

Legendary Research Trips to Yellowstone (Some Tetons For Fun)

All Boyz Backpack to Heart Lake and Difficult Joseph's Coat



Left to Right: Boyz at Beauty Pool, me atop Mound Spring, Joseph's Coat Basin - a serious off-trail undertaking

Editing this collection was difficult because, since 1997, I have been involved in professional research in Yellowstone, leading students there 2-3 times each summer. Given the spirit of this page - backpacking, general information about more off-the-beaten-track places, and my always salty writing (much of which revolves around accidental self-discovery), I chose to present what I consider my two most significant research-driven trips to the park in this collection.

Sweating Sulfide and Sleeping With Grizzlies - August 1999

I remarked during what remains my best Yellowstone adventure ever (not to mention one of my top trips ever) that this experience, in a single week, made up for my never having brothers. I went to Yellowstone for 10 days in 1999 with 5 guys (then ages 20, 21, 25, 27, and 28). When you make a decision to lead a trip like that you accept a few things: first that, no matter what, they are going to kick your (then) 32-year old ass on the trail; and, second, that "leading" is not an appropriate term. Guiding the boat down the rapids is more like it. I cannot speak more sincerely of the excellent group dynamics, the amazing weather, the surmounted challenges of backpacking in grizzly terrain, climbing to peaks over 10,000 feet, the excellent food, and the microbiology. Of course, you will ask: how did I wind up in Yellowstone with all guys? In the middle of spring term, 1999, I handed out information about my summer Yellowstone trip to my upper division classes. I had to limit the party to 6 to compete for backcountry camping permits - important because we would be competing first-come-first-serve for our intended multi-day trip to Heart Lake (my first time leading students backpacking before). Given that Heart Lake is closed through July because mothers rear their young there, I wrote a blunt and forbidding description of the itinerary: I would only take students who were fit and experienced, who had the right gear, and who had no serious fears about grizzlies. Key excerpts: "We will hike 1-8 miles per day. Our backpack into Heart Lake, a known grizzly habitat, will be 3-4 days and it will require an 8-mile hike in/out with a pack (35-50 lbs). There may be an optional trip up Mt. Sheridan, 10,000 feet (daypacks only). I have research permits that allow us to sample and travel off-trail. I am VERY conservative when it comes to risk issues - if I pull the plug, we all back off no questions asked." My first takers were Chris and Kevin. Chris, extremely bright and active in student leadership, wants to attend medical school. Kevin, one of my pre-dental advisees, has an unending sense of humor, is Norwegian, and both our families came from Bergen. Next came Ben, a quiet EMT and experienced outdoorsman who had been an exceptional student on my first trip to Yellowstone with undergraduates in 1998. Ben, horse-packing in Washington just before this trip, would meet us at the park. Finally, I asked Rex, a gregarious student with tons of outdoor experience, including mountain search and rescue work, backpacking, and hunting. Neither Rex nor Ben knew any others on this trip. I had (unfounded) concerns about fitting all these guys together in terms of personality and age and life experience. Back in March, I also invited Brian, a friend from the University of Washington (see Rainier climb) who had helped with research and curriculum development in 1998-9. Although I liked and owed Brian, my primary motivation in bringing him involved my need for a non-student tent-mate (he would drive himself from Seattle). The team was supported by \$1200 from the university. I went a little over budget (out of pocket) when I treated the excellent crew to a huge dinner out because everything went so well. Going over budget didn't bother me, though, because this trip was a great vacation (and I can't say that about all my research trips with students). Advanced preparation seemed more minimal and last minute because I had just gotten off the Middle Fork of the Salmon - broke from car repair expenses (i.e. plans to buy a roof rack were not going to happen). Then I received a letter from my good friend Matt, who had just quit his job at Boeing and hoped to join trips I was leading. Given that he had a pick-up, I could suddenly envision hauling everything we needed. Although having Matt along could be a problem with permits, I was willing to take that risk. Our non-camping menu was modeled after last year's: jambalaya, lasagna, tortilla soup, cold cereal, and PBJ's. The most challenging food issue (aside from the prospect of feeding a bunch of guys), was camping food, something I'd never organized for a large party before. In the end, we did a cold dinner the first night (tabouli salad, pitas and hummus) and an instant noodle dish the second night. Backpacking lunches included salami, crackers, cookies, and GORP. Chris, Kevin, and Rex joined me for a planning party at my house a month before the trip. We discussed the project, food, equipment, and concerns people had. The topic of grizzly safety was moderate and I discussed the fact that I would be bringing pepper-spray/whoop-ass. We talked about camp and trail safety, and all the myths and facts about bears - including, given my gender, whether I was going to be "safe." Notably, I didn't bring this topic up (it was Kevin). Indeed, I considered it a good sign that they were not shy with the topic of menstruation.

On Saturday Aug. 21, Matt showed up at my house and we loaded his truck, ate big food, drank a bottle of cheap wine, listened to bad music (Elton John/Kiki Dee), and only slept 3 hours. It was the first time in ages I was so high on excitement that I lay awake wondering when that 3:30 a.m. alarm was going to go off. And when it did, I leapt into work mode. While I finished packing all the perishable food on ice, Matt looked at me groggily, eating a tomato-pesto bagel and leaning against my kitchen counter under the way-too-bright lights. Chris and Kevin showed up at my door at 4:00 a.m., having walked a few blocks with their backpacks. Chris had just taken his MCATs the day before. Running 10 minutes late, we drove to the

university where Rex was waiting (he had been up all night timing his sister's contractions). Sufficed to say, we were all looking pretty grim. The driving arrangements that day turned out to be nice and convenient: Kevin and Chris were in my car while Rex and Matt kept each other awake in the truck. It was a beautiful morning. I KNEW we'd have astoundingly good weather this year - after the garbage on last year's trip. During our pit stop in Hood River for a greasy breakfast, I knew people were bonding well. My biggest concern was Matt and Rex in the same car. Matt is this calm, poetry-reading SNAG vegetarian with giant hair (he gave me a Dar Williams CD the night before as an early birthday gift - that says it all). Rex, on the other hand, is loud, hunts, and probably would NOT appreciate Dar Williams. What I always forget is that Matt is originally from small town Texas. Let's just say: Rex and Matt had more common ground than expected. They were wildly funny together and it was a pleasure to see their many layers on this trip. My car was more somber - at least until I switched off driving in LaGrande. The rule in my car, of course, is that the driver picks the music. Somehow I thought guitar-picking Chris and Kevin might appreciate Bela Fleck. No dice there. My only CDs that earned favorable responses were Eric Clapton, Dave Matthews, and the Goo Goo Dolls, a recent fascination. I learned to appreciate Alice in Chains, Days of the New, and even bought Garbage and Eve6 after being introduced to them on the road. I only wish I could remember this grizzly-inspired version of "Tripping Billies" we had going. Alas, that's all I remember from the whole drive: 15.5 hours and 870 miles to West Yellowstone, rotating through drivers a couple of times and playing chase with Matt and Rex. Upon arriving at the hotel (8:30 p.m.), it appeared as though Brian and Ben had checked in but were not around. We divided up the rooms and unloaded things: Chris and Kevin shared a small cabin; Ben and Matt shared another; Rex, Brian, and I took the mobile home unit with the kitchenette (the staging area). After cooking a heavy tortilla soup, I thought everyone would be out like a light. But the guys were just getting started. At the pre-trip meeting, I'd given everyone a serious speech about etiquette (most based on a things I learned last year). As the conversational BSing infectiously rose, I reminded them again: no curfew but you all better be FULLY functional at 7 a.m. AND if I hear you while I'm trying to sleep, I will march out here and swear like a sailor. I was told they were up playing cards until 12:30 a.m. - but I wouldn't know because my room was at the far end of the unit. Exhausted, I hit the sheets and was out like a light. The next thing I remember was feeling like there was an earthquake. I sat up to Brian bouncing the corner of the mattress in an effort to wake me. I consciously remember being in this dream... but I couldn't remember it if you asked me then or now. As with most days, we ran half an hour behind. I - who made the error of claiming I always rose with the sun - received plenty of jabs after Brian woke me at 7:30. Oh well. My response: I was rising with the sun ON PACIFIC TIME.



