reach. The only sad thing was that the room we had was not in the lodge but in a cabin and the cabin room we had booked was at the rear, with no porch and no view of the lake. The one window looked into another cabin. It seemed completely claustrophobic so we (mostly I) tried to change it. They wouldn't tell us right away if it was possible (it *was* July 4, after all). However, that meant that we could not actually leave anything in the room so I had to change into my running clothes in the lobby bathroom while Kristina and Jørgen went to the stables.

I was going to run on a trail starting from the lodge and take my chances on the bear issue. I'm a fanatic but not completely reckless so I tried to think of a way to reduce the chance of human (me)-bear interaction. It's not enough to be faster than the next guy if you are alone. Since the car was sort of littered with empty soda bottles, I chose one, tossed a couple of handfuls of pebbles from the gravel parking lot into it, and closed it up again. A single shake was pretty noisy so the bears could hear me coming. What they decided to do about it was up to them. After a quick stop at the stable to demonstrate my anti-bear device to Jørgen and Kristina, I was off. Just because everything in at least a half-mile radius knew I was in the forest didn't mean I could relax. The first part of the route was uphill on a relatively well used trail where I met several startled people who generally applauded the initiative once they realized what the noise was. That was pretty fine. However, when I turned off onto a side trail a couple of miles up, I started to get nervous, especially when I started seeing black fuzzy clumps on the trail that, to my fevered imagination, could have been bear fur (it probably wasn't, as I found out later). I had wanted to continue to another lake but my nerves got the best of me and I headed back down. I did get a pretty good run out of it though and it was quite beautiful (and peaceful when I stopped moving...). Upon returning to the lodge, I found out that we could not get the room moved and so gave up and took a shower.

Meanwhile Jørgen and Kristina had a really great horseback ride. The route was along the road part of the time but veered off to some waterfalls. After we were all together again, we went to hang out in the main lodge since there was not much point in staying in the room. The view from the lodge porch was nice but not nearly so spectacular as from Apgar Village, since it was across the lake to the north rather than along the lake to the east where the mountains are. Jørgen checked out the local beer at the bar and chatted with a couple of elderly ladies full of good advice while I had a huckleberry daquiri. I had to wait quite a while for it while the bartender chatted up the woman next to me like she was his best friend, ugh. We took a late dinner so we could attend the ranger program, a local Indian woman (the one from the bar, in fact) who sang a mixture of native songs and songs she'd composed herself (mainly her own songs). Some of them were pretty funny, others more poignant. We had a very nice dinner in the lodge dining room even though there were some mishaps with the meals.

Kristina spent a lot of time looking in the lobby gift shop and finally told me that she'd found a moose for me, just in case I didn't actually get to see one. It was a hilarious sign, the same shape and color as a caution sign, with a cartoon in the middle. To the left was a road sign saying "Do Not Feed the Bears". Next to it was a 'moose' holding a sign saying "I am not a bear". Underneath it said "Trust me". I eventually bought it and, ironically neither Kristina nor I immediately noticed that the 'moose' was actually a bear wearing antlers. OK, at least I should have known...

Before moving on the next morning, I went out to run again, this time along the road. I didn't want to wait until later because we were driving the rest of the Going to the Sun Road and expected that to take

most of the day. The morning started out rather inauspiciously with dark clouds that looked even darker from between the tall pines lining the road. Even though I stuck to the road, I took my bottle of rocks from the day before. The noise of the rattling rocks was not enough to drown out the thunder which made me almost as nervous as meeting a bear. Eventually the heavens opened and the rain came down. I ended up carving out a small loop under the trees rather than staying on the much wetter road. By the time I got back, it was almost stopped again. Lucky me. And lucky us since the weather cleared, leaving gorgeous conditions for driving.

The Going to the Sun road stays down in the valley for some time and then begins to climb up to a pass at the high point, finally dropping down to the eastern side of the park. We stopped many times to walk out to one viewpoint or the other. Once we started to climb, we could see smoke from high up on the mountain side. We were rather worried about the fire, which we were told probably ignited from a lightning strike earlier in the morning, since we had seen the effects of a previous fire on the forest next to Lake MacDonald. However, we were told that the wet conditions meant it would quickly burn itself out.

We started seeing more snow as we climbed and pretty soon the road was wet from melting snow. It was not really cold outside but we could go out and climb on snow like it was winter. In fact, we were told that the road over the pass was opened to traffic only the week before. The scenery was spectacular and the multitudes of waterfalls from snowmelt were everywhere. At the pass, after hearing a talk about how Glacier Park may well be glacier free in 20 years or sooner, Jørgen and I decided to walk out to an overlook of a mountain lake above the pass. I had on my trail shoes and was very glad of it since the marked trail soon disappeared under snow. Jørgen confidently moved ahead but I went forward with baby steps most of the way and had to get some help crossing one tricky patch. I finally made it to the viewpoint where he had been relaxing for some time already. A mountain goat and her kid were grazing in the same spot and we watched them for a while before heading back down. I was, of course, nervous about going downhill in the snow, picturing myself sliding down the side of the mountain, but he said I should just go and all would take care of itself, I'd be fine. After being initially annoyed, I got over it and started hopping down through the snow and even having fun at it. I didn't even fall down, like some people (guess who) did. It turned out to be really exhilarating and was over far too soon. Kristina waited down at the visitor center and read. She was sorry she missed seeing the mountain goat and kid but was not sorry she didn't get to hike. (For that reason, I don't think she minded sooo much that her foot was hurting since it gave her a good excuse to not do anything.) It was kind of sad to leave the snow behind. We stopped a few more places on the way down before leaving the park to go back in again a few miles north to get to our evening destination.

We spent our last night in Glacier at Many Glacier Lodge, recommended by the Theory Group secretary, Jane. Situated on a mountain lake with a fantastic view, it was a very good recommendation indeed. Since we had some time before dinner, we drove down to the end of the road for animal viewing. Some rangers had telescopes out to observe mountain goats on the slopes. I was still hoping to see a moose so I asked one of them if there was a chance of seeing one in the area. They said there was a lake a short distance away that they might come to so we hiked in to give it a try. Jørgen and Kristina gave up pretty soon but they let me stay to look a little longer. Of course none came.

These park lodges have their own personality and this one was a model of a Swiss chalet with very white walls and red trim. It was a little bit much the other way after the darker Apgar Village and Lake MacDonald lodges but still very nice. We didn't have a decent view at Many Glacier Lodge either but the bigger room sort of made up for it. The dining room and the menu also reflected the European style of the place with various flags and coats of arms hanging all over. The view out the big windows was better than the food, unfortunately.

The next morning I ran twice around the lake in front of the lodge to make a decent distance out of it. Although I wasn't sure I'd need it, I took the noisemaker with me again. The thought of not needing it again after this was a sort of soothing one. The evening before, we had looked into a cruise over the closest lake and the next one as well, followed by a hike through the forest to a third lake. It was supposedly full but if we showed up, we might make it on, so we did so. We had contingency plans for whether they could take one, two or three of us on the boat. Fortunately they could take all three so we could stick

together better. The 'guided' trip was quite nice and pleasant. On the other side of the lake, there was some commotion on the trail and it turned out to be a young grizzly bear hanging out next to the dock (yes, on the same trail I'd been running alone on earlier). We had a few minutes hike between the lakes and the bear sighting made some people pretty nervous. I told our guide how I'd been out running with my clever noisemaker and he still looked pale. I think I was universally regarded as a nut case by all the park personnel.

We met a very interesting family on the boat, a couple and his parents. The couple worked at the park, he as a year-round ranger and she as a wildlife biologist. Currently she was being consulted on how to minimize the impact of roadwork on the Going to the Sun Road on wildlife. We learned from them, as well as other rangers we spoke to, that very few are actually employed as rangers year 'round. Two of the rangers at Apgar Village worked as local teachers during the winter while the one that introduced the singer at Lake MacDonald lodge was otherwise retired. This guy was lucky that both he and his wife could be employed full time in one place by the park service, a rarity. Summer is peak season so most rangers are seasonal and those that are full time often have to move to a park with more activity in the winter months. A nomadic existence indeed.

The hike to the next lake was very nice, not really any hills, just a swinging bridge that had to be crossed one at a time. Even Kristina was able to make it since her foot was starting to get better. We talked with the ranger's family for a while there and they started asking us questions about the LHC when they found out what we did.

When we returned for the next boat back, we were wondering why it was taking so long and then found out that it was because there was a MOOSE in the water across the lake and a bit further down. I was just beside myself and Kristina was shouting Mooooooooooooose, Mooooooooooooose! She'd been doing that ever since I announced my desire to see a moose about a week before. We were so lucky it was still there when we were on our way back so we could also get a better look. I was so happy. It made a fitting end to our visit to Glacier.

Once we retrieved our car and drove out again, we made one last stop at the visitor center in East Glacier. The highlight of that was seeing an osprey nest on top of one of the light poles just outside the visitor center. When we finally left East Glacier, we headed for Great Falls. That drive really led us to appreciate Montana's nickname of 'Big Sky Country'. The range of vision out there was wide but the landscape was not flat and featureless like some of the prairie we encountered later. The distant mountains and bluffs seemed to accentuate the expanse of sky rather than limit it.

On our way to Great Falls, we stopped in a little town with a local museum that sounded interesting in the AAA book. It contained a lot of paraphernalia from the early days of the town, a bit jumbled but still fascinating. It also had quite a collection of dinosaur bones and eggs, apparently an important excavation of dinosaur nests was made in this area. It was a nice distraction from the long drive and definitely worth the stop. The homemade ice cream at the shop next door was not bad either.

Great Falls turned out to be full of the standard hotel chains. We were lucky to choose one with a guest laundry since we were in dire need of it. I did that while they checked out the hotel pool. We went to some local pizza chain across the parking lot. While it was not bad, we carefully avoided going to another one.

Great Falls, named for the Great Falls of the Missouri River, was a pretty interesting place, thanks mostly to its museums. (It also had a great biking/running trail along the river, extending some 30 miles and starting from just behind our hotel.) For many years, it was home to Charles Russell, along with Frederic Remington, one of the great 'cowboy' artists. His works of cowboys and Indians on horses are well known. Originally from St. Louis, he studied art as a teenager but was employed as a ranch hand for some years so his depictions of range life were drawn from experience. However, as is often the case, the way of life he was idealizing for the general public was already vanishing, the Indians to the reservations and the untamed west to towns and train tracks. A museum in town displayed his art along with other Western artists and Indian art. They had a new exhibit while we were there, about buffalo and the attendant way of life that the Indians derived from them. They also had a display of local, modern Western art. Some of it was as realistic as Russell's while other works were more abstract. Russell's house and studio were also open to the public. Oddly enough, the layout of the house reminded me a lot of the houses back in Nashville.

Other well known temporary residents of the Great Falls area were the members of the Lewis and Clark expedition. Since Lewis and Clark had spent so much time there during their month-long portage around the falls, an interpretive center was built overlooking the river. It was really very well done and did a good job of conveying the difficulties of the portage. They ended up hauling their dugouts about 20 miles to get to more level, higher ground to move over. This route was fairly far away from the river but certainly easier than trying to stay close to it. Their journey through Indian territory with the loss of only one man (most likely due to untreated appendicitis) and the great success they had in mapping the territory, meeting Indians, and collecting specimens is still amazing today. If only the relations thenceforward could have remained so cordial. But then again, greed was not yet involved.

From there we drove to Billings, one of the largest cities in Montana but with a population less than that of Berkeley. It was quite a shock after the quiet, scenic places we'd stayed so far. Kristina was happy to get Chinese food and stay in the room to eat it. We settled for Applebee's next door since Jørgen's stomach was not yet quite up to par.

My next morning started out with the guaranteed worst run of the trip. I followed a path down by the waste treatment plant (nice smell) to the Yellowstone River and, for a little way, it was OK. Then I found the river blocked from view by a coal plant while the other side of the bike path was graced with views of an oil refinery on the other side of I-90 at what passes for rush hour. A detour in the other direction before giving up revealed that it might have been much better the other way but too late for that. It just goes to show that a bike trail along a river isn't guaranteed to be scenic, a good lesson. The day could only get better.

Our main stop for the day was the Little Bighorn National Battlefield. I wasn't sure what to expect, thinking that if it was big on the cemetery end of things, it wasn't going to be too interesting. That was what turned me off the Civil War battlefields we'd visited in April, too many unit monuments with not enough context. With that in mind, we decided to join a battlefield tour done by the local Indian college (the battlefield, naturally enough, sits in the middle of the Cheyenne Reservation). The price of the tour was worth every penny. The guide, an Indian woman, was really passionate and did a great job of explaining how Custer managed to get into such a fix but didn't demonize/lionize Custer and his troops or glorify the Indians which she could have done. She wove quite a spell with the story, it almost seemed like the battle was happening around us while we drove. At one point she showed the place where Custer's brother-in-law was killed with a small group of other soldiers. Ordered to hold their ground and out of ammunition, they fought to the last with their bare hands rather than trying to escape. (While every effort was made to mark the spots where the various soldiers fell, the stones are small and fairly unobtrusive.)

It must have been a mass of confusion with the noise and smoke from the guns, the Indian camp and the battle cries sometimes making it difficult simply to even tell friend from foe. Contradictory orders were given by the US troops and the various talks and films made it clear that even if the orders had been consistent, it might not have made a difference in the outcome because not all of Custer's soldiers spoke English. There were Italians, Germans, and even Danes on the battlefield. They could not understand each other so how could they hope to understand their Indian scouts? Custer was pinned down with his men while trying to get to the main camp in an attempt to capture the women and children. Custer's arrogance was well known but he had reason to think that this maneuver would work: he had done it successfully before. In a previous battle, the Indians had surrendered when Custer captured the non-combatants. This time though they didn't let him get so far. He and about 30 men tried to hold the high ground, hoping for reinforcements that never came since Reno and Benteen, only several miles away and with many more men, were afraid to venture from their hilltop place. Custer's men, meanwhile, went so far as to shoot their own horses to use as breastworks, a desperation move for calvary soldiers. Lots of things were wrong with the way the US treated the natives and this battle is only one example of how bad things were.