Left to Right: Brian at Morning Glory Pool, Riverside Geyser, Grand Geyser

Day One - Mostly Upper Basin

Upon entering the park, we inquired about Heart Lake backcountry permits at the facilities just within the gate. Unfortunately, we had to accept both good news and bad: there was a 6-person site open for two nights, beginning in 2 nights (August 25-27). Matt, who would only be with us through the 26th, would unfortunately have to bow out. After signing all the paperwork, we watched a mandatory video on backcountry safety in the park, emphasizing bear encounters. Surprisingly, I was not freaked out watching this. Being surrounded by all these guys made me feel rather invincible. And then we were off. The first drive into the park on any given trip is always magical - even for me still. Mostly I love to watch the expressions on Yellowstone virgins when they first see the thermal basins: the plumes of white rising from the plains, the sight and sound of Old Faithful, the colors of the springs. First on the agenda: go to the visitor center and check the eruption times for the big ones - Grand, Great Fountain, and Old Faithful. Grand wasn't to go off until 6 p.m., Great Fountain at noon, and Old Faithful in 10 minutes. After watching the latter from the crowded boardwalk, we proceeded to hike around the Upper Basin (to Morning Glory). Said hike was fascinating as always - mostly because all the more lesser-known big geysers (Beehive, Daisy, Grotto, etc.) were going off one after the other. We talked about the dynamics and geology of geysers, defined all the geyser-related vocabulary, admired the thermal gradients, and talked about the microbes and their temperature-defined niches. Morning Glory, of course, always necessitates a discussion of impact issues and pollution. On the way back, we noticed a crowd around Riverside and decided to wait. This was one I'd never seen for real - shooting its impressive spray over the Firehole. Within 10 minutes, she went off and it was so worth it. After that, several others and I started getting WAY sugar low. Consequently, we agreed to head over to Great Fountain and tailgate sandwiches and chips. When we pulled up, said feature was just starting the final round of her three-round display. I don't think people were terribly disappointed given that we finally had just filled our bellies well. We headed back for a look-see trip to Octopus Spring, the most studied spring in Yellowstone. Octopus is about 5 minutes from Great Fountain, accessed via a social trail from the parking lot. I think the true meaning of terms like microbial ecology, thermal niches, pigments/coloration, etc. really hit home as we marveled at this spring and its many run-off channels. It also gave everyone that irresistible taste of having no boardwalks or people around. I think, more than any other time on any of these trips, I realized how meaningful and tantalizing being a backcountry research scientist is. By the end of the trip, the guys would unanimously agree that they would rather walk up to a nondescript nameless spring in the middle of nowhere than visit any public place with a boardwalk. And that sense would only heighten as we headed into the true backcountry to sample

Hillside Springs, one of the most promising sites I study and one of my all-time favorite places to spend an afternoon. The short hike to Hillside begins at Biscuit Basin and follows a trail for about a half a mile. It was damn hot when we set out around 2 p.m. (being stuffed silly with big food didn't help). I was pleased to see how well the group hiked: Rex in the lead, carrying one can of whoop-ass and talking loudly; Chris and Kevin near or at the lead with Rex. Brian was somewhere between them and the rear. I was always near the end, of course. Ben, holding the second can of whoop-ass, always keep the line together by pulling up the rear. Even if I slowed down or rested, Ben would not pass (or make fun of me).



Left to Right: Hillside - Rex; Kevin, Ben, and me, mat/red layer

The total mileage to Hillside is no more than a mile - but it is complicated because the last part is off-trail and nasty: marshes and then a climb up a steep rotting slope that has lots of loose earth and timber. As with last year, I assigned one specific task to each person. Always watching, I gave a little coaching that first day but I wasn't nearly as hung up as I was the year before. Of course, this decision was made with care and logic - and based on a savvy team. In watching this group approach springs at Octopus, I had a clear sense that everyone was astutely reading the terrain in terms of the locations of vents and unstable ground. I also had watched them all learn to estimate temperatures based on colors while hiking through both the Upper Basin and Octopus vicinity. I trusted everyone's common and science sense immediately. Up until that point, I had only shown the guys a few pictures of the mats I studied - pointing out that we were looking for a deep red layer. The pictures of the meager, wafer-thin mats from last year were poor, though. That afternoon, when I went to cut a core from Hillside, I yanked out such an amazing and thick red-hued mat that I about cried. Even as an undergraduate 11 years before, I hadn't EVER seen a red layer that thick. There was NO question after that first core what we were looking for - everyone knew it; everyone saw it. Rex put it very well - "Sarah - you are like a kid in a candy store with this stuff." Indeed. This was the beginning of the mother lode. And, indeed, it only got better and better. I think the only downer that day was that Ben and I were reliving the glory days of last year's impressive wildlife on this hike: moose, coyotes, bison... Today - nothing. We hiked out quickly and took some time to stand in the Firehole River and "cool off the dogs" (a Rexism I picked up - after figuring out that dogs are actually feet - you can imagine what I thought they were given my off-lewd companions). We then headed back to the Old Faithful area where my goals were ICE CREAM and Grand (a HUGE geyser I had yet to see). Here, the group dispersed. While eating my strawberry shortcake ice cream bar on the Hamilton Store porch, I was overcome with a precise sensation: Grand was about to go off. I plowed over a few tourists on my way to said geyser (a third of a mile away). As I was breathlessly running, Grand started going off (200 feet away). While I missed its preliminary phase, what I saw was AMAZING: 11 minutes of eruptions, high bursts, and amazing sound. Only Matt, Ben, and Kevin eventually joined me. Satisfied, we headed back and decided it was time to start dinner. We left a note on Brian's car - explaining who was in my car now (because folks shifted) - and headed back. We set up dinner outside, eating jambalaya as the sun went down. Although I cooked (hopelessly into food preparation), I always selected different helpers who chopped and washed dishes. After dinner, we reviewed the itinerary for the next day - perfectly laying out plans as though they might actually work (ha ha): hike Seven-Mile Hole, visit other canyon overlooks, drive to Mammoth, tailgate dinner along the Boiling River, twilight swim/soak. I went to bed first as usual - out like a light.



Left to Right: Seven Mile Hole - view during hike, near the bottom, final drainway before last drop to Yellowstone River

Day Two - The Seven Mile Hole (On Many Levels)

As suggested, things did not go as smoothly as those well-laid plans. Following breakfast, I drove Chris, Kevin, and Ben; Brian drove Rex and Matt. We made good time to Canyon Village - despite slow traffic, bad roads, and the juvenile level of humor in my car. Thanks to Chris - who blames my cooking - I will never be able to NOT laugh when driving over warning road bumps (inside farting joke). Meanwhile, Brian and company were discussing science, philosophy, and religion. Once at Canyon Village, I proceeded to the ranger desk to discuss our permits/itinerary. Much to my chagrin, I was told there had been

aggressive grizzlies along THIS trail - including 3 people charged only a few days ago. Well - this was stunning news. A week before our trip, there had been a mauling in Glacier and so I called Yellowstone to inquire about grizzly incidents; I was told there had been none all year. Needless to say, I grew ill with fear and anxiety. My news was met with mixed responses from the guys. Most wanted to see a grizzly - but at a safe distance. In the end, though, there was this nervous gung-ho rallying to get on the trail. As we left the parking lot, I told Brian to be patient with my ability to find the trailhead (predicting I'd screw it up because I'd only driven by it once before). Famous last words (for a good long while). Leaving Canyon Village, we took a left onto the one-way north rim spur road, skipping Inspiration Point and Brink overlook turn-offs en route. I was aware that the trailhead was along a side-road near a big rock but I expected a signed turn-off (and there was none). We turned back onto the main two-lane and went back towards the Village (slowed briefly by our first bison sighting). I then remembered where the trailhead was: it was OFF the Inspiration Point overlook road. And so I headed back on the one-way and found the trail no problem. I thought Brian was right behind me but he wasn't. We waited and waited - and then we started grumbling. During the next hour, we made the rounds (back to the Village and to all south rim overlooks). We debated about whether to leave a note on the car and head down by ourselves but, to my relief, everyone agreed that was not safe. We decided to leave paper plate signs at the trailhead ("REX in 4-inch letters attached to a small print note: "Gone to Brink, Artist Point - will be back here at 1 p.m. Be here!"). We first stopped at the Brink, the point where the Yellowstone River plummets over this narrow slot of yellow, forming the GIANT Lower Falls. The quarter mile hike DOWN was fine, but then I developed vertigo because I was stressed and hungry. We began hiking up - only to have Rex come barreling down the trail looking for us. Their story: they stopped to look at the bison, assuming they would catch up with us. When they got back to Canyon Village, they did not assume we had gone back on the one-way. So they headed towards Mt. Washburn. They actually drove OVER Dunraven Pass and finally realized there was a problem when they arrived at Tower (that's a damn LONG way). Ironically, they did stop at the trailhead and missed our signs - which confounded us completely. We headed back to the trailhead and ate lunch, poking fun at them given the obvious signs. As I had recalled, the trail began next to car-sized Glacier Rock. Two backpackers took off shortly before us (we figured that if the bears were aggressive, they'd go after them first). I can't say my fears were ever completely assuaged but hiking with loud guys did help my psyche a lot. Rex's penchant for - when he wasn't talking loudly - hollering "UNNECESSARY NOISE" will long live in my mind whenever I contemplate hiking in grizzly territory. The trail was mostly flat for the first 2 miles - and in surprisingly lush green forest, the forest floor covered with plants that reminded us of miniature huckleberry (we found out later they were called grouse-berries). Occasionally, we passed some extreme drop-offs - where the trail passed the edge of the canyon - and these bothered me greatly. Of course, my vision of a "canyon hike" entailed a constantly open cliff-hanging face - and this was not that. In addition to scratches on trees, we found one fresh pile of bear shit - although we could not agree about whether it was grizzly or black (moderate discussion about girth and coloration was entertained as we studied the scat). The trail also passed several HUGE meadows and we knew, as we walked alongside these open spaces, that the question was not whether grizzlies were watching us... but how many?

At the 2-mile mark, there was a branch in the trail: right to the canyon bottom, left to Washburn Springs. I should have anticipated bear problems because my mentor, Bev, had to take an armed ranger to sample Washburn the year before given grizzly aggression there. Anyway - we proceeded right, dropping 1500 feet in 3 miles. The first section was still flat. Then the trail narrowed and careened down this rough, partly open, steep section. Of course, I freaked because of heights. Part of it was wearing Teva's - which didn't work well on this trail because the surface was hard geyserite spackled with ball-bearing-like pieces of broken sinter. Rex patiently found me a walking stick that helped immensely. Afterward, the trail entered a gently sloping forest, meandering through this wide, sylvan gully. I could totally understand why there might be wildlife here. In the middle of one glen stood an eerie tower of sinter that seemed to be mostly inactive. After some more down - accompanied by immense claps of thunder (which did not help my psyche but enthralled everyone else to no end) and a few moments of spitting rain (which we all hoped would fall in buckets because we were drowning in sweat) - we entered the thermal basin proper. It was surreal and awe-inspiring. We openly and intelligently discussed how amazing it was to be here - to enjoy this view and this place all to ourselves, the giant clouds moving rapidly above, the colors of the sun alighting the bony geyserite between moments of spitting rain. We rested on a rounded knoll that provided HUGE views back up the gully, to the yellow stone rim, and up the canyon riverbed: red and orange moraine-like rock-piles sloped hundreds of feet from the canyon walls to the river... the vertical walls of red and yellow and green across from us... the alabaster basin beneath us, smoky tendrils spewing off several fault lines, and milky pools that smelled of sulfide. The way continued to descend on a steep and crummy trail to another narrow gully where the combined thermal run-off collected before careening down a super steep slope to the river. This spot was 100 feet above the river, mostly in view below. We measured the temperature and pH of the major basin features and concluded that everything here was high acid and cool. Thus, despite an overwhelmingly awesome hike, we would have no collecting to do (no reason to come back in future years). Chris, Kevin, Rex, and Matt scouted the vanishing trail. Although they said I probably handle it, I was not budging. I asked that the 3 of them go down and survey below and then come back. The report was that the springs below were still all high acid but super hot (still nothing for us, though). What was WAY COOL: being right there by the HUGE river. I felt ZERO regret about not sliding my ass down that gravel chute, though. The climb back was WAY better than I was expecting - although I received several jabs about my need to rest and drink every 15 minutes. Trudging up, I had many flashes of my (lack of) hiking pace in my early/mid-20s: rushing up stuff until I collapsed, frequently pulling things. One of the places we stopped for a major rest was near the aforementioned eerie tower. Amazingly, there in the forest behind the feature was a mother moose and her offspring - just sitting in the sun. We would watch them for 15 minutes, from 100 feet away. Mostly, they were motionless - only their ears flicking putative bugs in the wind. Mom eventually stood up and walked to a seep for a drink. You could hear all our hearts beating during the entire experience. While the climb went well, the flat upper section took too long and had too many small uphill segments. At around 4 p.m., we met these couple near the junction to Washburn. They asked how far it was down and we answered (with concern). We arrived at our cars around 5 p.m. and were all hydrating when this crazy breathless woman (from the party we'd met) steps off the trail going on about how they - she and her TWO male friends - ran into a grizzly cub near the moose. She explained that her friends wanted close-up pictures. But she decided that was dangerous and ran all the way back by herself. I, for one, didn't believe her. Crazy lady then convinced Brian to drive her to her car at the Inspiration parking lot (a minute away, if that). Wrinkling my nose, I reminded her to report everything to the ranger. Somehow, I doubt she followed through.

The consensus was that we were content to skip all the tourist overlooks and head straight to the Boiling River via Dunraven Pass. Although Dunraven was spectacular, the road was crap. GIGANTIC potholes. My car flew over them but Brian's Civic was eaten by at least one (bent rim on the front left). Given bad car-ma, I guess it should have been expected. We did make a brief stop at Tower to investigate the damage and purchase ketchup (because Kevin, upon hearing that I was going to serve cheese brats with no ketchup, had a conniption). Brian's tire appeared to be stable and we continued on. The remaining drive was a slow and winding 39 miles. We arrived at the Boiling River parking lot around 7:45 and fired up the grill. Kevin was in charge of the dogs, I was in charge of salad, and Brian was in charge of opening all the cans of beans and jars of 'kraut. After gorging on bad food, we took off for the springs, camera-less (the prospect of having someone snap my picture in a two-piece was daunting - although me as such with 6 guys was equally incriminating... if not flattering). I carried my headlamp and wrapped up in my sarong, anticipating we'd soak past sunset and it could get cold and dark (it grew dark but remained completely warm). The wide trail smelled of sage, the dominant plants in the region. Many soakers were leaving (some of whom who looked far better in a bikini than me and, sufficed to say, caught way too many eyes of my party). We clambered over the rocks of the main pool. Heading into the current, we hit variable, boiling strands of thermal run-off that scalded our skin. All the while, the swollen river rose in waves, knocking us to our knees. Needless to say, there was a lot of cursing and laughing: "BOOMER - you call this a spring? What the hell have you gotten us into?" But seriously, I had some mild concerns about safety here. The guys decided to free-float 50 feet down to a second, smaller set of springs that had a large party of chatty people reclining variously. The prospect of letting myself drift that far in the swift current, though, freaked me out. I backtracked to this gentle pool upstream. It was heavenly, although I confess I missed my boyz. I think it was actually good that I enjoyed the rise of the nearly full moon above the brushy hills to the east - the concomitant flaming colors of the setting sun diminishing on the undersides of the clouds to the west - in the absence of guys who had, no doubt, stumbled onto womenfolk. I rolled my eyes: hope they haven't found any nudists; that'll look good if it gets out at work - me taking a bunch of guys to a clothing-optional hot spring. Talk about hot water. As I say with my mother: there are some things you don't want to know. I think there was a similar and reciprocal sentiment all around, actually. I remember the sky blackening substantially - save the flaming pink-yellow moon - as I peacefully pondered how wonderful things were going, even with all the moments of unplanned foible. After the trip, a friend of mine remarked: "Sarah - that is so powerful... how does that feel? To give people memories like that - things you know they will remember Always. " When she said that, I realized that I was probably thinking something along those lines at the time - although mostly in terms of my own memories - as I lay there in the hot spring pondering life, the universe, and everything between. I admit: it is a feeling that cannot be communicated with words; you only approach it when you find yourself staring at the moon, the peaceful sound of water and wind in your ears, your body completely relaxed with the alkaline heat of the earth. In stark contrast, the next thing I remember was the curly-haired profile of Matt. I called up only to have this blinding headlamp in my face. A ranger (behind him) was clearing out the springs because it was 9 (closing time). Displeased, we trudged back, me repeatedly losing my sarong. Not surprisingly, the drive back to West Yellowstone was not without another car incident. We were climbing the winding road above Mammoth and noticed, yet again, Brian had vanished. Fearing the worst, we headed back down only to find his party making a pit stop (something about Captain Morgans for my birthday). I said I would be heading back to West Yellowstone and was done keeping track of them for the night. And so we took off into the black of night, arriving at 11 p.m. I do not advocate driving the park at night - both because of the potential for hitting wildlife and because, strangely, that is the time when truck traffic is heaviest. During the drive, we (Chris, Ben, and I) made a few executive decisions about the next day given that today had been long and we were exhausted: no packing tonight. Second, we didn't have a lot of hiking mileage so getting a noon start seemed reasonable. The plan: rise around 8 a.m. and pack. After packing, we needed to take Matt out for a big breakfast and hit the road by ten. At some point during our pre-bed pow-wow, we also noted how silky our skin felt - not to mention (with wrinkled noses) how inundated with sulfur we felt... as though we were sweating it. Of course, that might have been the 'brats and 'kraut AND the springs synergizing. And so I hit the sheets, relaxed, exhausted, and peaceful.