The Little Bighorn monument is not all that large but we were there for a long time. Besides the tour, we went to two other presentations, one a ranger talk covering the same ground as the tour but with less passion and one a special presentation on Indian sign language, by a non-Indian. Sign language was the reason why the members of the various tribes camped at Little Bighorn could understand each other. Maybe if the US troops had used the same, things would have turned out a little less desperate for them.

We decided to stay in Buffalo, Wyoming, since the AAA book said that there was a Spillman Carousel in town and thought it would be nice to see one that was similar to the one in Tilden Park in Berkeley. Another attraction of interest to me was the Occidental Hotel, mainly because it was a famous Old West hotel: among others, Butch Cassidy and the Sundance Kid stayed there. (Alright, I admit I picture Paul Newman and Robert Redford when I think of them but the rose-colored glasses doesn't mean it's less interesting to see a place where they actually were. Unfortunately the carousel was a disappointment since it was part of the Super 8 hotel across the road from where we stayed. The Super 8 is still open but the former owner, who had built up the carousel and other amusements for the guests, had died recently and the widow was trying to sell off the hotel add-ons. It was still there but boarded up so we couldn't see it. The Occidental was a real treat though. Kristina spent quite some time in the hotel Barber Shop. Jørgen had buffalo (quite appropriately) for the last time on the trip and finally it was very good. Our waitress was fascinating. She was an older German woman (with hardly a trace of an accent) who had married an American soldier and they had moved to Buffalo together after he left the service. It was pretty interesting to listen to her and her opinions. It's probably not the easiest place to be a transplanted European but she seemed to appreciate it.

While Buffalo doesn't have much to offer in the way of attractions besides the old Occidental (and being fortunately located at the intersection of two freeways), it does have a super running trail that started across the street from our hotel and continuing into the foothills of the Bighorn Range. Through town it is marked by buffalo hoofprints. Just beyond, it goes through parks and range land. I would have loved the chance to go the length of it and wondered if it wouldn't be long enough for an ultra, it would anyway be a gorgeous location for it.

Our next stop was Devils Tower (which should have been Devil's Tower but for a park service typo). It was pretty unmistakable once we were in range, little wonder the Indians held it sacred. What surprised me though were the large prairie dog towns on the drive into the monument. They are really cute little creatures. Fortunately there is little evidence that they commonly end up as road kill, drivers do seem to watch for them. I kept thinking of Spielberg's 'Close Encounters of the Third Kind' since the action at the end (the alien contact) took place at Devil's Tower. (We rented the movie shortly after returning from our vacation and watched it together.) It is popular climbing spot and climbing is allowed all year except for a short time when the Indians use it for ceremonies. We learned that some climbers petitioned that the Indians should not be allowed to block access to the mountain at all which I thought was rather petty – it's not like non-Indians are forbidden from climbing all year round. The courts had the good sense to deny the petition. There is a trail around the bottom of the tower which we took, much to Kristina's chagrin since her foot was still hurting, but it was fascinating to see the tower from all possible angles.

From Devils Tower, we left Wyoming behind and headed for South Dakota. The freeway there, as was the case in WY, had gates on the entrance ramps. We never saw an explanation for this but concluded that the idea must be to keep people off the roads in bad weather, particularly in winter. In such sparsely populated states, valuable time and resources would otherwise have to be given to rescuing stranded drivers.

The moment we entered South Dakota, we started seeing signs for Wall Drug along the freeway, it seemed like a new and different one almost every other mile. After passing through the forests of the Black Hills and through Sturgis (the rallying point of the Harley-Davidson motorcycle world in August), the landscape changed again to wide open prairie. This time though the sky didn't look 'big' like in Montana but it started to look ominous. Rain was coming and the sky seemed to fill with ever-darkening clouds. We had planned to stay in Wall anyway and the drug store was looking more and more appealing as a place to spend some time indoors. What a place. It was huge and had a number of attractions of its own, including a Jurassic Park T-Rex that erupted from behind a gate complete with smoke and noise every few minutes. The store is separated into different sections for homemade candy, books, local photos, a diner and even a pharmacy. The road signs are obviously pretty successful at drawing people in since the parking lot was full of license plates from across the US. (When I told one of the guys I carpool with about Wall Drug, he said he and his wife had stopped there on their way from the University of Chicago to the University of Washington to begin his first postdoc. Wall Drug was about the only place they'd stopped on their ultrafast trip west.)

We stayed at a Best Western near the eponymous wall, arriving still ahead of the rain. Kristina was in the pool house across the parking lot when the rain came and happily stayed there. I was quite glad to be in the room when the storm slammed into the hotel. In a typical, gentle rain, the exterior corridors of such hotels usually remain dry. Here the rain/hail came in perpendicular to the hotel wall, hitting the door and windows with force. The parking lot was fairly well flooded in the course of a few minutes. By the time we went to dinner later, the lot was drained and already dry in places. However, as we walked the short distance back to the hotel, we could see lightning all across the eastern horizon, quite a spectacular sight.

The next morning I finally understood why the town is called Wall. I ran on the only bike trail in town to an access road that dropped down from the town and onto the prairie where some of the sandstone formations that mark the Badlands could be seen. I was all alone and it was beautiful. With good weather, flowers and the expanse of prairie, it was one of my favorite runs on the trip even though it was short. Turning around, the 'wall' was evident. The drop is not big but the town sits on a bluff known as the wall of the badlands.

After breakfast we headed into Badlands National Park where we encountered bison, bighorn sheep and more prairie dogs. The face of the badlands, so named because it was hard for wagon trains to pass through and very dry, is ever changing since the sandstone that forms them is so soft and constantly eroding. Therefore there are few trails. We took most of them, including a fossil walk. There are no dinosaurs fossils in the park, mostly early mammals, including early ancestors of modern horses. Kristina worked her way through the visitor center to earn another Junior Ranger patch, her first of the day. There are two parts of the park, a northern and a southern part, that are somewhat disconnected. The area between is mostly Indian territory, including Wounded Knee Creek where many Indians were killed by soldiers in the late 1800's. We didn't have the time to go to that area, though, since we had to get back to the Black Hills for the night. We drove through more badlands until they gave way to forest and mountains on the way to Mt. Rushmore National Monument.

I wasn't quite sure what to expect from Mt. Rushmore but it was definitely not what we saw there. I know the place is depicted often and much visited, I just didn't expect the level of *kitch* of the place. The town just outside, Keystone, reminded me of Gatlinburg, Tennessee, with tons of theme-based restaurants, attractions, and souvenir stores of all sorts. The monument, while more sedate, is about as over the top as the government allows itself to be. Once you enter (and we did have to pay for the parking garage since the parking house is not run by the park service) you walk down a corridor with all 50 state flags unfurled on both sides (25 to a side). The visitor center is a patriotic paen to all four presidents depicted and to the builder of the monument himself. He'd planned to do them all full figure but the mountain had other plans and the work was finally halted by his death. I think my favorite part was the display that showed the monument in cartoons and in examples of available souvenirs – likely available for purchase in Keystone. The ranger talk about the building was the most interesting part, with some illustrations about various designs that had to be rethought after a crack was found or some instability in the rock discovered. He used Kristina's head to show how measurements were scaled up from model size to monument size (but he eventually gave it back). Kristina did the Junior Ranger program there as well and declared it her favorite of the parks. I'm glad she liked it, I found most of it borderline annoying and would have preferred fending off grizzly bears in the wilderness than the trail clogged with tourists who thought a quarter-mile hike was overly strenuous. (Here's where you all can blow raspberries at me for being an elitist snob.)

After Mt. Rushmore, I would have liked to see the Crazy Horse monument in progress as well but it was getting late in the day and frankly we'd had enough of that kind of stuff. Once away from Rushmore, the area settled down into being absolutely beautiful and peaceful. All the stories I'd heard about the rough life in the Dakotas seemed exaggerated in the summer sun but then to gain perspective I'd just need to remember the power behind the rain the day before. We settled into "the best hotel in town" in Lead and took off for nearby Deadwood for dinner.

I hadn't quite realized that the famous Deadwood with all that Old West history and gold rush, etc. was in the Black Hills of SD. In my mind, it was always further west and further south. I'd never once pictured it with all that winter weather. (I guess it's the same selective interpretation that makes those who haven't been to California think it's all palm trees and sunny, warm beaches.) The whole town is a

National Historic Landmark. It didn't fall into being a ghost town like so many of the boom and bust gold towns and, surprisingly, it doesn't look all that old in many ways. It is all built of brick, most likely because the old shantytown-like wood buildings burned down so everything was rebuilt in more fire-resistant brick. There are casinos in town and gambling is still allowed, probably saving the town from fading away into the same fate as many others. At some point gambling was made illegal but, after some time, it was voted back into law in a referendum and modern Deadwood was born and flourished. We chose one of the casinos for dinner and were not terribly impressed with the food although the photos on the walls were pretty cool.

We spent the latter part of Friday morning and early afternoon in Deadwood. We wanted to see Wild Bill Hickok get shot but his thrice daily deaths didn't start until later so we had time to see some sights first. We took a walk up to Mt. Moriah Cemetery, against the strenuous advice of a lady at the local tourist office who made it sound like the last people who tried it got so lost they had to send out a search and rescue party. She was exaggerating. It's uphill to be sure, but well enough marked. It was worth the trip to see the graves of some of the local characters, including Will Bill Hickok and Calamity Jane. The sheet that came with the price of admission had some interesting stories. After we came down we visited the Adams Museum for an overview of the town history and an introduction to local color. Some of the highlights for me were the story of a rescued coyote who was featured in movies and also met the president at the time and an exhibit about the Homestake Mine. We got into the saloon to watch the re-enactment of Wild Bill's death just in time to get some good seats close to the action. The actor doing Wild Bill really looked the part and had some great audience involvement worked in. After a monologue about Wild Bill, he picked a few people in the audience to be bit players with him for the show who got to dress up. During the performance, he also talked to some audience members and when it came time to introduce Calamity Jane, he saw me looking at him and smiling so I got to talk to him as 'Jane' for the moment, very fun. Jørgen just rolled his eyes because Jane was a drunken 'working' girl who mostly only wore pants for those famous photos. She wanted to be buried next to Wild Bill and she is, most likely to the great chagrin of his family – he'd married only a few months before he was shot and probably never had an affair with the dirty Jane. After the 'death' of Wild Bill, I ran down to feed the meter and came back to find Jørgen and Kristina still talking to the actor playing Bill. He apparently lives in Deadwood during the summer to do this but is a 'real' actor who has been in several things, including the Deadwood TV series. He had some photos on the wall of some, including with Sam Elliot (Deadwood) and John Schneider (Dukes of Hazzard). It looked like he'd done some stunt work too. Before we could leave, we watched another re-enactment, this one on the street, that showed another true event in the town's past. Some miner had come into a tavern with some money and bought a round of drinks for the house. The drunken bartender tried to get him to buy more but he refused. The bartender pulled a gun, only to have it shot out of his hand by another patron who turned out to be Doc Holliday. Since they didn't actually explain who Doc Holliday was, the point was sort of lost on the kids but it was cool for the adults who know the story of the OK Corral. The shootout there took place later than this one, Holliday sort of meandered southwest from there. He was a doctor of some kind but also a 'shootist', a good man to have on your side. They'd closed one of the main streets for that one but when it was over we went back to Lead to get ready to go to the mine.

The topography around there is quite interesting. Deadwood is down in a gulch, so gold that leached out of the ground and into streams was easy to find in a low point. Lead, on the other hand, is only 2-3 miles away but sits on a hilltop. Deadwood had a few small mines but the motherlode was in Lead. (Lead does not refer to the element Pb, as we first thought, but to the leading end of the lode, so it is pronounced "lead".) The Homestake Gold Mine was built in Lead and operated there until a few years ago when the company decided that, since it cost more to mine than the gold they were getting out, the mine should be closed. Part of the expense was due to the fact that the mine was below the groundwater level and constant pumping was required to keep the mine dry. (The lowest shafts are more than one mile under ground – on that scale the elevation difference between Lead and Deadwood does not make a lot of difference. As soon as the mine was closed, it started to fill with water.) Lots of jobs with a century old company would be lost to the area which really couldn't afford it, after all, during the depression, Homestake basically helped keep South Dakota going. However, it was physics to the rescue, at least a little bit. Since the 1950's, Ray Davis, a physicist attempting to understand the physics that keeps the sun shining by studying neutrinos coming

from the sun, was looking for a place to do his experiments. Neutrinos are very, very difficult to detect because they don't interact very much and so can, for example, travel through the earth without interacting at all. There is also a lot of background that needs to be eliminated so the more material between the neutrino source (the sun) and the detector the better. Davis put his experiment, a big vat of chemical cleaner (mostly chlorine) down at the bottom of a shaft in the Homestake mine and discovered that there were fewer neutrinos coming from the sun than expected in the standard model of how the sun works, by about a factor of three, no small discrepancy. Since that time, a lot of other, different experiments, some sensitive to lower-energy neutrinos than Davis', have tried to find out where the missing neutrinos are. There are different types of neutrinos, each associated with a fundamental electrically charged particle called a lepton. The best known one is the electron, the little beasties that carry the electric current through wires, but it has two "cousins", the muon and the tau lepton. It was postulated that the electron-type neutrino could change into a muon-type neutrino and vice versa (the same switcheroo was also possible with the tau). Lately it was found by other detectors that this hypothesis is correct and the solar neutrino issue is sort of solved: the electron-type neutrinos are indeed produced in the sun at the rate expected but on their way to us they convert to the other two types, so by the time we detect them here on Earth, only one third of them are of the electron type. That doesn't, however, mean that there are not other physics questions that could benefit from a large underground facility being available for experiments, including understanding dark matter and dark energy. After lots of negotiation, and other sites interested in hosting such a lab getting into the mix, the Homestake mine has reopened for science and the pumps are back in operation. One caveat: the physicists aren't supposed to turn into miners, the remaining gold stays where it is. The facility is being built (the mine is there but it isn't exactly clean enough for installing detectors yet) in two stages: one at about 4000 ft. below the surface and the other at more than a mile below the surface. The latter one won't be operational for a while still because, unfinished detectors aside, it's still "damp" down there.