Left to Right: team at Heart Lake trailhead, first view of Heart Lake Basin, moon over Heart Lake

Day Three - Into Heart Lake

Morning preparation for the Heart Lake backpack went smoothly. I gave the guys nearly all the food, being that they were kicking my ass and needed more weight (I carried only some cookies and sour worms). I have to commend the crew for absolutely adhering to the extensive equipment list - stunning given that half the 1998 crew ignored requirements. We had a quick and filling breakfast at the pancake house and then made our way into the park. Matt was kind enough to put all our packs in the bed of his truck and drive us to the trailhead so he could properly see us off. The drive went quickly to Old Faithful but then hit molasses over the passes beyond. The blazing hot trailhead was clogged with vehicles, including many trucks with horse trailers. Apparently, a senator from Wyoming was in the backcountry with full stock support (I found levity in noting this association every time I had to sidestep an odorous pile of shit). We double-checked that our trailhead permits were on the dashboards, and triple-checked that our backcountry permits were on the packs before strapping on the beasts and posing for WAY-too-macho pictures. We said a goodbye to Matt and were truly sad to have to leave him. Given that Heart Lake was 8 miles/350 feet away, we assumed the hike would take 4-5 hours. Even though that was about right, it felt longer and more

arduous. Initially, the way traveled through burned forest. The topography was more bumpy than we anticipated - with moderate-sized hummocks, and a miniature canyon (10-20 feet deep) winding its way south. As we hiked, I contemplated the fact that tonight we'd be sleeping in known grizzly country - asking myself why I chose to do these things (especially with students)? The terrain flattened around mile 2, entering a series of intermittent green meadows. As with Seven Mile Hole, the trail traversed alongside the meadow - just within the trees. Eventually, we came to a geyserite basin, the halfway mark and our lunch spot. From this point, we could see Heart Lake and it APPEARED to be ALL downhill. With views over Heart Lake and up to Mt. Sheridan, we were in heaven as we passed around the feedbags. Rex, beating his bare chest from atop the biggest boulder in the basin, equated the experience to sex - to which I replied: Rex, you must be maturing because I feel that way about a lot of things the older I get. Perhaps surprisingly, no one touched that comment (indeed, they probably knew if they did, they'd get an earful). After gorging excessively, we surveyed the acrid basin that, overall, was inactive. Thus, I wondered if the next 3 days of bear-related unrest were going to be, scientifically, a bust. As we worked, this motley pair of British guys stopped to inquire about our activities. After hearing our response, one said to the other - "why can't you do a Ph.D. that involves THAT?" Shortly after continuing, we passed the Fissure Group, dominated by a roiling clear blue pool and a hill of geyserite off which multi-colored streams flowed. Although both offered strong alkaline signs that we would find our red stuff, this area was on the survey itinerary for the way out (i.e. we didn't stop). The trail switch-backed down through a burn and then along a lobe of meadow. Before us was this huge expanse of emerald grass dotted with stands of living trees. We figured we would cut a B-line right down this thing to the lake. But NO - we stayed high along the woodsy perimeter - rising and falling. Occasionally, we would cross a small spot of meadow and it was clear why the trail didn't cut down the middle: marshy Witch Creek and a whole mess of thermal activity (also to be surveyed on the way out).



Left to Right: upper mostly-inactive thermal basin/lunch spot, cooling the dogs in Heart Lake, Marty - Chris' camp weasel

After some cursing (mostly mine), we arrived at the then-vacant lakeside patrol cabin (the senator would be staying there for the night). Everyone but always-last Ben was waiting on the porch, drooling over the notion of cooling off the dogs in the lake. And so we pressed on, knowing camp was 1 mile away. After traversing a pebbled and sandy shore, we cut inland and passed the Rustic Geyser Group (to be surveyed the next day) and saw the first of the campsite signs (ours was the second). I, for one, was disappointed when we began heading into forest again. I held expectations of a sunny beach site. With the 5 p.m. sun behind us, we knew that sunny swimming would be short-lived. However, just taking off the packs would be acceptable at this point. A shared pit toilet was located along the branch-trail to our campsite (our neighbor's tents visible, in fact, from the open privy). When I first saw how far the toilet was from camp (about 1500 feet), my mental response was: "oh shit, I don't want to walk that alone in the middle of the night." I was not sure how to approach this problem, fearing they would think I was a sissy for suggesting a buddy system. Fortunately, Rex proposed this idea after dinner. The first camp area reached after the toilet turnoff was the bear wire (although 12-foot log is more like it, placed 15 feet up between 2 sturdy pines - all standard in grizzly country). There were some logs beneath the hanging area - and I designated this area as the "food/smelly only area." Everyone thus emptied their packs of food, toothpaste, etc. The next order of business was to choose where the tents would go. Given that it is recommended you camp 1000 feet from food, we chose a clearing about that far off, surrounded by trees. At first glance, it seemed REALLY small - especially for 3 tents (unless they were REALLY crammed in there - which they were). Although I had hoped we would camp close, I was, like "geeze, that's close for MY standards" when I saw the layout. Much as I was not looking forward to all the snoring and other manly noises in the night (none of which were left to the imagination), I knew I would feel oh-so safe my crew RIGHT there. And I mean RIGHT there. We took to setting up tents and unloading sleeping equipment and clothes. Brian and I shared my new Meteorlite; Chris and Ben shared my old Meteorlite; Kevin and Rex took Rex's Eureka. With said tents, we built a little triangle. We joked about which 2 tents would get the "whoop ass" and I figured I'd at least get one. Somehow, though, both cans wound up in the other tents. I can only assume that bear fears may have been more serious. I was, frankly, surprised that that didn't bother me... but I figured that everyone was right there and would act accordingly if there were problems. We then headed to the beach - 50 feet from the bear wire. It was agreed that all cooking, eating, and dishwashing would take place on the rocky shore. I said I would get dinner going so everyone else could jump in the lake. I sorted all the food, hung everything we weren't using that night, and prepared tabouli salad with fresh tomatoes and feta cheese, and pitas with hummus. My desire to swim diminished appreciably when Brian gleefully announced that he just found a leech on himself. The water was also cold and getting in seemed to take the guys a long time once they reached "genital level" (as described by Chris). In the end, everyone but me got into the lake. I couldn't stomach the notion of finding leeches god knows where and so I just encouraged the consumption of appetizers: Gouda wedges and sour worms. After our successful near-sunset dinner, the guys washed all the dishes and pumped water for the next day. At some point in there, we discovered a tiny weasel who initially approached me while I was cooking. It seemed to prefer Chris, however - running over his feet and presenting him a freshly killed mouse. Chris named it Marty but I named it Ricky Martin - which, of course, led Rex to sing that damn La Vida Loca. In the distance, the sun set behind us, casting reds and pinks across the sparing clouds, and the moon began to rise. We discussed plans for the next day and agreed to be up at 7:30 so we could avoid climbing Sheridan in extreme heat (assuming, that is, the weather held). Being that Sheridan is over 10,400 feet and prone to lightening/thunder, we felt getting down in a timely manner was also a wise reason to get up early. As