The directors of both labs, SUSEL (the upper lab – the first S is for Sanford, a benefactor who donated a lot of money to help start early operations at the upper level) and DUSEL (the lower one, D is for "deep"), are acquaintances of ours from LBNL. The SUSEL director, Jose Alonso, has turned into a big SD booster and is building a house on top of a hill between Lead and Deadwood. He plans to live there at least half the time. (I'd opt for summer only, he told about a fairly harrowing drive about half a mile downhill in a snowstorm and not being able to get to his office the next day because of the snow.) When we realized that he'd be in residence and was offering up a tour of the aboveground part of the mine (going down requires two hours of training and a special permit), we arranged our trip to end in the Black Hills area, spending two nights in Lead. Since the tour was to be above ground, Kristina was able to come along as long as she too took a brief safety training lesson from Jose and wore a hard hat. They preferred steel-toed shoes (for the obvious reason that mine equipment is heavy and anything dropped on your foot could cause serious damage) but let us get away with sneakers. At the outset, Kristina was hiding behind one of us but Jose soon won her over. It was pretty fascinating to see the shafts, even if we couldn't go down. There are two elevator shafts down to the mine, on two separate hills. The one we visited was in operation and we watched the cable reel out. Some of the old mine employees are back and are surprised at the safety consciousness of a Department of Energy facility. (That's not to say that the mine was unsafe before, it more likely speaks to the overcautiousness of DOE.) One example: back in the day, the ride down to the lowest level took about 3 minutes since time is, after all, money. Now the ride is a more leisurely 15-20 minutes each way. It was all quite impressive.

After the tour, we all went to dinner in Deadwood with Jose. He took us to his favorite restaurant there, a little place a bit outside of the tourist area. The chef/owner is from Florida, quite the change in climate, especially in winter. The food was excellent and the service very friendly since Jose is well known to them. The lab often brings visitors there and hosts special dinners at the restaurant. Kristina is usually not very inclined to take up conversations with our colleagues but she pretty much dominated the discussion with Jose. He asked her about her school and after that we could hardly get a word in – we heard some stories for the first time there. She was pretty interested in his wife's horses. (When I was on my first postdoc at LLNL, Carol was my boss for the first year. As she drifted more and more into management, I spent

my second year with another group.) After dinner, Jose took us up to the construction site of their new house. They will have a panoramic view of the region when it is complete. Back at the hotel, he showed us the plans and Kristina, veteran of our own remodel, started making suggestions for how to arrange the furniture in the rooms their grandchildren would use.

Our timing in Lead was impeccable. The next day, Saturday, was Neutrino Day at SUSEL. Last year was the first and this year the event was even bigger. Trolleys shuttled visitors from the Lead visitor center parking lot to the lab where people could wander around a rather limited area, watch films, listen to science talks, and play games that taught something about neutrino physics. Jørgen and Kristina spent a couple of hours there before my arrival. I was late since I went for a longer run on the beginning of the Black Hills bike trail, a 100+ mile trail. It was quite beautiful and took me behind Lead where I ran through an area that was probably closed to the public during mining operations since there was a lot of equipment still in place. The lab is making a big education effort and this year has helped send about 20 SD high-school students to Brookhaven and Fermilab for a week. Jose recruited one of the LBNL scientists most involved in education outreach to come and work at SUSEL and she really likes it. Kristina got a T-shirt at the visitor center that proclaims 'Nerds Searching for WIMPS'. (Nerds 'R us, the physicists, and WIMPS is an acronym for Weakly-Interacting Massive Particles, candidates for dark matter.) Back down at the parking lot, we toured a science lab on wheels sponsored by one of the SD universities. Since the schools tend to be rather small and far apart, such a roving lab is a great benefit for the state. (I think it was Jose who said that if you drive on the freeway at night in SD, you are likely to meet only a handful of cars and the odds are pretty good that you'll know the people in most of them.)

After leaving the festivities in Lead, we went back toward Rapid City to visit the Reptile Gardens. This was quite an interesting place. It is not a zoo and so it is not subject to some of the restrictions with respect to other zoos. The main effect of this that I could determine is not so much on the animals themselves, they seem to have about as much space as at a zoo (not much for your average snake in any case), but on the employees. They need less training to handle poisonous snakes so this private facility has more types of poisonous snakes and more deadly ones than any zoo. In fact, a number of the species here are not in any other facility in the US. They had several interesting shows. In the alligator show, the trainer was alone with about 30 fine looking specimens. They seemed rather quiescent until feeding time where several would converge on the meat being offered. The snake show was pretty interesting. The trainer appeared very nonchalant when dealing with the rattlesnake and cobra but when we met him later he said although it looked like he wasn't paying attention to the snake in reality he never took his eyes off it. They don't seem to do much training to be a wrangler in a show, just sort of apprentice for a time.

Since Rapid City is not a big transportation hub, there are no facilities near the airport. The closest hotels are about 8 miles away and also not terribly near town. We checked into one of those hotels with a big waterpark inside. Unfortunately, it wasn't included in the cost of the room and wasn't cheap. Since they weren't immediately aware of that, Jørgen and Kristina could have gotten away without paying but were honest which so impressed the person in charge that he gave them a discount. That parking lot was really the last place to look for new license plates. I spotted one, I think Louisiana, that Kristina didn't have yet when I went out to run the next morning but since they were gone by the time we left, it didn't count for her.

The Rapid City airport is pretty small. The best thing about it was a view of Mt. Rushmore from the terminal window. For a change the rental car return was right next to the terminal. I had a chance to chat with the rental agent while I waited for my receipt and asked him what he thought about the new lab in Lead. He wasn't all that happy about the population expansion around Rapid City (my run included a new housing development) because he said it was all for the rich and people like him couldn't afford it. He also said that he didn't think the lab could benefit people like him very much. Although he was some kind of engineer by training, he didn't think that it would help his job prospects at the lab. He was pretty sure that it wouldn't do any good unless he had a Ph.D. himself (which he couldn't afford to get) and didn't believe it would benefit the local economy at all – he didn't think the scientists would stay and anyway they are fewer than the miners. Both things are true: most of the collaborators on the SUSEL/DUSEL experiments are from non-local universities who will send students and postdocs on a temporary basis and

these transients are fewer in number. However, all these people will need to be housed somewhere in the vicinity of Lead and will bring money into the economy and their travel in and out will bring business to Rapid City and vicinity (including the fact that they will all have to rent cars...). Maybe some of them will be so enamored of the Black Hills region that they will come back and stay afterwards. It also surely should raise the level of educational opportunities in the state if Neutrino Day is any example. I can't help being more optimistic about it but then I'm one of *them*. It is also interesting that the security guy immediately spotted Kristina's T-shirt and started talking about the lab (among other things, he said that he hoped to get a job there). Quite remarkable how widely known the lab seems to be.

After all that travel, living out of a suitcase for two weeks (a month in my case) and discovering the wonders of Corn Nuts as road food, it was good to get home again.

We had a couple of relatively quiet weeks while Kristina went to Farm Camp and Nature Adventure Camp in Tilden Park. Then for the next three weeks she was hardly home at all, courtesy of the girl scouts. She wanted to try out one of the council camps and when she realized that camp Deer Lake was near Donner Summit, this Donner-obsessed child was ready to pack her bags. She took a bus up there from Concord. I drove her up there and went running from Lafayette Ridge through Briones to the other side while Jørgen hiked the other way. It was really hot that day and the trail into Briones was not very well marked, making me take a couple of wrong turns before getting decently started. That plus some killer hills on the way in convinced me not to do any extra out and backs to add miles. I felt like a wimp and, in any case, Jørgen was done before I'd barely gotten started decently, thanks to the poor markings.

Kristina's Deer Lake reality was not as good as the fantasy. It was the first time she'd spent the week in a tent cabin instead of a real cabin. She didn't like it very much, maybe due in part to her tentmates, and complained about the camp a lot in her first letter home. Her unit was the furthest from the dining hall and she 'practically had to rock climb to get there'. She even complained about the pasta?! She got to like it better by the end but was not so eager to consider going again.

The last day of camp at Deer Lake was a Saturday and I drove up to Truckee from Livermore to pick her up rather than having her take the bus back again since we had a house guest coming in the afternoon. They would not let me pick her up before noon so I went for a rather long run on a National Forest road in Truckee. I found an email address for some running club in Truckee to get some trail recommendations and this one was the closest to the hotel (same one we'd all stayed in the previous year). The trail was really great, mostly in the forest, but with some good views too. When I did go pick her up, I could understand better why they'd rather have buses bring the girls in and out rather than letting a stream of parents on that road. It is also evident, having seen nothing else there, why the camp is closed in the winter. It's accessible only by a three mile dirt road with rather big potholes. It took so long to drive in I was beginning to seriously think I could have run in there faster than I could drive. She was ready and waiting to go, along with all the other girls who were waiting for the buses to roll in. We beat a sedate retreat to the paved road and a hastier one back home.

We were in a hurry to get back because Kristina had joined the Berkeley-Sakai exchange scout troop last year and the Japanese scouts had arrived in the morning. The welcome picnic, in the Alvarado end of Tilden Park, was in full swing when we finally arrived, Kristina changing into her uniform in the back seat of the car the last few minutes of the drive. (Before going to Deer Lake, we went to a final meeting with the Berkeley troop where she had to get her vest in the proper shape and all her extra patches and badges sewn on. She also had to have a white long-sleeved shirt and khaki pants for days when she needed to have a full uniform. The khaki color is for older-girl troops, cadettes on up, and she had to have that color even though she's still a junior scout with a kelly-green vest. She doesn't really like the khaki color, though, so she doesn't take after my dad who didn't seem to wear any color other than khaki.) The picnic, with the visiting boy scouts also attending, was close to finishing by the time we arrived. Jørgen had already been there for a while, standing by to take our exchange scout home if we were too late. Her name was Risa, she was 14 and essentially spoke no English. She and Kristina used a lot of hand signals the days they were together.

Sunday was a free day to spend with our scout so we went for a walk in Muir Woods together. We also visited the Bay Model in Sausalito and got ice creams downtown before driving up for a view over the

Golden Gate Bridge from the Marin County side. It was a pleasant day but a little bit frustrating in terms of communication. At least she seemed to be happy enough with it.

Monday was a full dress day since the girls were going to the council office to do a service project and to the Berkeley mayor's office in the afternoon. The council people were somehow not ready for them so everything was delayed and they ended up being late for the mayor and late returning as well. The next day Risa was all packed up since the troop was going camping and then she would spend the rest of the stay with another family while Kristina went to her next scout camp at Butano Creek. She did join the Sakai troop on their camping trip to Camp Arequipa in Marin County. They stayed there two nights, most of the troop sleeping under the stars (no tents, just a ground tarp). I'm glad I didn't have to go along for that – I don't particularly like camping but do it for scouts. However, I don't make enough as an unpaid volunteer to sleep outside without a tent.

While she was in Arequipa, I was settling in for pre-camp activities at Camp Butano Creek for the third time. It seems we will keep it up as long as Kristina is in scouts, that's one camp she really likes. It was a bit of a different experience for us this time. All the pre-camp staff and their kids had to stay in one of the regular camper unit cabins because the cabin we usually occupied was on the other side of the creek, accessible by a bridge that had recently been declared unsafe. (Not that it would collapse under the weight of a few girls but the scouts are nothing if not safety conscious.) The capacity of the cabin was supposed to be 24 but we exceeded it on the second night of pre-camp. Everything went well, the six of us divided the 50 or so campers plus tags (staff kids either too young to be campers or boys) according to age and dealt with them separately. I had the girls in Kristina's age group and by the time we took them over so the rest of the training could begin, Kristina was also there. To start off with, I decided to take the girls on a hike through camp which somehow devolved into a major expedition on the most difficult trail in camp: Carboni's Killer. It was a very narrow trail with lots of up and down, including some steep dropoffs and crossing of narrow bridges. A couple of the girls were totally terrified and I (who was none too calm either, just trying not to show it) had to help and reassure them. Then there were some in the lead who seemed ready to run down without any fear, my daughter in particular who rolled her eyes every time I asked her to wait. There was a great deal of moaning about not enough water or how they should have brought food, etc. It was all over in less than an hour and we'd pretty much taken up the time before heading back for dinner without me having to come up with something for them to do so I didn't mind too much. It was actually pretty neat to be walking through the dampish fern forest surrounded by redwoods and the girls almost all felt like they'd really accomplished something. Even some of the most whiny during the walk wanted to go back and do it again. Our troop is camping there in March and Kristina is hoping I'll lead them on Carboni's Killer then. Only if it's dry, the name 'Killer' might be quite apt if the trail was covered with slick mud.

I didn't take them on any further excursions and a couple of the other pre-camp staffers were not so happy about me hauling their daughters into dangerous territory alone. Of course none of them wanted to go with me on another trip so I could use that as an excuse to not do it again this time. I used one morning to paint the camp chair I'd gotten as a staff present the previous year. Since my camp name is Charm (a quark attribute that I have researched particularly), I used the paints to illustrate that what I mean by charm was all physics and nothing to do with personality or luck. I probably have the only GS camp chair with the quark and lepton families paired up on the back. (Yes, I know I'm a geek but I'm proud of it.)

Surprisingly, it rained quite hard on the first morning of pre-camp. I was out for my run and got thoroughly soaked even though I tried to take cover. It rained *hard* with big drops pelting down and in the middle of summer, too. It is very unusual to have rain in summer, especially actual rain as opposed to drizzling fog which is not particularly uncommon.