the night fully fell, we weeded out by age/experience. Brian and I - the old, stiff farts - went to bed first. Brian and I sat up talking personally a long time (we were still getting to know one another, believe it or not). Afterward, Brian read a long time with the headlamp on. In the distance, you could faintly hear everyone else talking and laughing on the shore. I slept an hour before I heard the guys roll into camp, the majority of manly noises sounding only as everyone settled into sleep. And then I drifted right back into mini-naps all night long. Brian had warned me that he was an incessant turner (his precise analogy, to continue the theme: grilling hot dogs - constantly turning over and over). Remarkably, though, I didn't obsess about bumps in the night or have to get out of the tent to deal with pee issues. Also, Brian didn't snore and, if I did, he was too polite to say anything. I do recall that Chris mumbled a fair bit next door. Aside from little noises, though, it really was a comfortable night.



Left to Right: Mt. Sheridan - starting out, final ridge-walk to tower, summit overlooking Heart Lake

Day Four - Mt. Sheridan and Sarah Turns 32

Alright. I don't remember my last memorable birthday (well, now that I think about it: closing the loan on my house... but that was memorable in a stressful way). Anyway - 32 will go down as a GREAT one and I got many wishes: I got to spend the day hiking, I got to climb to 10,400+ feet, I got to spend it with a great crew, and I got Kevin to sing to me somewhere up top. But the best thing: I got them to carry all my stuff. The thing I didn't get was to sleep in... not even a little. Even plans to sleep until 7:30 were thwarted by annoying squirrels who screeched these deafening chatters as they zoomed up and down adjacent trees. In between all the zooming, we heard chewing and shuffling... and then the pinecones bombed the tent (I'm not making this up). This was an act of aggression - albeit understood given that we were in their domain. Nonetheless, it was comical - to the point that I was unable to contain my bursting out with laughter... and then others started laughing. Pretty soon we were eating breakfast and heading out (about 8:30 a.m.). Fortunately, the air was still cool. I shouldn't say I carried nothing, though: I had my water bottle and camera. We took off from camp, headed left 5 minutes - and then took the Mt. Sheridan side-trail right and up. The guidebook was AGAIN mistaken, claiming that the side-trail was 3 miles up (the sign said 3.9). In contrast with the up and down trail we hiked yesterday, this trail was perfectly logical in its construction: no meandering and it wasn't too steep, despite ascending 3000 feet. First, the way climbed through meadows dotted with stands of live firs. People clustered together and I had the impression that folks were on their guard as we emerged from shadows into open space. Then the way zigzagged LONG, gentle switchbacks across an open burn. A pre-fire guidebook said that grizzlies used to be common along this trail. Mt. Sheridan is shown to the left - taken after the climb. As we climbed, the views onto Heart Lake were breathtaking. We would eventually switchback into a forested gully to the side of Sheridan. After climbing, we entered subalpine forest, ascending a hogback via a series of short switchbacks. To the north, ALL of Lake Yellowstone and the Absaroka Range were visible. Surveying the terrain before us, we figured we would make a B-line for the summit via this long ridge - but that's not quite what the trail did. Instead, we entered this high basin filled with flowers, snow patches, and other ridgelines branching off in many directions. Hungry, I was feeling head-ache-y and a little nauseous. The trail climbed to a saddle and then popped over to the south side of the final summit ridge, where it mostly stayed. Only once did I feel vertigo during this 10-minute contouring climb - the hazy view of the Tetons distracting my fear. As learned later, Patagonia Sara was on the summit of Grand Teton THAT day. While there, she met Alex Lowe (6 months before he died in an avalanche during a ski traverse of the Himalayas). I found it so karmic that we were both sort of looking at each other on the same glorious day (not exactly realizing it at the time, of course). A manned fire watchtower occupies Sheridan's summit. The volunteer tower man greeted us with a spiel about the area, took our pictures, recommended a good place for lunch and a nap, and (as we were leaving) gave us a tour of the facilities. The summit view was, indeed, superlative. We walked about 2 minutes down the broad open ridge top to a sloping open area where there was a picnic table and some shade trees. We then proceeded to pile gear beneath us on the ground and lie down for a nap - after which we passed around the food bags and chatting lethargically. Somewhere in there, Kevin sang. The fire watchtower was the most modern and well-kept one I've seen: a new kitchen area, refurbished hardwood floors, immaculate everything. As we headed down, the guys teased me about how the watchman clearly wanted me to stay as his towerbabe - particularly given my obvious fondness for his hardwood. I predicted that we would make it down in 60-90 minutes (not the consensus of the crew). But I was pretty accurate. Halfway down, the leaders (Rex, Chris, Kevin, and Brian), stumbled onto a black bear 50 feet off the trail - and so there was much excitement. I was trailing 2 minutes behind and missed it, of course.

Originally, I figured I'd give everyone an early swimming break - after which we'd survey the Rustic and Lower Groups. Rustic, featuring giant Columbia Pool, was closest to camp. Lower was a mile from camp near the cabin. In the end, though, no one wanted to play first and then go back to work - and so we cut off-trail before the junction and headed to Columbia. The run-off of Columbia is probably one of the most impressive thermal gradients I've ever seen in Yellowstone. Behind Columbia is irregularly prolific Rustic Geyser; although it appeared innocuous during its 5-10 minute rest period, it would go crazy - shooting 20-foot bursts high and wide. Despite interesting features, we failed to find any red under-layers - and so we left Rustic empty-handed. As we headed to the Lower Group, I began to feel queasy and overheated. With little encouragement, I called it a day and we went back to camp. Everyone set me up on the beach with pumped water and Gatorade. And then they

all ran into the lake (I will NEVER forgive Kevin for flashing by in just his tighty-whities). When I felt better (after my good laugh at Kevin), I retrieved cookies and snacks. I watched an ENTIRE large tray of Nutter Butters vanish in 10 minutes. However, our pre-packaged noodle dinner was less satisfying. We dined early - with plenty of remaining daylight. Afterwards, people still wanted to go exploring. Two subgroups set out independently - although we both walked parallel social trails along the shore. Brian, Chris, and I visited our camp neighbors (Department of Fish and Wildlife, seen canoeing earlier). We conversed about the limited diversity of fish in the lake, the grouseberries, and the weasel. Beyond their camp, the trail deteriorated into marsh and we took a wrong turn (I have been told this was my fault). Wearing sandals, I decided to cut directly across the marsh, hoping to join the real trail (which I estimated was just above the shore area). Well - I was followed and received plenty of criticism as we slogged (a few times ankle deep in black muck). We tried to walk the lengths of the downed timber, fighting prickly appendages as we swung around them imbalanced, and leapt a few bona fide seeps (some unsuccessfully). I did feel bad for Brian who took one bad fall - literally face down - onto a downed tree trunk.