Despite the crowding in our cabin, the days passed pleasantly enough and soon it was time for me to depart. I did the usual trick of skipping the last lunch and headed off for a long run in Big Basin Park. I went in from the back side this time, driving to a gate which signalled the end of allowed traffic. I had envisioned going on a longer run through more of the park but settled for about 16 miles total, 8 miles out to the visitor center and back the same way. It was a very nice fire road with a steep part at the beginning and then pretty even the rest of the way with some great views. The experience was less pleasant than I'd

hoped, though, since after about 5 minutes, I felt a sharp pain on the top of my foot, just under the tongue of my shoe. I stopped and found a dead bee when I pulled the shoe off. It didn't turn me back but my foot hurt with every step (and there were plenty of them). Strangely enough, it didn't even look like anything when I finally had returned home and could examine it thoroughly. It still hurt for a while but not very much if I kept a bandaid over it. I'd gotten stung by something on my first trip to Butano as well. I guess I should be glad I avoided it last year.

Meanwhile, after Jørgen had transported Kristina from the Arequipa camp in Marin to Butano, he headed off to Yosemite for a backpacking vacation. Since his taxi service took a several hours and left him considerably further away from the mountains, he spent the first night in Oakdale and then drove in the next day, staying at Backpacker's Camp before heading out. He did a nice afternoon hike involving a lot of scrambling on a disappearing trail in Tenaya Canyon. Then he spent 3 nights in the high country south of the Valley, in area quite unknown to us, before retrieving his car and driving back. When he called to say he was returning, I hitched a ride back home with him instead of waiting to go with Joel in his car.

We had a couple of days alone before we had to pick up Kristina. The last night, we went down to Half Moon Bay and had dinner at Estrella, the same place we'd gone once before. It was mostly quite nice except when a nervous waitress spilled Jørgen's red wine on the table, making quite a mess. Fortunately it didn't really get on us at all.

We expected that everything had gone well at the camp, as usual, so we were pretty shocked to find that many girls and staff had gotten sick and were sent home, in some cases for a day or two, and permanently in others. Espresso told me that many camps in the west had been hit hard during this same time. It wasn't clear that this was swine flu or something else entirely. I'd heard about swine flu devastating camps in the east but nothing much had been reported about problems in the west. Whatever it was, those who got sick seemed to recover fairly quickly. One of the units had been reduced to about 4-5 girls and the nurses had really had their hands full this time. On top of that, there was a forest fire south of Big Basin and a couple of parents, with no sense of proportion or risk, had picked their girls up because they were worried about the fire.

We again stopped at the Pescadero Arts and Crafts Fair after picking up Kristina. The little donkey was back and Kristina got to ride it multiple times, quite far down the street in a couple of cases. I got a nice new skirt from one of the vendors and Kristina got honey sticks. It was a very nice day for it.

Kristina had one more GS-connected project this summer, to finish her Bronze award. (There are several age level awards for service-type projects that can be done individually or as a troop. The Bronze is the age-level award for Junior scouts. Older girls can earn Silver and Gold awards for bigger projects.) Since Kristina volunteers at the Little Farm, we initially asked Farmer Stanley what she could perhaps do that would take at least 15 hours to finish. He suggested making a poster with photos and descriptions of the various chicken breeds on the farm to be placed in the Little Farm classroom. That was not long after she became a Junior scout and it was not until this summer that she got around to it. Stanley gave her a list of chickens that she looked up in a library book and wrote about on the computer. The next thing was to get good photos of each one and load them onto the computer as well. This took quite some time. The chickens don't particularly want to pose so she had to make several attempts. Then she arranged the photos plus descriptions into a poster template in PowerPoint with a little help from us. (I customized the size and Jørgen helped with the layout.) Stanley checked everything a couple of times to make sure all the facts were correct and the photos were in the right place. We had incentive to get it finished because there was to be another Little Farm Fair in mid-September and getting it done by then was a doable goal. We took the poster down to the farm the day before the fair and saw it get put up. Kristina then spent the rest of the afternoon either helping out with the last of the preparations or running around with Juliette, Stanley's daughter. She perhaps did more work that day than at the fair itself since she got a bit sick after placing in the pie-eating contest. I was around, hanging out by Stanley's office and working on my laptop, when he came by and looked sort of blankly at me before saying that Jørgen had come to get Kristina. Turns out that neither he nor Kristina remembered that I was there and called home instead. Poor Jørgen. (I won't say poor Kristina since she ate enough pie to get sick in the first place.)

We reached another growing up milestone just before school started: Kristina got brace and a retainer. We'd known it was coming for quite a while even though, in my opinion, her teeth are straighter already

than mine. It's a lot different than when I was a kid, the dental equipment comes in a variety of styles and colors so every time something gets changed, she gets new colors. In two years(!) she will probably not work through all combinations.

School started 2 days late for Kristina this year because work done on fixing up the 2nd and 3rd floors and the floors downstairs ran over. At least the Academy can make improvements, the arcane California budget process gutted education on every level. They've been cutting programs to public elementary and high schools for a while, especially for programs that are less relevant for that all-important testing. This year the state colleges and universities also took a big hit. The UC system is reeling. They can't really fire professors (that pesky/wonderful tenure system, depending on your point of view) but they can reduce staff and increase class loads to make them work more for their money. (And they are still expected/required to do research and mentor students, at least at UC.) With the system-wide cuts though, the administrators decided to give staff on all levels unpaid furloughs, effectively cutting everyone's pay by 10%. The faculty were furious and, at least in the UC Davis physics department, the majority wanted to make sure that the students were aware of the cuts. One way to do that was by scheduling the furlough days on days when they would teach, the thinking being that if they are still expected to teach the full load for less pay, the public would see no reason to restore the lost funding in a better budget climate. I agree but the administration did not and the faculty furlough days have to be on days when no classes of theirs are scheduled. The UC president (a relatively recent appointee from Texas) seemed quite eager to embrace these furloughs on all levels and even tried to make them apply to LBNL (where Jørgen works), just so his UC people wouldn't feel so bad. However, even though the UC manages the lab, the funding comes directly from the Department of Energy who put paid to that idea pretty quickly. After a lot of effort, the UC president also conceded that graduate students, postdocs and staff paid by grants and not by UC directly should not be subject to furloughs either. (Reason does prevail sometimes.) All this is, of course, much harder on the staff. A runner friend of mine who is on the campus support staff at UC Berkeley is getting substantially less per paycheck. It may not be the most expensive hobby, but the relative freedom and equipment needed to keep yourself running ultras without injury requires some disposable income. The UC Davis physics department has helped mitigate the effects of the furlough on their staff and demonstrating how much the staff are appreciated by taxing themselves to pool and split up between the staff members who all got a Christmas bonus of over \$1000 this year.

September was very busy for us with Jørgen gone twice and I once. The Russian nuclear physics laboratory at Dubna (it is actually, in principle, an international institute akin to CERN in Geneva) is trying to reinvent itself with an accelerator facility (currently called NICA) and so held a workshop at the beginning of September that Jørgen was invited to. He went the day before Labor Day and came back by way of Washington DC to go to the DOE theory review. That gave him a weekend in Moscow as well as an extra day in DC to do some sightseeing. I had sort of hoped to also go to the review to represent LLNL but they decided not to send too many people and I wasn't high enough in management to make the cut.

Just the day before Jørgen went off on his trip, I got some bad news from Illinois. My friend Lisa's husband, who had been struggling with melanoma, died. It just seemed so unfair, he'd been so active and such an interesting guy. Jørgen had only met him a couple of times but remembered him well. I'd found out Jeff was sick in April, I think, and felt it was so unbelievably unfair, especially since Lisa's first husband, Kent, who'd been with us in high school, had died young as well. Now, her two girls are younger than Kristina and without their dad. His death, which seemed so wrong in so many ways, really affected me even though I must admit I didn't know him as well as I would have if I had lived closer. (Might as well wish to live a different life but the path I chose, while distancing me from people I love, has been the right one for me. That doesn't mean that I don't regret not being closer, especially in times like these.) I really wanted to go to the funeral, even though Jørgen was going away and there would be another memorial after Thanksgiving. I didn't do anything until he was off on his trip but then, after talking to Joe and Tina, decided to try to go anyway if I could get leave from the lab. So Tuesday morning I left for work with a suitcase in my trunk and a plan for Kristina to stay with Isabel if I did go. I didn't expect I could take the time off for a non-family member but, surprise, I could get 5 days per year for non-family. Within an hour of hearing that, I had a plane ticket, rental car, and two hotels lined up (one at SFO and one in

Bloomington). Jørgen didn't know I'd left and I didn't tell him until I was already there. It was one of the most impulsive things I'd ever done and one of the best.

I flew to Chicago to drive down to Bloomington to minimize the drive. It was one of the few times I've flown to Chicago as a destination and I expected bad traffic, especially after Susi made it sound like I'd be better off driving 4 hours from St. Louis than 2 1/2 from Chicago. Fortunately, the flights in and out were at such times that the traffic was not a big problem. The flight landed early enough that I had time to stop south of Aurora and go for a run on a long-distance bike trail I found on the web. [Yes, I know I talk about running all the time but I have to mention this – I never really was a runner while I was growing up in Illinois (an understatement if there ever was one) and so my impression of the running possibilities throughout the state was totally changed by this trip. There is some initiative in the state called 500 trails that I'd never heard of before but think it's great. The trails are used too.] The trail I picked, pretty much next to the freeway, was really nice, along a canal, and out in the countryside. It was a nice break after a way too early flight.

The reception was at Jeff and Lisa's church in Bloomington. Instead of a viewing, like I was used to, there was a receiving line and a video/photo montage with some of Jeff's things on display. I knew Jeff had taken time off to spend with Anna and Emma but didn't realize that he'd been working on a book as well. It was about making things with deer hide so the deer in the garage before could have been used for a lot more than a good venison steak. It was all really beautiful work, very creative.

Tina arrived at the church a little while after I did and we stood in line together to greet Lisa and Jeff's family. Susi came in later, the first time I'd seen her, I think, since I graduated from high school. She looks great. Back in high school the four of us plus Dena, Kent, Joe and Byron usually sat together at lunch. Tina and I were the only ones from our year, the others were a year behind us. They were all so talented in various ways, particularly in music, and very smart. I often felt a little envious and wanted to be a little more 'normal' and talented like them. They have all done well as far as I know. Tina is working on a Ph.D. in education, Susi is a Dean at her university, Joe is a practicing vet, Lisa is working on computer systems at State Farm. Dena has grandchildren already and looks so amazingly young. Tina ordered flowers from Joe, Byron, me and our families and signed it 'The Lunch Bunch'. Tina, Susi and I sat around talking until the reception was over and Lisa could join us. We finally left to get a late dinner with Lisa's girls and father as well as Susi's parents. We went to a Japanese restaurant where they have cooking surfaces in the center of the tables to cook the meals right in front of you if you so choose. It turns out that Mitsubishi has a big presence in Bloomington and this restaurant is popular with them. It was a lot of fun to sit and talk and the food was great. The girls fell asleep, while we basically closed the place.

We all stayed at the Super 8 in Bloomington and met at breakfast the next morning. Susi and family were already ready to go to the church while I was still in my running clothes (Bloomington has great trails in town) but they were doing special music and had to go rehearse. Dena and her sister Jennifer were there for the service as well so we all talked afterwards. At some point, the talk turned to old days and my aunt Madeline's shop in town. Dena mentioned that she got her honeymoon bra there. I nearly spit out what I had in my mouth at that one: my impression was that what passed for lingerie there was more for matrons than newlyweds, *i.e.* no Victoria's Secret, but if it's the only place in town, well. Then almost everybody had some sort of story about something they'd gotten there. Oy vey, I thought I'd about pass out from laughing myself out of oxygen. (Sorry, Madeline, but the 'fashion' at The Fashion House seemed to definitely skew toward late middle age ...) Susi's dad took some photos of us together, unfortunately after Tina had already left. Anna and Emma got tiaras from Susi's son and put them on all of us at some point. They then braided Susi's and my hair. I got only two braids but Susi got about half a dozen that, when all fastened together in the back, ultimately looked pretty good. (Kristina still braids/styles my hair from time to time so I'm used to it.) There is a photo of the two of us with our styled hair and tiaras. After it was over at the church, some of us went to Lisa's house for a while before heading for our various homes. We brought food back from the funeral. Finding some place to put it was hard because their friends and neighbors had brought over so much food during Jeff's illness that every bit of refrigerator and freezer space was full. (In November Lisa told me that there was only a lasagna or so left, finally, a testament to generosity and freezer capacity – both immense.) I left it pretty much to the last minute to leave, especially

since I hadn't checked in before leaving the hotel in the morning but still made it to O'Hare on time. I had thought about calling Marlene and Doug when I got to the airport but had no time.

I was so glad that I went and could reconnect with old friends. We talked about trying to meet semi-regularly to stay in touch. I'd really like that, I tend to get too wrapped up in physics and whatever is going on at home but realize how valuable those friendships are. These women accepted me for me and the relationships don't feel so transient as women I know through Kristina's school or scouts. I hope I'll retain some of those friendships after Kristina goes to a different school or finishes with scouts but I don't necessarily expect it. (That doesn't mean that I don't value them, just that I know how easy it can be to lose the connection without a firmer foundation than 'my daughter knows your daughter'.) Since most of my close adult relationships are with male physicists, which I very much value (make no mistake, guys!), there is all the more reason to try to stay close to my women friends.

Speaking of staying close, we had the usual birthday party for Kristina in Tilden Park in September, just before Jørgen went off on another trip, this time to Turkey. These parties started out years ago inviting all the kids in the class and now they are generally smaller. She invites just the girls from class now, plus Alex, Mina and maybe one or two other girls from scouts. They don't usually mix all that well so I'm always worried that some of them are not having a good time but I don't really know what to do about it. They hung out at the farm for a while and then Kristina led them down the creek next to the parking lot. I went with them so there would be an adult around but it was definitely not a trail of any sort so I'm not sure how she discovered it. The weather was nice, one of the few times Jørgen was not wearing a down jacket while holding the picnic tables. It was certainly a pleasant change from the school picnic a couple of weeks earlier. That day it was foggy and so cold that I could only warm up by going over to the grill. I brought my laptop and stayed cold even with that on my lap. However, far be it from me to deny Kristina the chance to explore the creek next to the golf course with any other schoolmates brave enough to wander around down there with her (there are many). I finally went and sat in the car for the duration. Jørgen really didn't miss much by being away this time. The cold weather meant low attendance, too.

This fall Kristina was on the school soccer team. She hadn't done any sports before, hadn't even been swimming much since she stopped lessons a couple of years ago, so it was a pleasant surprise that she joined the team. They did well this year, too, probably not much due to her since she's still learning, but it was nice to be part of a successful effort. The team finished the year 3-2. It should have been a 6 game season but one game was canceled because a heavy rain had made the playing field too wet (the same early rain dumped *two inches* on Livermore) and it could not be rescheduled. The two games they lost were to schools with such big teams that when they substituted players the entire team switched out. The Academy Falcons didn't have any such luxury. So well done. She wants to go out for volleyball in the spring but isn't doing basketball.

Scouts started again in September with Rene being replaced by Janet as third leader. We had our first camping trip the first weekend of October, at Camp Arequipa, the same place Kristina had been camping with the Sakai troop. We went on Friday night, with Johanna and I coming late because of work, and stayed through lunch on Sunday. We had to be a little innovative because we were staying two nights and would not have access to a refrigerator, only coolers, for the duration. We solved some of the food problem by bringing pizza for dinner on Friday and trying to get by with stuff that didn't require too much cooking (hot dogs and banana boats – banana skins stuffed with marshmallows and M&M's in addition to the bananas, wrapped in foil and thrown into the fire pit – for dinner on Saturday). Kristina brought a batch of chocolate-chip cookies that she had made for the occasion - she has gotten pretty good at that.

Arequipa is near Fairfax, nestled into the hills in Marin County. It is a rather nice location, near the road but still rather quiet. The campground was a little bit up a hill but the area where we pitched our tents was rather flat. Another, larger Girl Scout camp is next door, at Camp Bothin. I enjoyed running up into the hills between the camps in the mornings, even without being able to shower. It was pretty cold on Saturday, at least to me. We went to the coast after breakfast to visit the Marine Mammal Center. Kristina has been to that area twice on school trips to the Marin Headlands Institute (which last several days), including one just a couple of weeks before our camping trip. We didn't have a scheduled tour of the center, just a self-guided visit, but we made good use of it. On her last trip, Kristina had seen the

area where they perform necropsies (autopsies of animals) on marine mammals found dead along a several hundred mile stretch of coast but didn't get to see any action. That changed this time: While we were looking in, a woman brought a seal out from the freezer and about half the troop, along with Johanna and I, watched with great fascination while she unwrapped the body, cut it open, removed the head and organs and took tissue samples. This all took place over about 45 minutes and the other girls, who didn't want to watch, were more ready to leave for the beach. It was pretty interesting, we were trying to identify the organs as they were being removed and the girls were hoping we'd get to see the brain extracted but we finally had to go to give them all some beach time. Ironically enough, about the first thing we discovered on the beach was a dead seal. I dutifully went back to the car and called the center but no one came to collect it while we were there. It was, in my opinion, pretty cold and windy at the beach, but our scouts are made of sterner stuff and were running barefoot in and out of the cold surf with only T-shirts and shorts on. Wow. At least most of them had dry clothes to put on back at camp.

Jørgen was still in Turkey during the camping trip. He was at a meeting in Kemer, near Antalya along the southern coast. It was held at a rather fancy resort and many participants had taken the opportunity to bring family along. He found the meeting quite a bit more interesting than initially expected and it probably didn't hurt that he was treated like a real big shot. On the way home, he spent three nights in Istanbul, an interesting experience for him, since he hadn't been there in over 40 years. He said that he had never seen a city this big (they give the population as around 15 million people).

Near the end of his stay in Turkey, he forwarded me an email from Bill to tell that Wladek had passed away the last day of September. I called Volker on the following Monday and found out that the news hadn't made it to him yet. Bill hadn't thought to include Volker on the email so the news from Wladek's wife in Berkeley to Bill in Hawaii to Jørgen in Turkey to and back to me in Berkeley again moved faster than her email to the lab late on a Friday afternoon. Funny how things work. The memorial for Wladek was not held until mid-November to allow family members living outside the US time to attend. It was the same day as a scout event so while Jørgen was there for the whole thing, I just arrived in time to mingle at the end.

The next weekend was the fourth time I ran the Firetrails 50 miler. It was really great this year, not too hot, not too cool and not too slimy, just right in fact. I didn't try to go out too fast like I did last year and started more slowly. The first few miles I was with a 58 year old lady from the San Jose area doing her first 50 miler (as she reminded me several times over the first 40+ minutes, sigh). After a little further, I was able to move ahead and kept up a pretty good pace despite being stung on the rear by a bee just after getting into Redwood Park. Everything was going really well until about 35 miles in when I felt a bit overtired and hungry. (It might have been because I passed up food at the previous aid station to keep my hands free for the nasty downhill soon after departing it and handled that hill better than I ever had before.) I just stopped at the bathroom, counted to 10, said hi to Cap'n Kirk at the aid station and headed downhill. Somewhere in the middle of Redwood I sort of came back to myself and slogged the rest of the way, finishing in 11:32, my best time yet in 4 tries. (Everybody always knows when I finish because I give such a 'joyful shout' when I see the finish line.) Just past the Bort Meadow aid station, about 6 miles from the finish, I had to bypass an ambulance crew working on a runner who'd had a heart attack. He was actually part of the marathon instead of the 50 but was in his 70s and apparently rather well known in the ultra community, having done 5 100-milers in one year at his peak. Fortunately it seems he is going to be OK. I didn't stop because he was already being well taken care of: he was lucky that the guy running nearest him was trained in CPR. Only a couple of days later we had a first aid-focused scout meeting led one of the school parents who is a fire fighter/EMT. I was explaining to him how there had been a lot of trouble getting the ambulance to the guy because of locked gates in the parks and he said that it is very much a territorial issue and since cattle are grazed in the parks the ranchers have a vested interest in keeping the gates locked. Our RDs would rather have the rescue vehicles smash the gates but, despite all the problems reaching him, the guy survived and recovered.

I've heard of several deaths in marathons more recently and this seems more worrisome than whether or not you keep your toenails intact (I don't and don't care) or whether those runners finishing after a certain time limit should get a lesser reward, like no medal or a T-shirt saying 'I sort-of ran the XXX marathon'

instead of ‘XXX marathon finisher’. The latter is something I read about in the New York Times shortly before the New York marathon. It seems to me to be sour grapes on the part of some of the faster to medium fast marathon runners who see more people entering the marathon races as a bad thing. (These same people would poo-poo a 12-14 minute mile in an ultra but would sing a different tune if their fast, flat street marathon were suddenly plopped into, say, the middle of the Ohlone wilderness. Ultra runners are a lot more relaxed about this, I must say.) I guess that with more people running, you are bound to get more injuries and deaths but I think I’d rather drop during a run than waste away. A good run is a joy. We all sign waivers about health and responsibility when we register for a race and don’t really think anything of it but seeing someone being treated on the trail does give a different perspective.

In mid-October, I went to San Francisco two days in a row. On Friday night, Jørgen and I went to a Steely Dan concert at the Masonic center. Jørgen saw an article about the upcoming concerts and, knowing that I was a fan, asked me if I wanted to go. The answer was definitely ‘YES’. They had an interesting format, performing all the songs from one album first, then playing a selection of songs afterwards. The two guys in Steely Dan (neither named Dan) had a 10 piece band and 3 backup singers. It wasn’t all that big a venue and it wasn’t completely full but the audience was enthusiastic. I was much more a fan than Jørgen who, I think, fell asleep at one point and didn’t really know their music. Even though he didn’t know much of it, he stil thought it was pretty good. I was surprised at how much I could sing along to, especially since they made most of their albums while I was in grade school. Good stuff. We hadn’t been to a concert in ages and it was so cool. I was so glad he’d found out & asked about it.

The next day, Kristina and I went to the Aquarium of the Bay with Rene and Alex to a CYGNET study ‘tea’ talk. The girls got to look around the aquarium while we listened to a lecture about mercury contamination in local fish. (That balanced a seminar on marine mammal diseases I’d heard at Livermore.) The weekend before, we all met up to go to a GS event in Walnut Creek, the annual Save the Bay event. We couldn’t go together since Kristina had to go to an art supply house with other upper school kids who were getting supplies for their holiday show outfits. It was really very warm that weekend and there were not all that many different things to try so I ended up helping out at one of the booths, asking questions about beavers. Each question correctly answered gave the girls a charm for a ‘beaver’ charm bracelet with beaver, bird, fish and other related charms. Kristina finished up with the other booths and then sat at the beaver table, making a bracelet of her own by attaching individual links. Rene had helped at the same booth before we got there. We couldn’t quite figure out why we’d had to pay to go in and then had to work pretty much the entire time.

Shortly thereafter the Bay Bridge broke. It had been closed for work on the installation of a temporary span (a preparation for the new east bridge under construction) over Labor Day weekend and a problem (unrelated) was discovered. The contractor, C.C. Myers, famous for his speedy work, managed to fix it over the weekend as well. But the Transportation Department engineers had not taken due account of the constant shaking of the bridge, so the eyebar came loose after less than two months and this time the bridge stayed closed for a week until it could be fixed properly. Fortunetely, this part of the bridge will be decommissioned in a couple of years.

On Halloween, I went out running with Mike and another friend in Black Diamond Mines park, one of the East Bay Parks I hadn’t been to before. Mike wanted to go out there because of the cemetery on site. The park area was once a’ cluster of coal mining towns inhabited by miners mostly from Wales. Some of the mines are left (tours are available) but, aside from the Rose Hill Cemetery, the people are all gone. I was late meeting Mike because I’d gone to get a new car key to replace the one I’d lost in the grass at Kristina’s birthday party and it took a lot longer than I could possibly have imagined. (Smart keys can’t just be machine copied.) I was almost on time but couldn’t find the tiny parking lot we were supposed to meet at so we ended up starting a bit late. It was very fun. Jørgen and Kristina came out too and biked the trail toward the park (we started about 3 miles outside to avoid a long drive around to the official entrance, thus saving the entrance fee, pikers). It was one of the first times for Kristina on the new (and sorely needed) bike he gave her for her birthday. When Jørgen asked Mike about the bikability of the trail, Mike thought he was coming alone and told him it wasn’t too hard to bike. Kristina would seriously beg to differ, as it was a sustained rather steep uphill for nearly all of those three miles. But they made it to

the gate (mostly on foot) where Kristina took a well-deserved break, while Jørgen walked the last little bit up to see the view of the park. We met him just after he had started walking. Sitting on the ground with her helmet on, Kristina looked thoroughly disgruntled. She likely didn't have many nice thoughts about Mike at that point since she blamed the uphill slog on him. Afterward we all met in the parking lot and I took over Kristina, while Jørgen drove around to the main entrance and spent a good bit of the afternoon hiking in the main area of the park. I brought Kristina back home and then took her to Orinda to spend the night with her classmate Kate. They went to a haunted house and then trick or treating. Jørgen and I went out to dinner after one (big) group of neighborhood kids stopped at our house.

A few days later I was off to Brookhaven for a low-energy meeting, my third since starting at Livermore. The Bay Bridge was still not open although they had been saying for several days that it might be open again the next morning but it never was. I didn't dare risk waiting until 05:00 to find out and then have to drive around south to the San Mateo Bridge in rush hour traffic to catch my flight so, after dinner, I did the drive and stayed in the Best Western by the airport. Even fairly late in the evening there was something spilled on the San Mateo Bridge and the traffic was backed up. Ugh, having to rely on 2-3 long bridges to go to San Francisco is pretty awful, especially if one of them breaks down. It's an object lesson as to how difficult it could be if another bad earthquake came. (The Bay Bridge was temporarily shut down by the last one in 1989 and the new bridge is supposed to be in response to that.) The necessity of making a 7+ mile bridge across the bay at most points means that there are few crossing points and any one can become a bottleneck with an accident which happens fairly often and makes us thankful that we don't have to commute across any of them.

I stayed with Barbara in Stony Brook this time and really enjoyed it. We had a couple of dinners at home and also went out twice. I even had a chance to cook which was fun. I hadn't cooked on LI for more than 10 years and it was probably the first time I'd been at a fishmonger out there. OK, they were just about to close and I was lucky to get anything but still. We went to an Indian restaurant with some of her students and then to a Japanese restaurant with one of her friends my last night. Having a girl's night was nice, I don't get to do that often. I also had a chance to go out with Sam instead of going to the conference dinner. (It was the first time we'd had one that I can recall.) We ended up going to the same restaurant as the dinner and saw some of the Los Alamos guys at the bar after dinner. The restaurant we all ended up at was Mirabelle which had moved from its home in St. James to the Three Village Inn in Stony Brook. I'd been there twice in the past, both times more expensive because we'd had the regular menu while during the first week of November, restaurant week on LI, a 3 course menu is only \$25, a super-fantastic deal at Mirabelle where the prix fixe menu can be around \$100. Sam and I stayed quite late and met the chef on his way out. I told him that Jørgen and I had gone to one of his recommended restaurants in France, the Lion d'Or in Romarantin-Lanthany, and had a great time. I'm pretty sure I can still find the list he wrote for us.