Left to Right: Rustic Group - from Sheridan summit, Rex and Columbia pool source, thermal run-off

After dinner, we enjoyed hot cocoa and passed around the bottle of Captain Morgans. As with the previous night, Brian and I retired before everyone else and talked late. In contrast, though, I was restless most of the night. At 1 a.m., large cracking wood sounds seemed to be getting closer. I recall thinking: alright - sounds like an elk or maybe a moose - it's too precise to be a bear. I know I woke Brian because I have a specific time association with these sounds (i.e. he checked his watch). The next thing I remember was this killdeer screeching on the shore near us - this would keep up for the next hour, sounding farther and farther away as whatever disturbance (now along or near the shore) was walking along. Brian and I discussed the situation quietly (but still woke the others up - or so they told us the next day). Brian said he distinctly heard the thing get into the lake, confirming that whatever it was - it was VERY BIG. I kept trying to calm down by rationalizing that a bear would not walk in the water that long (and this seemed to be roaming in the water). A moose, though, would certainly troll the bottom plants. I remember asking Brian if we should do anything and he was, like - well, I wouldn't know what to do. Brian would comment after the trip that he recalled me muttering many times these little "oh dear's" during and after this whole scenario. I moved MUCH closer to Brian about then (being that I did not want to be anywhere near the door - which was facing out into the woods). And then I fell asleep - sort of - until morning.



Left to Right: Sheridan and red layer pool, Fissure Group big blue pool and crazy sinter mound, Chris keeping the wildlife wild

Day Five - Leaving Heart Lake

The only payback for the restless night: the cone-hurling squirrels left us alone come daylight. Nevertheless, I must have been squirrely from lack of sleep because I was possessed to nail Chris' side of the tent with pinecones. Unfortunately, I snickered every time I threw something and so this charade didn't last... and then the pinecones started coming my way, as did various utterances of un-amusement. I did nail Chris in the face through the open tent fly, sealing the battle. I felt the need to tease Chris because I detected correctly that we were both first-borns and, hence, had strong, competitive personalities (of course, he was also in convenient firing range). Subsequently, we all got up, ate breakfast, pumped water, and packed. Today's sky bore high incoming clouds, suggesting a major system was moving in. We considered ourselves lucky to have reached the summit of Sheridan when we did. Our plan was to survey the Lower, Middle, and Fissure group features on the hike out. Despite overcast skies, the heat was rising and the humidity was exceptional. Given all the morning survey work, I knew we would be making that awful climb around solar noon. We hiked back along the beach and by the ranger cabin - where the Fish and Wildlife group were waiting for a helicopter to pick up all their gear (amassed in giant nets). The Lower group was about 15 minutes away and, once there, we dropped our packs to survey what turned out to be an EXCELLENT area for our red layer work. As we sampled, we watched the aforementioned helicopter come and go - an interesting sight in the backcountry.

The first spring in the lower group was a deep blue scallop-edged pool that had beautiful and substantial red layer mats. Beyond, the pools grew boggy, the ground mushy. But we carefully made our way to still-hot Witch Creek proper, the boundary of the thermal area. After returning to the trail, we packed up and headed onward. We skipped a few random pools in the Middle region that were swamps with no easy access. When we came near Fissure - its distant, amazing pool of bubbling blue and fascinating sinter dome - we dropped everything again, enjoying lunch before tackling the features. Indeed, just getting to Fissure was interesting: we cut across a field of high, gold grass that became marshy - then nearly stumbled into the big blue pool. So-called "Big Blue Pool" was AMAZING - extremely hot and visibly roiling with bubbles. What had not been apparent from the trail was the little valley and scalding creek between Big Blue Pool and the sinter dome. Big Blue Pool run-off cascaded down a steep slope, commingling in steamy waters that were being fed by the massive sinter dome across the valley. Getting down to the creek required backtracking and side-hilling. Eventually, I took off down the hill, my eyes entirely focused on the big steaming dome. I leapt the hot creek with no concerns, made sure everyone else did the same, and then headed up this knoll that looked onto the hissing dome. An awesome pool bubbled at the base of the giant sinter dome. Above, the water poured in multiple rivulets that exceeded 70°C. The grade of the slope was so steep that there wasn't even a cooling zone for the red stuff to form before hitting the creek (over 60°C). We all sat by the beautiful lower pool and stared in awe. For some reason, my hot-water tendencies got the best of me and I started exploring. The mound seemed stable so I ascended it - receiving disapproving looks from most of the boyz. The "top" was broad and where the sinter met the meadow was this gaping crevice fault line - out of which poured hot water. Seeing this, I grew nervous and started thinking I should back off. Unfortunately, it was then that I realized everyone else was coming up from behind. We stayed away from the big crack and walked carefully around several hissing vents. Surveying the pristine features, we imagined this was how the first people who ever saw these features must have felt. We agreed to enjoy a long moment of silence (I'm not sure our group was actually capable of true silence... but we came close - and certainly were reverent enough). After dropping carefully down to solid ground, we headed back to the trail. In the middle of the last field, I accidentally stepped on a garter snake and, like a girl, totally screamed. First, Brian came leaping through the grass and pounced cat-like on the snake, trapping it. He then picked it totally up and I am, like, EEEUW. Although it seemed docile, I was NOT going to hold the snake (and I grew less interested after it excreted on Brian). Nevertheless, the poor serpent was passed around to all but me - excrement and all.

Although my pace seemed reasonable, the switchbacks took a LONG time. After regrouping where we lunched on the way in, we hydrated and I took the lead for about a mile (at which point I dropped back with Brian and Ben). Eventually, we ran out of water - indeed, there was no water, including AT the parking lot. We passed four parties but I felt bad for them because most wanted to climb Sheridan tomorrow. At the parking lot, we packed up quickly and headed to Grant Village for ICE CREAM and drinks. There, we amused and/or offended several clean people by our filth (physical and verbal). I recall saying, "don't mind us - we've been in the woods," to at least one drop-jawed passer-by. I also made them walk around West Thumb but, after experiencing truly wild hot springs, boardwalks - even with stunning lake views - did nothing for us. I think my only true accomplishment was diverting the boyz' attention from a Jehovah's Witness booth in the West Thumb parking lot (I feared this encounter as much as I feared walking into a grizzly bear in the middle of nowhere). We headed back to the hotel - HUGE ominous clouds on the horizon, the feel of rain in the air. We arrived in West Yellowstone at 6 p.m. and I gave everyone an hour to shower before BIG FOOD at Three Bears - a restaurant that, 10 years before, had the best prime rib (but had, in recent years, fallen from grace). Well, Three Bears earned their award back. Half the crew ordered - and finished - the largest 16 oz. Prime rib that no-doubt had some manly name but I've forgotten it - what with all the other manly things I had to ponder. Talk about HUGE food that night. Yikes. And, of course, manly tales were regaled. Small, innocent-looking Brian received the award for the best (which I think he had been holding back for that right moment). Being that it's mostly clean, I'll tell it - hopefully with not too many inaccuracies. Brian, you see, has history in a fraternity (I will forgive him for that; he's not the first man I've had to forgive for that indiscretion). During some party, he was asked to play Atlantis, the mascot. This involved being painted blue and put in a grass skirt. Brian, however, NEEDED to go beyond the call of duty so he taught himself to blow fire (i.e. take a mouthful of Everclear and light the projected spray). After successfully blowing fire from the roof, he lowered himself to the ground with a rope. But then some pretty girls showed up late and wanted to see the fire part again. And here's where Brian - no doubt - drooled the Everclear and blundered the lighting. As he put it - he saw his navel fill with alcohol, then his chest hairs go up in flame, then the grass skirt... and so on. Sufficed to say, he had to show us the minor scars on his chest - most of the hair (manly hair at that) having grown back. I thought the guys were going to do the Wayne/Garth "I'm-not-worthy" routine. Indeed, this was the moment when Brian was accepted into team guy-dome. Up until then, he and I both came off as older and serious. As for me - I'm not sure I ever received the laurels of guy-dome - although even I was feeling testosterone in my veins. We went shopping after dinner, hitting the western store with its wildly expensive hats, knives, and leather-ware. I fell in love with this stylish cowboy hat with a feather band. Rex looked amazingly good in a Russian fur hat, Kevin in a straw cowboy thing bent every which way. I then made my own way to the hippie rock shop, purchasing rocks and cool threads (but resisting the patchouli). I had a long talk with Harley dude owner - a 50-something longhair who has been running this place 15 years. Even though I'd visited him on every prior trip (for 11 years), we'd never really talked until that evening. And then I went back to the hotel, having forfeited showering before because I was unpacking and securing dinner plans (lord knows, there was no hot water left after the guys). Thus, I WAS looking forward to some quiet downtime by myself. But the guys were 5 minutes behind me. Fortunately, everyone was finally wasted and sleeping by 11 p.m. We did agree, before retiring, that there would be no wake-up call the next day unless it was, like, past 10:30 a.m. Outside, it started to rain... and it would pour buckets most of the night. I hadn't heard rain like that in years and so I found myself restlessly awestruck.