The weekend after I came back from Brookhaven, Jørgen and I had a date night at the San Francisco Hilton. We got a free night since, on our previous stay, a year ago, they started cleaning the room before Jørgen had checked out. This doesn't have to be a problem but it is when they throw out your stuff. Jørgen returned in the last moment and managed to get all his stuff back out of the garbage but they were so embarrassed that they gave us a future free night. It was a Friday night and, after parent-teacher conferences and an orthodontist appointment, it took me a little while to drive in. Jørgen took BART after the conferences to enjoy the room a little longer. It was a pretty good room, a one bedroom suite on a corner so there were views over the city in two directions. It wasn't all that well arranged though, you couldn't enter the bathroom and the closet at the same time, and the TV in the living room didn't work. Oh well, it was pretty cool to get a Hilton bill of \$0. We made up for that by eating in the Dining Room of the Ritz-Carleton Hotel, a few blocks walk away. The food was really great. We had a nine-course meal with a rather late reservation and were the last ones to leave. The weather was pretty lousy the next morning, very gray and misty, so we didn't stay very long. Back home it was quite nice though.

Yael, Tamir and their daughter Naomi came to visit for Thanksgiving. They stayed in the attic, which serves as our guest quarters. Kristina had been sleeping up in the attic a good bit of the year and this gave us a chance to get her downstairs and into her room again as well as clean up in both places. It was fun

to have a toddler in the house again but nice for it not to be our own. Naomi is really very cute. Kristina enjoyed playing with her and doing things with her. It was also nice to have Yael and Tamir visiting, we don't get to see them so often. It was the first time I'd met Naomi since I hadn't been able to go to Denmark for Christmas last year, trading those vacation days for our summer trip this year. She was good friends with Kristina and Jørgen but always seemed vaguely suspicious of me. Hopefully we'll eventually get to know each other.

The day they arrived, Kristina had gotten sick. I took her to school anyway and had barely gotten to my office before Ms. McCoy called from school and asked me to come pick her up. There went that day. We went to the doctor's office and then to the lab to get her blood drawn for the first time. (I had tried to get her to give blood for the CYGNET study but she always refused until they finally let her off the hook this year.) She was feeling so bad that she threw up in the lab. Fortunately she telegraphed it well enough to the lab tech that it went into the wastebasket instead of on the floor. After another bout in the Kaiser garage, we went home to wait for our guests. It wasn't clear until the next morning if Kristina could go out with them for the day. When it turned out she was fine, I went off to the lab and worked half the day while they went to San Francisco. They had a great time: watching seals at Pier 39, having lunch at Fisherman's Wharf, riding the cable car, visiting China Town. On Thanksgiving Day, they went to the San Francisco Zoo (Oakland's was closed) in wonderful weather, while I went for a long run (a bit more than half of Mike P's PC50K course) and then returned home to cook for the rest of the day. We've been going to Rene and Sam for Thanksgiving the last several years so this was the first time in quite a while I did the turkey myself, a 5 pound breast, I wasn't going to go completely crazy for only 4 adults. We ate later too, so I had enough time to get everything prepared. It turned out pretty well (even though I blackened rather than toasted the bread for the stuffing). They stayed until Saturday night and then left on the red-eye. It was a nice visit and I hope we can do it again.

I left *very* early Friday morning to fly to Illinois to go to Jeff's memorial in Hoyleton. Instead of staying in Nashville, I stayed with Grace and Jack in Troy. It was very relaxing to stay with them and I really enjoyed it a lot. Since I landed relatively early, I went running on a trail near their house before actually going there. This was another of the 500 trails I'd never heard of in Illinois, actually a network of trails in the Glen Carbon/Edwardsville/Marysville area. I had planned to make a loop and eventually completed it but got started late and experienced major confusion at each intersection. The delays all added up to my finishing in darkness. At least the moon was full and I'd made the right choice at the last branch point so I did return to where I'd started from. Since I didn't have my phone with me and didn't know the area at all, I was really glad I didn't have to try to hitchhike. It had gotten pretty cold too. At least since Sara runs long distances too, Grace and Jack could understand my behavior.

Saturday morning I drove out to Hoyleton for the memorial. I hadn't been to that church before, at least that I can recall, but it was really nice. Lisa and Jeff used to do duets there on Sundays when they were down visiting. I wish I'd heard them. Tina came too and we hung around afterwards until the end. She was telling me about the hassle of getting a Ph.D. committee together in Education. It really made me glad to be in hard science, there are so many uncontrollable variables in social science.

Afterwards, I went to Nashville to visit Madeline. I stopped at Little Nashville first and was lucky enough to find Tom there. It was really very good to see him. We had a nice little visit before I went over to the house to see Madeline. Too bad I had just missed Dolly meanwhile. Madeline has had a ramp for her walker installed on the porch so she can better get in and out of the house without having to deal with the step. That's a big improvement. Tom told me she'd been having some difficulties with wildlife but they seemed to be a little better under control now. And she even has 3-4 sheep left over from when Dad could still take care of them. I won't hazard a guess as to how old they are except that they are definitely more than 10 years old. I took a few more books from my room on the trip back and talked to Dolly about helping Madeline do a little cleaning in our old rooms which might go a long way toward mitigating any further wildlife issues. Dolly is such a sweetheart and a good friend to Madeline. She is lucky to have her. (By the way, I started working – from scratch – on this letter on that trip. My resolve to write something every month this year pretty much evaporated in January.)

The Large Hadron Collider (LHC) at CERN started up at the end of November, again. After myriad problems and a lawsuit to try and block it with the idea that it would create a black hole that would

eat the earth, it was a bit of an anticlimax. (The guy who brought the lawsuit in Hawaii was featured on the Jon Stewart show, along with an acquaintance of ours, John Ellis, a theorist at CERN. The show made clear that the first guy, a science teacher, does not understand the concept of risk. The concept that something will or will not happen does not translate into a 50/50 chance of it happening was something he could not grasp.) The first research paper was posted within a couple of days of the startup and published immediately. Contrary to the suggestion at the beginning of *Angels and Demons* (“the heavy-ion guys screwed up”), it was the ‘heavy-ion guys’ who submitted the paper. So there.

The weather was pretty good for the first part of December. The trails stayed dry too so I went out to the north side of Mt. Diablo the first weekend of December, starting from an area at the bottom I hadn’t been to before. I followed Jørgen’s recommendation, with a little bit of an add-on to go over the summit and an extra 1.5 miles of out and back chasing a wrong turn. It was quite the uphill haul but the downhill return was pretty nice, not too steep. The trip to the summit was not worth too much, though. While it was rather warm at the bottom, it was really cold and foggy on top. Still it was a good run. Jørgen went out to the same place several hours after I did and went pretty much the same way (but didn’t make any of the wrong choices that I did) and did it very fast, in part because it was getting dark and he was concerned about the car getting locked in. Meanwhile I had to pick up Kristina’s Christmas wreaths and go to the GS Winter Craft Fair. Our troop has adopted a nursing home for a service project and are planning to visit several times. The first was the weekend before Thanksgiving and we are going again in mid-December. We asked the scouts at the Craft Fair to make cards for the residents and got quite a good response.

Two days later, we had a cold rain that came down as snow in the East Bay Hills. Monday morning I went running up into the fog and, in Joaquin Miller Park in Oakland, spotted fir trees covered in snow through the low clouds. It was so exciting. I continued onto another trail, back and forth, just to stay in the snow a little longer. It was so unbelievably beautiful. I called Jørgen and Kristina to let them know (but they were already planning to drive up into the hills to see the snow on the way to school) and then called Joel to tell him to drive uphill before going down to the usual place to meet me. When we got to Livermore, we found snow on the ground *at the lab!* Wow. I’d seen snow on the ‘Livermore Alps’ aka the Ohlone Wilderness and on Mt. Diablo before but never on the ground at the lab. There was also snow hills near the Altamont Pass where I’d never seen it before either. Too bad it was so cloudy the next couple of days because the snow on the hills stayed even though it melted at the lab. Actually, the next day the frost was so thick on the ground that it looked like more snow had fallen.

I made one more trip to Brookhaven in December this year. One of the DOE proposals I’d been on was successful so we had our first collaboration meeting at a restaurant near Brookhaven. Otherwise, since I hadn’t been able to get my talk ready ahead of time for a change, I was hiding away working on that. I’m glad I went though, it was pretty useful and it’s always fun to see some of my friends, the usual suspects. On the way out, I stayed in Queens with Agnes and Paul. Google maps sort of failed me and I got off the freeway at the wrong place and drove around semi-aimlessly until I stopped for help at a gas station. (I forgot my phone at home, idiot that I am, so I couldn’t call and ask for directions.) After lots of help and buying a map of Queens, I made it only about an hour late. They have a very nice (but small) apartment with a fantastic view of the city. They’ve made very good use of all available space. I noticed a hula hoop behind the couch and had to try it out. I’d just sort of learned how to do it a week or so before at the LBNL craft fair. One of the employees is into making decorated hoops and was demonstrating them at the fair. I could sort of do it with a big one and spent quite a while working on it. Kristina, of course, makes it look easy. She barely moves and can keep it up indefinitely. It really does a job working your abs, I felt like my stomach muscles had been torn for a week afterwards. After having another go in Agnes and Paul’s apartment (we all did so I felt less silly about trying), I sent Jørgen a mail asking for one for Christmas.

Agnes is teaching at the Pratt Institute, mostly a design school, and showed me some of the student projects from her Astronomy class, including a lamp with a galactic image, a book with the solar system personified and a comic strip. They were all pretty creative. The dinner was great and the company super.

The next morning I drove out to Brookhaven and spent the day discussing with Alex, Peter and Tony. I hadn’t gotten my talk ready yet but had to wait to work on it because I couldn’t get into my room at the guest house until late afternoon. A group of us went out to dinner that night to celebrate a joint DOE

proposal getting funded. The next couple of days I spent basically hiding in my room working on my talk. It was worth it, though, since almost all of it was subsequently new. My talk was scheduled for first thing Thursday morning and I left for home immediately afterwards. That evening was the Academy holiday show and I wanted to get back for the fashion show. Kristina was going to take part in it for the first time. She'd been looking forward to it since seeing it when she was in Kindergarten and I would have hated to miss it. To increase the chances of making it on time for the show, I flew back via LaGuardia airport which I hadn't been to in about 20 years, mainly because there are no nonstop United flights to/from SFO to there, only to JFK. I had trouble finding the airport signs even though I was basically right next to it. (At some point close to the water, it seems like all the signs are for bridges or tunnels.) All the flights were on time or a bit early so I arrived in time for the start of the show. I didn't sit down right away though and went off to find some food instead. I was lucky there were still some leftovers out. The show was great fun, as usual, and the Princess of Plastic (PoP), aka Kristina, looked great in her costume of Target bags. It is really funny to see the little kids so into it, practically jumping into the aisle to get the older kids to acknowledge them. For the moments up and down the aisles and posing on stage, they are stars. Unfortunately, Kristina had gotten quite sick the day before, with a sore throat, a cough, and a high fever, but she managed to do her part and she gradually recovered.

Our troop made one more trip to the nursing home just before Christmas, bringing cookies and brownies to decorate and singing carols. We will go back again around Valentine's Day and probably Easter as well next year.

Since we were going to be spending Christmas in Hawaii, we had our own little Christmas celebration (with a correspondingly small tree) the Sunday before Christmas. Instead of the usual *ris a la mande*, Kristina wanted risengrød (rice porridge) but still with an almond hidden in it, so Jørgen did that. The traditional marzipan pig prize was replaced by a box of See's candy. (I'd rather have the marzipan but the box of candy was wrapped and at hand.)

The evening of the 21st, we went to stay at that old (and semi-seedy) standby, the SFO North Travelodge to make our flight without having to get up too early. (Hey, why not do it if we can sleep longer the night before and park for 12 nights for a total of \$70? The long-term parking garage at SFO is \$14/night.)

We went to Honolulu, on the island of Oahu, first. Honolulu is the biggest city in Hawaii and the area immediately around it is home to the only freeways in the state of Hawaii: H1, H2, H3 and H201. None of them are likely longer than 15 miles, if that. The autobahn in Germany (the original inspiration for freeways the world over) were developed to help the German army get around quickly and, after WWII, former general and then president Eisenhower saw similar advantages to start building them here. Given the concentration of US military bases still on Oahu today, I might think that same driving force spawned this little system except for the fact that the freeway does not extend all the way to the two bases on the east side of the island.

Jørgen is now a valued Hilton member so we stayed in style at the Hilton Hawaiian Village on the west end of Waikiki. 'Village' is certainly a fitting word to describe the place. There are at nearly 3,000 rooms/apartment in total, distributed among at least a half dozen towers in the village, all with shops on the lower level, including at least two Starbucks (there could have been more that we didn't discover). In addition to being right on the beach, there were also numerous swimming pools and ponds. The ponds were populated with large goldfish and haunted by some seriously imported birds, including flamingoes (Florida), ibises (Egypt), and penguins (South Africa). Did I mention it seemed all a little bit artificial and surreal? Throw in Christmas decorations on the palm trees and Hawaiians in mumus and leis singing about snow and Santa and it's enough to make your head spin.

The room was really nice and spacious. We had a lanai (balcony) with some ocean view. Kristina spent as much time at the pools as she could get away with. We did quite a bit of sightseeing though and, despite being in a heavily populated area, it was actually a fairly nice place to go running. Jørgen was of the opinion that I could go the length of the beach on my way to Diamond Head, the famous crater visible from Waikiki, without being blocked by hotel property fences and this turned out to be true. Apparently the beach, if you can get to it, is for all to use.

Jørgen and I went to the Hilton luau, conveniently located on the roof of the parking garage/conference center, the first night. We tried to get Kristina to go along but she didn't want to. It is a pity because it

was very good, both the food and the show (only a little bit cheesy). It was also nice to not have to worry about getting sand out of our clothes, like that first time many years ago on Maui. They asked again, as they must at every luau everywhere, if there were couples celebrating anniversaries or were newlyweds and there were not really any. (This is completely opposite our first experience together at that Maui luau in 1989 where we were the only non-honeymooning couple there. When we asked about it, they said it varied with the time of year. Christmas time was more family business. Speaking of families, we mistook the couple next to Jørgen for a married couple and were embarrassed to find that the guy was with his mother – he looked older, I guess, because she didn't look so young.