Day Six - The Day of Rest

Much to my surprise, I leapt out of bed at 8 a.m. STARVING and WIDE AWAKE. It was still pouring rain when I drove to the tiny grocery, images of French toast, berries (the store actually had blueberries and raspberries), and bacon dancing in my head. I manned the stove an hour, cooking everyone's breakfast. Only Kevin and Chris never showed - so Ben and I loaded trays and brought them breakfast in bed at 10:15. Within the hour, we were heading into the park. The skies looked like they might clear and, by the time we arrived at Norris, things were sunny and warm. Shedding clothing left and right, we headed

into the geyser basin, hopeful that we would see Echinus. En route, Steamboat Geyser, one of the tallest in the world (albeit unpredictable), was active, causing much (but ultimately unnecessary) excitement. The crowd around Echinus was huge we took our places in the bleachers, waiting and eating lunch. But, as is ALWAYS the case with Echinus, the steam enveloped the entire seating area, preventing views of the actual fountain. We continued apathetically around the rest of Norris. Artist Paint Pots provided our first encounter with mud pots and Rex was excited because mud pots, to him, were quintessential Yellowstone. However, the boardwalks and barricades prevented good looks into the deep troughs of goo. We then headed through Hayden Valley (to Mud Volcano), hoping to find some large animals. First, a herd of 50-70 bison were grazing (many crossing the river) a mile before Mud Volcano. Brian and the folks in his car said they saw - and heard - a truck carrying a caged black bear, animal cries distinct as it passed. As we watched the herd of bison, several tourists said there was an even better herd a mile beyond Mud Volcano. Thus, we headed down and, indeed, this herd was RIGHT by the road. We had a couple bison pass at arm's length from the car, satisfying all the newbie's desires to see (and smell) in-your-face bison.



Left to Right: The team at Artist Point, Brink of the Lower Falls view, Mud Volcano

We then backtracked to Mud Volcano - the sulfide pits obvious even from the road. We headed up and around the short walk, stopping at the noisy bubbling pits of brown and gray silty water - plenty of adjectives regarding the foul stench. Brian was particularly interested in Mud Volcano because of its proximity to Obsidian Pool, a scientifically famous pool that has been the subject of several papers about extreme microbial diversity. I had been told that Obsidian was 1-2 miles behind Mud Volcano and so I wondered if we could find a ranger, ask for special permission to visit it - and get some real directions. Although we found a ranger who seemed interested in letting us go, he had no clue where the thing was. And so we decided to just complete the Mud Volcano walk. I'm sure, at some level, everyone appreciated having a good rest day. Being the one with the most intense personality, though, I just felt restless - not only in terms of the day but also in terms of the synergy and spirit of the group. Afterwards, we returned to the canyon for some classic overlooks we skipped during the previous canyon debacle. It was 5 p.m., the sun low and the falls draped in interesting shadows. Despite my cynicism, the canyon was beautifully peaceful - an appropriate end for the day. After a long drive back, we greatly enjoyed Kody's famous veggie lasagna (portabella mushrooms, garlic, onion, roasted peppers, spinach, ricotta, mozzarella, Parmesan, eggs, pesto spaghetti sauce, and noodles). Consistent with the disappearing Nutter Butters, the ENTIRE PAN (9"X13"X 3") was consumed in ONE hour. Pretty amazing considering there was no meat and nobody seemed to notice. Stuffed, we decided to visit the local IMAX theatre (features included Yellowstone, Wolves, and Alaska). And then we headed out shopping again. If you have been to Montana or Wyoming, you will recognize a postcard series called Duckboy that feature surprisingly well-crafted redneck jokes (my favorite: a fisherman in a raft arguing with another fisherman in his gaiters - "The Great Western Debate: Row vs. Wade"). Anyway, I bought Ellen an entire book of these things for her birthday. At some point, the guys presented me with the hat I'd been coveting and said happy birthday. I about cried. And, therein, probably lost any hope of achieving gey laurels.



Left to Right: Rex, Brian, and I sample Spray; meadow free-form to Fairy; my favorite field shot ever - Firehole River

Day Seven - The Grand Fairy Traverse

My first taste of Yellowstone (in 1988) was a variation of this hike. Our 1999 version is the essence of Yellowstone to me. It doesn't have the icy grandeur of Rainier or Patagonia, the supreme meadows of the North Cascades, the spiritual presence of Nepal... but it has something that I cannot exactly name: history, intensity, geological and evolutionary time - measured in billions of years. On past trips, I had driven to the Fairy trailhead and done an in/out hike to Fairy Falls and Imperial/Spray Geysers. Last year, we went beyond Spray to what we thought was Fairy Geyser (this assertion was challenged by Bev because she insisted that was too far to do in a day). Likewise, we had used the Ojo Caliente trailhead to access Sentinel Meadow, leaving this route to slog through the meadows to Fairy, at the base of the Twin Buttes. This year, I was determined to pioneer a 10-12 mile traverse between these trailheads - putting to rest all questions about Fairy Geyser. I had also never seen Sentinel Meadows and figured we could throw that side-trip in as well. And so we put Brian's car at Ojo Caliente and

crammed all 6 of us into mine for the short drive to the Fairy Falls trailhead. The weather was cooler but sunny with broken clouds. Hiking 2-3 miles to the falls, I was heavily involved in this intense discussion with Brian about applied versus basic research, biotechnology, genome projects, and the implications of patent law. Given the boisterous boyz, I felt my voice rising constantly because of all their laughing and talking behind us. From the falls, we walked the always-boggy trail another mile to Imperial Geyser. As was the case last year, the gorgeous pool was shooting impressive and continuous columns of water in one corner. What always intrigues me about this site, though, is that the pool is, like, pH 9 and yet 20 feet away from it are these mud pots (pH 2-4). Sufficed to say, Rex was VERY excited. At some point, some other hikers came upon us working and immediately left (usually I make an effort to explain who we are). I was seriously concerned they saw us touching things and ran back to call a ranger. I figured it was a good sign that no rangers (or helicopters) showed up with bullhorns. Indeed, I have had rangers with bullhorns order our party off a feature (mind you, this was when I was an undergraduate, not a leader). If you remember nothing else: DO NOT PARTY ON THE FEATURES. We then headed down to Spray Geyser. Last year, a giant run-off of red and green fanned out from Spray. This was ALL GONE because the thermal output had increased. New splash mats, however, had formed in rock crevices near the source. The problem: they were RIGHT by the blow-hole and the rock and fluctuating whitewater seemed unstable. At first, I laughed about needing to go over there. Most of the guys retorted seriously - surely, you are joking. But I kept watching it and found that it had a regular rhythm. There was a 5-minute rest step and I was just going to go for it. Rex and Brian agreed to back me up. Amazing red layer community, that's all I can say.