It was a little bit intimidating to go out jogging from the hotel complex but once away from the immediate area of the hotels, it was very nice. We drove out to Diamond Head and hiked up in less than half the time they suggest it to take. It is less than a mile on the trail with quite a few stairs and two tunnels to get to the top but the signs make it sound like you are starting out to climb Mt. Everest. It certainly was hot, but the view from up there was really nice. One thinks of the tropics when thinking of Hawaii but the east side of Oahu, like the south shore of Kauai, gets less rain and the ocean side of Diamond Head is covered in succulents like cacti. Once we got back to the crater bottom, Kristina got a smoothie from a catering truck that she decided was her favorite one of the whole trip.

We tried to go to xxx, which is supposed to be a prime spot for snorkeling, so Jørgen could introduce Kristina to its wonders. It wasn't possible to get into the park because the parking lot was full. We tried more than once but it never opened up so we finally moved on. We did find a less crowded place to sit and eat lunch and we saw a sea turtle swimming near the beach.

Even if they didn't end up snorkeling, we did go to the Waikiki Aquarium, run by the University of Hawaii. It is pretty small but has a rather good collection of fish unique to the area, including the Humuhumunukanukaapua'a, a rather small fish that was the star of the film they showed. The film was basically to raise awareness to swimmers and divers that, just because you're in the water with a wild animal or a coral reef doesn't give you the right to try to play with it (the fish, turtles, etc.) or step on it (the reef). So every time a person in the water was shown doing something wrong, it was accompanied by shouts of 'ouch' from the fish or coral. Very effective. They also had two monk seals, an endangered species native to the islands, and a touch pool Kristina liked. We held hermit crabs in our hands and it tickled when they walked across our palms.

In the evening, we went out to meet Bill Myers and his wife Valerie for dinner at the xxxx House, which is a sort of sports bar but since we were right by the window it wasn't too loud. It was a very nice meal, as were most of those we had on this trip. Bill and Valerie live in the Honolulu area, Valerie was born in Hawaii so it was easy to relocate there and not so expensive as having to buy new property. Bill has been participating in an annual sailboat race from San Francisco to Honolulu and last year his boat won its category. He had invited Jørgen to go sailing with him, something he'd been looking forward to for a long time.

The sailing adventure was Christmas Eve. Unfortunately it was pretty calm and they could not actually use the sail more than a few minutes. They motored out to a large sandbar where they spent about an hour walking around in ankle deep water. The area was just adjacent to where Obama spent his vacation time and there was an excess of helicopters and naval ships to be seen. But there were also quite a number of large sea turtles, some seals, a few whales, and one huge ray.

While they were out on the water, Kristina and I went to Pearl Harbor. We left at 7:30 to get tickets to the USS Arizona memorial. Since you have to take a ferry over, the number of people that can go per day is limited to the number of available ferries and the number of seats on the ferry. We got in line at 8:15 and could only get the last two tickets for 12:45. (They eventually sold out for the day.) To pass the time in between, we visited the USS Bowfin, a WWII submarine, and the Pacific Aviation Museum on Ford Island, next to Battleship Row. You take a bus over than runs about every half hour so you have to plan your timing so that you can get there and back without missing the 'boat'.

The submarine museum was really interesting and included an audio tour. They had one for adults and one for 'families' which was sort of dumbed-down a little for kids to listen to. Kristina did the adult tour and liked it. She accidentally pressed the family number once and thought it was very lame. She

did think the museum as very cool though. It went from the first submarines through nuclear submarines and submarine based missiles. There were a lot of really cool battle flags that the submarines flew when returning to port to show how many enemy ships they had sunk. Of course I had to make objection to the exhibit about how fission works – it was wrong. On the way out, I asked to speak with someone and spent some time with one of the curators making a more realistic drawing for how to fix it without changing it all that much. I was in there with her a long time while Kristina was going out to the car and getting her wallet to pay 50 cents to press a penny. She ended up waiting outside a while for me.

When I got out, we went on board the sub. It was very interesting to go down and see how 80 guys managed to live on board one of those things: there is only room for about a third to a half of them to sleep at any one time so they sleep in shifts. Some of the guys slept over the torpedoes and apparently found it comfy and reassuring. There certainly wasn't much space for any personal stuff in that little cigar. I was impressed that the cooks could produce meals for everyone in the teeny, tiny mess kitchen. Out on deck though was very nice. The sun was warm and looking down into the water, we saw a manta ray swimming by and some large fish that looked like they were kissing the side of the sub but were more likely eating off of it like a plate.

After that, we took the bus to the Aviation Museum on Ford Island and had a brief look around. I learned a couple of interesting things there. First, I hadn't realized that there were other, private, pilots flying around Oahu when the Japanese came to bomb it. A couple of the planes were shot down but one of those that escaped unscathed, with a man and his son on board, was on display in the museum. Also there were the remains of a Japanese Zero that crashed on the northernmost inhabited Hawaiian island, Nihau. That island was, and still is, privately owned. The same family owns it today that had it in 1941. Since there was some concern that the Japanese might try to take it over and use it as a base, the owner had been plowing irregular ruts across the island over the course of several years which indeed led to the crash landing of this particular plane. The pilot conspired with one of two Japanese men living on Nihau to try and take it over. They were stopped by locals, the pilot was killed and the local man killed himself. Fortunately the displays in the museum were not so extensive because it was quickly time to get back on the bus to be sure to make it on time for the visit to the Arizona.

The Arizona memorial has been operated by the National Park Service since the mid-80s so Kristina could do the Junior Ranger program while we waited for the theater to open up for the introductory film. Even though it was about the beginning of the US involvement in WWII, Kristina still called it 'sweet', I think meaning that the ship became a memorial rather than how it came to be one. After the movie, we went out to the ferry, operated by 2 navy sailors. Really heavy duty, hauling hundreds of passengers back and forth across the harbor all day long.

The gleaming white memorial building sits perpendicular to the length of the Arizona, next to one of the smokestacks, still partly protruding rustily out of the water. Over 1000 men below decks on the Arizona were killed pretty much instantly as the concussive wave of the explosion tore through the ship. It settled to the shallow bottom and there it remains, the hull mainly buried in the sand and the sailors still inside her. The top part, from just below the water line, was salvaged and cut away. The ship is now designated as a national cemetery and former Arizona sailors who survived that day are now allowed to be buried with their comrades if they so desire. There are rules, of course: they must be cremated and their urns placed in a certain compartment near the outside of the ship. The divers who go down to place the ashes are the only ones allowed anywhere close to inside it.

Since the battleships were all fueled up for a likely trip to San Diego, the fuel tanks contained over a million gallons of oil when she was hit. Most of it did not burn following the explosion and is still sitting in the tanks buried under the sand. When standing on the memorial, I could see a bit of oil floating on the water so I asked the Park Ranger on duty if it was really still leaking oil after all these years. He replied that it is giving off about 2 quarts of oil per day and that there are still about 500,000 gallons in the tanks. At that rate, barring catastrophic failure of the tanks, it will take hundreds of years to all leak out. I asked if there was a possibility the tanks could fail and he seemed doubtful. They are mainly buried so they corrode more slowly and it's easier for their structural integrity to be preserved. Divers go down almost every day to monitor the situation but are not allowed to go inside to check more thoroughly. Because it is

a cemetery, even if they determine that the amount of oil leaking each day is increasing, they have to come up with a solution that doesn't involve anyone entering the ship.

The ranger then said to me that one of the questions he gets asked most often is that, now with the sophisticated DNA technology at our disposal, isn't it time to bring the ship up and give the sailors a 'proper' burial. As if burial at sea, even if in this case it is only just offshore, has not long been a common method of burial for soldiers and sailors who die aboard ship. If they'd been able to do it then, perhaps, but now it seems a bit absurd. Indeed, if it was such a 'bad' thing for them to still be with the ship, then why do men who survived that day decide to be placed there with their shipmates than in the local cemetery (or even Arlington)? I think for them the choice is less because of any implied lack of love and concern for any family members left behind than with the shared intensity of experience. Many of those men probably saw more action during the course of the war and perhaps wanted to be back where it all started, with their buddies whose war might have ended before they even knew it began.

After leaving the Arizona, we were finally done at Pearl Harbor and went over to the Bishop Museum, in the former home of an Hawaiian princess who married a Caucasian. It took a little while to find since I took an exit clearly marked with the name of the museum but, once off the freeway, there were no more signs and, even with a detailed AAA map of Honolulu, it wasn't entirely straightforward to get there from where we found ourselves. We were just parking when Jørgen called asking to join us there since he was done with the sailing. Within a few minutes, Bill had dropped him off and we spent some time looking around the Polynesian exhibits. It was really quite impressive with some beautiful designs and interesting descriptions of customs but we were a little saturated by then and couldn't give it the time we probably would have if we were not all rather tired. It was starting to rain a little bit too and I still wanted to go out running somehow so finally they drove back to the hotel and I ran back across town to Waikiki (still in my normal clothes), mostly on a road parallel to the freeway. It's clear that the people who live in the neighborhood I ran through would have trouble affording a couple of nights in one of the big tourist hotels.

For Christmas Eve, Jørgen and I went to one of the hotel restaurants, Bali, and found it quite good (it is one of the highest ranked on the islands). Their special send off to all their customers is a chocolate replica of Diamond Head with a crater filled with truffles. It is placed on top of a container holding a chip of dry ice so it is steaming when it's brought out, like a real volcano instead of an extinct one. The effect was better than the chocolate.

We would not have had time to go to the Bishop Museum another day because the next day was Christmas Day and everything was closed. Instead, we drove up to the north shore of the island, starting from the east first. Earlier in the week, we'd come back the same way but had not bothered to stop at the viewpoints. Too bad because Christmas morning was drizzly and foggy, a leftover from the rain the night before, and it was impossible to see anything. It was a pity because the clouds also obscured the jagged, vegetation covered mountain ranges that make up most of the island. Once we got to a beach Jørgen was considering stopping at, I got out to run and this time was smart enough to have brought my running clothes along. The changing facility was basically hiding behind a broken down wall and hoping that no one came along the beach from the other direction or ogled me from the road. (The port-a-potty was really too small and dirty to change in – or other things from the smell of the wall – nice.) The waves were too high to allow going into the water but it was fun for Kristina just the same.

We agreed that they'd simply pick me up when they caught up with me on the road after they were done. I ended up getting quite a good run out of it, first discovering a bike path when I hit the first town so I didn't have to stay on the road, and then dodging pedestrians and cars for the next several miles after that. Apparently we had stopped at the only open beach along the north coast. The others were closed off by caution tape with the exception of the Wailea Beach Park where it seemed like zillions of people, locals and tourists alike, were converging to watch the surfers. It was pretty wild, the traffic jam though was something that even the Bay Area would have been proud of. I was glad we had come from the east rather than straight north though, the line of cars from that direction was even longer.

I was finally picked up by the turn to a town off the main road where we tried to find a place for lunch. The one obvious plot was completely full and while the coffee shop had sandwiches, they were out of what I wanted. Jørgen took their burrito and regretted it. I held out to the 7-11 to get a drink and found that

their seafood salad sandwich was not too bad at all. We ate them hanging around outside the 7-11. Merry Christmas.

In the evening, we ventured outside the hotel again to an all-you-can-eat Japanese buffet across the street. In this case, all-you-can eat was quite a bit since they had a great variety of sushi, salads (which I unfortunately didn't discover until I was stuffed and ready for dessert), hot dishes, and to satisfy any unadventurous mainland types, ham, turkey and mashed potatoes. The desserts included crepes made to order and a chocolate fountain for dipping fruit. Yum.

Over the last few days, Kristina had been after me to get a swimsuit. I'd looked around but hadn't seen anything I'd dare put on for less than \$100 and I was not about to pay so much. When I returned from my run the next morning though, I noticed a shop selling souvenirs and swimsuits which were more affordable so before going to the airport, Kristina and I went to have a look. Many were too flowery for her taste or too skimpy for mine (I can't picture myself in a bikini) so we ended up with a basic black one piece for considerably less than I would have spent across the street at the hotel.

Our flight to Kauai was nice and short. Across the short distance from Oahu to Kauai, time seemed to slow down to a crawl. We stayed at a resort with two-bedroom apartments that didn't have any real beach, only coast, and none of the glitz of the Hilton Hawaiian Village. The pool was also smaller (only one) and more sedate. Kristina found it infinitely boring. After all the bling of Honolulu, it did take some getting used to. It was, however, a joy to have our own kitchen, two TVs (less conflict), and a washer/dryer in the closet. We made good use of all these things. I have to say that they are quite behind on the internet, we had a cable to use and could only register one computer at a time so we'd have to pay double if we both wanted to connect so everybody used my laptop for email and whatever.

Kauai is not a very heavily populated island. The human population, likely even with tourists, is far exceeded by the wild chicken population. Kristina is sure that they are mostly red jungle fowl and, in fact, someone we later mentioned it to, agreed that they probably were. The other thing the island has in abundance is frogs. I didn't see any live ones but they constitute the largest fraction of the roadkill. The next largest fraction is probably chickens. There are wild pigs on the island too and they are hunted for sport in some areas. While we didn't actually see any up close, I think I heard one when out running on the last day of our trip. Something snorted in the bushes and it was not a chicken or my imagination.

We stayed in Poipu, pretty much a resort area, and got our groceries in Koloa, an older town further inland. Jørgen checked out the snorkeling at the local beach park while Kristina and I went shopping at the Big Save market (the grocery chain on Kauai). When we finished, we went back to pick him up, via a bypass road that went by an old sugar mill out in the fields. We later learned that the last sugar mill on Kauai closed in November 2009, after the harvest. Turns out it's more lucrative to sell the land for condos or coffee growing. When we got to the beach, Jørgen told us there was a 'dead seal or something' on the beach. It turned out to be a live monk seal taking a nap. Since there are so few, when one comes ashore in a public area, the local officials cordon off the area around it to try to keep people from disturbing it.

At Big Save we each got our own cereal for much cheaper than the cost of buying individual containers every morning like we did in Honolulu which was, there, lots cheaper than the hotel breakfasts, as usual. (You can pay more for a higher quality, *i.e.* larger, room or unit but get less in terms of service. Again, at the lowly Travelodge the internet, parking and breakfast are free.) Since we could now cook as well, we invested in a box of pasta for Kristina to eat while we went to the various great restaurants in the area.

The first night though, we went over to the Hyatt for a demonstration of Hawaiian dance. It had been raining again and the seats on the patio were wet. Kristina didn't want to watch the dancers initially but eventually found it interesting enough, mainly because most of them were girls from a local dance school and a couple of them looked quite a bit younger than her.

We had a somewhat more relaxed program on Kauai but still seemed pretty busy. On Sunday we went to the Spouting Horn, a cave where sea water comes in and then jets high in the air. It also makes some moaning noise. There was an even bigger one just adjacent to it but some time back, when the area was still cane fields, some planter threw dynamite down that hole because the spray was landing on some of his sugar cane. We had to run a gauntlet of locals selling jewelry – manufactured elsewhere of course – on the way to the viewpoint. I got a shell necklace for \$3 and wore it almost every night, quite a good deal.

Jørgen and Kristina tried snorkeling together after that while I walked back to our place. It was a fairly nice walk and I was mostly able to stay along the coast. They didn't fare so very well though. Kristina was rather nervous and, since she hadn't wanted to try out the mask and snorkel in the pool ahead of time, couldn't make it work quite right. She ended up getting salt water in her mouth and had enough of it rather quickly.

I finally got to use my swimsuit in the shallow pool, playing ball with Kristina. It was kinda fun and made her happy so it was worth it. However, what colds or flu they had had got to me by the next morning and I woke up with a sore throat that ended up lingering for the rest of the trip so I didn't go back again. Kristina went almost every day, including the rainy ones.

We went to Waimea Canyon on Monday and stopped a lot of places for views. It is really beautiful with lots of red dirt/rock. The highest overlooks are around 3000 ft. so it's also considerably cooler up there than at sea level. Since I'd planned to go running somewhere along the way, I was wearing a sleeveless singlet and hadn't at all bothered to bring a jacket, idiot. As we drove up onto the plateau, I watched the ambient temperature gauge inside the car plunge from near 80 F to around 60 F. Finally, at the Ko'kee Park Visitor Center, I bought an extra-large T-shirt (short sleeves anyway) to throw over my skimpy singlet. It was ridiculously big but did the job.

We had planned to take a long hike in that area later in the week but our experience on the trails near the end of the road pretty much changed our minds about that. We started out from there on the Pihea Trail which was kind of slick and muddy, to connect to the Alakai Trail through the highest swamp in the world, Super. In the 1990s they installed a boardwalk on the Alakai Trail, which we reached after about 1.5 miles, and it looks like nobody has maintained it since. The wooden (what were they thinking??) boards are covered in chicken wire which has curled up or come undone in many places to make a tripping hazard and the boards themselves are succumbing to the humidity and dampness of the swamp. Kristina hadn't wanted to go at all but when she finally got going, she made better time than either of us. She didn't want to go further than the intersection of the two trails and I thought it was starting to look like rain anyway so was glad enough to start to turn back. When Jørgen came along from a side trip to a viewpoint, his description sounded so rough that I was glad we hadn't tried to go with him. We cooked up a plan where I didn't have to return over the trail we'd come out on, which I was dreading, but instead would run out to the trailhead of the Alakai Trail and then out to the paved road and down toward Waimea again if they were not yet at the Visitor Center once more. Returning to the trailhead was easy, it was rather level and I only had to avoid tripping over chicken wire or broken bits of boardwalk. After about half a mile the boardwalk was finished anyway so that made life easier. From there, it was necessary to follow a dirt road out to the main road which took a little while. I didn't have a map and none of the side roads were marked and the conditions were such that it wasn't really possible to figure out which way was really the main road. Fortunately at the one really confusing place, I met a car coming in and the driver told me I was going the right way. I came out across the road from the visitor center and didn't see our rental car so I just kept going down the road with no way of knowing when they would catch me. Our phones didn't work up there so I couldn't call and they ended up waiting quite a while at the visitor center, not really believing that I had come and gone before they could get there. Given the condition of the Pihea Trail relative to the dirt road, even though it was longer, and then the potholes in the paved road, it wasn't that much of a surprise. They finally came after I'd gone 6 miles down the road and was beginning to worry that I'd get to the split in the road back down to Waimea ahead of them and not be sure of which way to go. It didn't actually rain like I'd thought until the next day. When it did though, it really killed any idea of going back out there to hike up and down hill on such slippery, muddy trails.

The next day we took it pretty easy. We went to Lihue, first to the Wailua waterfall just outside town, and then to the Kauai museum. By that time, it was raining a bit so we were encouraged to stay inside and take it in. The most interesting thing, in my opinion, at the museum was a description of the 'Russian' fort we'd seen outside Waimea the day before. A German surgeon, Georg Anton Schäffer, who worked for a Russian trading company made a deal with the King of Kauai to protect him against Kamehameha who had united the islands through battle except for Kauai when the local king unhappily made a deal. He wanted to renege and wanted the protection of the Russians, which this guy promised without, of course,

actually consulting them. He built this fort and extracted quite a number of honors from the king. He was eventually found out but got away, ending up living Count von Frankenthal in Brazil. The rest of the day we spent shopping with various degrees of success. Yes, we went to Hawaii and visited WalMart. Twice.

On the way home, we took a look at the Menehune fishpond built by the Menehune people (supposedly overnight, according to legend) who inhabited the islands before the Polynesians. Their rock work is quite advanced (somewhat on par with that of the Incas, it seems), far better than what the later inhabitants have managed. This fishpond, next to a stream, was built as a gift for a princess and her brother. It mostly looks like a nice pond now since the walls around it are overgrown.

We ventured around to the north end of the island the next day. We first went to see the Opaeka'a waterfall, along the road a little further north from Lihue. The waterfall makes a contribution to the Wailua River which has the biggest river mouth in the islands and was well known throughout Polynesia. According to the guide book, ancient Polynesians would come from Tahiti to see such a big opening to the sea. Yes, Hawaii was the ultimate tourist destination already then. The road continues for several miles further until the pavement stops, about as far into the interior as you can penetrate without a four wheel drive vehicle, aside from the road along Waimea Canyon. Along this road are true Hawaiian archeological sites, holy places called heiaus and a place called the Birthstone where all the Kauai kings were required to have been born. Near the end of the paved road are several hiking trails. We took one of them up to a ridge. Kristina really didn't like this one and complained a lot even though it was considerably easier than the Pihea trail she'd taken in stride a couple of days before. It was getting ready to rain when we were on the way back but obliged us by holding off until after we'd had lunch. We'd parked by a picnic area near the south end of the Powerline Trail which passes under the rain shadow of Mt. Waialeale, the wettest spot on earth (which should have served to warn us), on the way to Princeville on the north shore and would play a big role in our New Year's Day plans.

That day, however, we drove down to the town of Kapa'a and bought lunch at a bakery run by a guy who'd made his start in the Bay Area before moving to Kauai. We sat down by another beach and then drove to the end of the road on the north shore. It was raining on and off by that time and the beautiful rugged mountains of the NaPali Coast were completely shrouded in fog. We didn't get so much of an impression of the supposedly fantastic beaches in that area in such weather but we did come to appreciate why so many homes along the last 10 miles of the road were built high on concrete piles. The road had lots of one lane bridges which also made progress slow. We did stay for a while at the Ke'e beach at road's end. Although we didn't stay long, Jørgen got in a little bit of snorkeling, Kristina played in the water and I ventured the first few hundred feet of the famous Kalalau Trail, enough to give me a taste of how difficult it would be in such weather. It was a beautiful place, sort of magical, maybe because of the jungle with the huge trees backing the beach, and it would have been nice to have more time there. It rained most of the way back.

New Year's Eve we had an appointment at the resort around noon so we stayed close, making a quick trip to the National Botanical Garden just down the road from Poipu. It was beautiful and lush. The parts of the garden with plants imported by the Polynesians when they came to Hawaii, the native Hawaiian plants and the spice plants were particularly interesting. We spent most of the afternoon on our appointment and just had enough time to run out to Big Save in Koloa to buy food for our New Year's Eve dinner. By the time we were done the rain was pouring down in buckets and, of course we didn't bring any jackets. It let up just a little to let us get back to the car but that didn't mean we stayed dry. Kristina thought that was a great time to head out to the pool. I prepared the New Year's Eve dinner in our kitchen, using packets of mustard from the resort grill and strawberry-guava jam from the breakfast supplies as spice. It wasn't a very elaborate meal but it turned out OK. It was a pretty quiet New Year's Eve altogether, though Jørgen went down to the beach to view the nearby fireworks at ten, a very nice experience, he reported, due to the warm evening and the full moon shining bright from a now clear sky.

The next morning it was cool but clear and we started out early to attempt our greatest logistical challenge of the trip. Kristina was going riding at Princeville Stables, near the north end of the Powerline Trail. We'd managed to negotiate a private ride for her alone so neither one of us had to get on a horse ourselves. We went back to the Arboretum at the end of paved road we'd driven two days earlier where

I got out, took off my shoes and socks to wade across the creek to the unpaved part and prepared to run north to Princeville on the Powerline Trail. (Given what was to come, I might as well not have bothered.) Meanwhile Jørgen dropped her off, drove to the north end and started hiking south. When we met, he handed over the car keys to me, and I then picked her up and we went back to Kapa'a to meet him at the other end. We managed, just barely, to pull it off.

While the Powerline Trail is only a little more than 10 miles long, it took me nearly 3 hours to get to the other end, more or less intact. It is absolutely unbelievable that it was once possible to *drive* from one end to the other. The trail used to be visible from space and I'd guess that some parts still are but the trail hasn't been maintained in 14 years and it shows. In this sort of climate growth runs rampant if allowed. The uphill part to the ridge from the south end was not too bad except that I pretty quickly figured out that even if the exposed red dirt and rock looked dry, it was usually still slick. The overgrown parts of the trail were generally wet and swampy. My feet stayed relatively dry until the ridge when it was not always possible to avoid the water. In one particularly nasty spot I couldn't see any obvious way around the pond covering the trail and headed straight through. At one point, I went down with one leg to knee depth. I felt lucky to get out of there without having to grope for a shoe stuck in the depths of the mud, both stayed on to my big surprise. It was very clear, even near the top of the mountain where there was only a little bit of cloud, but I didn't have much time to look around since I had to concentrate on each step. When I could finally see down to the ocean on the north side, the power poles I'd been following seemed to stretch ahead forever, a rather depressing sight. Going down was a little better and the wet spots started being less desperately wet and the trail less uneven.

When I met Jørgen, he began explaining how bad the trail ahead of me was. I had to laugh and told him that so far I thought this part was infinitely easier than where I'd come from. I took the keys and hurried on and then made my mistake. In a clearer spot, I sped up a bit and didn't notice a little rock sticking up out of the mud. I hit it pretty hard with one toe and went sprawling. It probably looked like something out of a cartoon. While I didn't end up face first in the mud, my face was probably the only part of my front that was clean. Of course the car keys flew out of my hand but luckily were just in front of me in plain view on the trail. The first couple of steps were sort of painful but I had to get running again to be on time to get Kristina. Jørgen had also warned me about two parties of hunters along the trail closer to Princeville. I didn't meet either party, just a family out for a hike who looked at me like I was a space alien when I said I'd come up from the south. (They asked. I probably didn't look like a good advertisement for a nice hike at that point either.) I did see a truck, probably belonging to one of the hunters, before the end of the trail. I was very impressed at the bravery of driving in even that far. I managed to get to the stable to pick up Kristina even before she returned from the ride. She had a good time and that is what mattered. It's great we were able to work it out for her.

The women at the ranch were very nice but couldn't really offer me any place to change or clean up. They did say that the shopping center in Princeville had public bathrooms. We went there so I could change and scrub down. Once the mud was removed, I found a multitude of scratches and bruises, nothing serious though. Kristina got her smoothie and I got a large drink that I inhaled on the way back to Kapa'a.

Jørgen didn't fare much better on his hike. He didn't stay dry either and ended up with quite a nasty cut on his leg, getting cut by a branch that broke under his foot. We didn't have so long to wait for him since it took a while to get back with all our various stops. We made very good use of the washing machine back in our place. Our shoes didn't get dry before we had to leave the next day but they will never again look the same, because they have acquired that red color which seems to affect everything on the island.

The flight back wasn't until the afternoon so we took our time leaving the next day. I went out for a last run in Poipu, having finally found an ideal spot at last. The main road through Poipu becomes unpaved just a little beyond our turnoff and continues past another horse stable and turns down to a beach. That morning I finally had time to get to the end of the road, a small parking lot with a dumpster, whoopee. I did spot a narrow trail that I followed over a sand dune through a lot of bushes to emerge on a narrow strip of beach that was absolutely gorgeous. I spent a few minutes there, not running, just watching. Like the Powerline Trail the previous day, I was all alone, but this time it was peaceful. I saw someone walking toward me on the beach so I wasn't alone after all. I waited until he was getting closer and then disappeared back into the trees, leaving it to him.

We didn't have the best of luck with the weather but it was generally a very nice trip and a pleasant way of finishing the year and starting the new one.

It hasn't been an easy year for all of those close to us and we hope that although the new year will bring new challenges, it will also bring new joys.

———— ★ ————

We wish you all a

Vi ønsker jer alle en

Merry Christmas

Glædelig Jul

and a

samt et

Happy New Year!

Godt Nytår!

Ramona & Jørgen & Kristina