The trail ends at Spray and so we took off through the golden grass - sometimes following game trails, but mostly meandering the base of Twin Buttes. Getting too far out in the meadows was bad because, despite being August, they were soggy with the recent deluge of rain. We passed several bleached bones and thermal features over the next 1-2 miles but I refrained from sampling them I figured Fairy would offer a big pay-off. Having just NOT fallen through Spray Geyser, I also figured I ought to pay back the karma gods. We arrived at the place we called Fairy the year before. The splash mats were MASSIVE. We spent a long time taking samples at two sub-locations, one as risky as Spray (I had someone holding the belt around my shorts in case I went through or took boiling water in the face). The biggest problem: the bloody steam that kept fogging my glasses (unless, of course, I hurled them into the grass and then almost stepped on them as I staggered back holding a slimy mat). I was convinced that this WAS the Fairy I remembered from 1988. The subsequent day would confirm my assertion. Indeed, we found no major thermal features over the next 2 miles as we wandered through the breezy grasslands. I was becoming somewhat concerned, however, because I could not see any signs of a trail (and, by my map calculations and the time - we should be hitting it). Soon, though, I saw an orange tree marker in the distance and, indeed, we came to said trail. We decided to take a left (we knew the car was to the right - but we figured that Sentinel was still to the left) and hiked about 15 minutes. I knew from pictures in our guidebook that there should be a series of HUGE mounds (20 feet high and 100 feet at the base) with interesting springs up top. With no obvious signs of said features, I began to question where we were. But we pressed on, eventually rounding a bend and seeing said mounds. As we neared the mounds, most of the group was distracted by a skeleton to the side of the trail. Brian and I, though, harbored a "must climb that" focus and proceeded steadfast towards the biggest mound. Unfortunately, said feature had a substantial moat around it (a 30-foot ring of muck beyond the base). I went up to my mid-calves a few times before finally making it to the sinter center. By this point, Ben was behind me and Brian was catching up. Peering over the top, Ben (who hesitantly went up first) looked down and said he was worried that things here were undercut... but, by then, Brian and I were both up top and I could hear Chris, Kevin, and Rex cursing as they sank their way through the moat. We rationalized, guidebook in hand (pictures of the springs from the top), that someone HAD to have been up here to take those pictures. And so we limited 4 people on top at any one time. The springs were fabulous - even if they didn't have our red stuff. The mineral deposits on the edges were especially gorgeous. RETROSPECTIVE COMMENT - at the time, we thought we were standing on Queen's Laundry but, in fact, we were on Mound Spring. A year later, we would find the real Queen's Laundry, a barely-standing bath-house built by Norris in the 1800's. We climbed only one other mound (not as spectacular) and then continued on the loop to the north before re-entering the main meadow and cutting a B-line towards the Firehole River and, hence, the car.

But, indeed, there is one great encore for this lovely day: the swim in the Firehole. I knew from visiting this lesser-known swimming hole twice before where to go. Even I stripped down to my two-piece and jumped in after gorging on chips. The swimming hole proper is this wide deep pool in the river: there is a warm zone from a big thermal feature just below this colonnade of rapids across the width of the river. Brian decided that he needed to slide the whitewater so he lead all the guys along the river to a point just above the rapids. He then scooped out just above a reasonable place in the rapids, balancing carefully on some obvious rocks. Then, in front of all of us, he attempted to demonstrate how everyone should lower into this chute and go down. Well - the combination of fast water and Brian's beat-up shorts was a bad thing. Brian earned more guy-laurels - not once but 3 times. A combination of Brian's troubleshooting and the fact that everyone else had good elastic waistbands resulted in successful runs down the rapid, or so I was told. I walked away after Brian's multiple de-pants-ing incidents. He's a friend and so that stuff doesn't phase me... but, much as I had shared up to that point with the students (not to mention that I was standing in the nipply breeze in a bikini), accidents involving partial nudity and class I water are over the line. Several of the guys decided that they wanted to float the river to the bridge by the trailhead. That meant that the rest of us carried their things back. In contrast with expectations, those of us walking proceeded more quickly than the floaters (reports were unfavorable in the bruised-bum category). But you wouldn't have guessed it based on all the hooting and laughter coming from the water as we sauntered along beside the river. We headed back to the car only to discover that Brian had left his lights on all day (well, they weren't on when we got there). That was a problem only until this woman showed up to her GIANT Suburban (the thing cast an eclipsing shadow over Brian's Civic). She had jumper cables - although it would take the arrival of her husband, 10 minutes later, to get everything set up. Between the 8 of us - before dad arrived - we could not even get the hood of the Suburban open (which sounds like the start of a good joke). Once the batteries were recharged, Brian and I headed back to my car, picked up the Subaru, and then picked everyone else up. After build-your-own burritos, I did all my laundry (on all my previous trips to Yellowstone, I have never had to do laundry and I think that says a lot about the intensity of this trip). While things were washing, I put on my new fancy pants and top, and came marching through the staging area. Rex

is, like: "Whoa - dip you in some patchouli. " Yeah, yeah - I rolled my eyes - been there, done that. Since Brian and Ben would be leaving the next day, the remaining boyz agreed to be up at 7 a.m. In contrast with original Tetons plans to hike to Lake Solitude (14 miles, 2500 feet), the guys voted and I decided not veto a more macho plan: Hanging Canyon (6 miles, 3000 feet) via an unofficial climbers' path. My trade: they had to carry my pack (SO bad). I also had to arrange a few things with our departing team members: first that Ben could carry all the empty bins back home (which Matt had brought). I also wanted to spend some time talking with Brian about the trip and make sure he knew I appreciated his being there. He said he thoroughly enjoyed the trip and thought I had totally lucked out with an incredible crew. Although he admitted, at the start, he was concerned we weren't as focused on advanced microbiology, he said that as he watched me interact with everyone, he said he came to understand my leadership style. And he really appreciated watching that and learning a different way of thinking about field trips. That's when I made the analogy I wrote in the introduction - about how "leading" isn't the right word - it's about working with a given quantity of energy. Brian also came to understand that trips were more than just about sampling and science. He hadn't really thought about the logistics of food and accommodations - the notion that you are, essentially, living with new people for many. And he said he totally appreciated all the work and skill I had with that.



Left to Right: Tetons in the morning during drive, looking down climbers' chute, Hanging Lake/Rock of Ages - Team of Ages

Day Eight - Tetons

By 7:30, Kevin, Chris, Rex, and I headed south for what seemed, at the start, to be a spectacular day. Not to sound forbidding, but it wasn't clear all day. Given that the clouds were ominously accumulating as we came to one of the viewpoints en route, I decided that we should pull over to take pictures now - not later. We made the right decision. The drive to Jenny Lake took over 2 hours. There, we waited in line forever at this information desk, the ranger helping a couple choose hotels in Jackson Hole. After finally asking our park-related question, we were told to visit the climbing registration area (being that we were going up a climbers' route). After said rangers said we did not have to register with them because we were not REALLY going off-trail, I then retorted, "alright, aren't you going to give us a reason NOT to go up to Hanging Canyon." But the 4 all-male rangers behind the desk only teased: "Why do you want to go up there? All there is is rocks up there." I was actually surprised that, unlike many other rangers I've dealt with, these guys were not going to try to put the fear of god in us for no reason. Of course, we did look able-bodied and well-equipped, if I do say so myself (and I do). They then gave us directions to the trailhead: right at ferry dock, walk 5 minutes until you come to a GIANT Douglas fir - take unmarked branch trail heading left. We headed back to the car, put on our packs, and headed down to the dock. In no time, we were being ferried across the lake. Alright - what could go wrong (other than the weather)? Well, we got off the boat and, guidebook in hand, started off to the right (everyone else went left - up the popular Cascade Canyon). The book stated that we needed to cross 4 footbridges and then we would hit the unmarked trail. Debate ensued about whether a bridge had to cross running water because there was one that crossed a bog, not a creek. We noted a slight path heading left after the fourth bridge (if you counted the bog) - but we weren't sure about the tree (BRYAN would NOT have been impressed). We walked a little past this point but didn't see any other bridges or trails. Given that we knew we needed to be right of the main creek that flowed down from the hanging valley above (we now were), we headed up. The way became thin, ugly, and questionable within 15 minutes. Vegetation was everywhere and we were stepping through thick masses of boggy grass in what seemed to be a path chosen too close to the choked creek. I had no doubt that at least a few animals and crazy people had scrambled this - but I absolutely didn't think we were on the correct path. Of course, the guys were loving this: rolling in mud, clawing up dirt, getting whacked in the face with trees and brush, hauling ourselves full body over boulder heaps. At some point, we lost the trail for good and chose to claw straight up this steep dry sage-covered slope that was 30-40° for a hundred or so feet. Overheated, suffering a massive headache, and overcome with the need to puke, I called a big time-out once things mellowed a wee bit. I then proclaimed that I had serious doubts about continuing this route all the way up. It was clear that we had ascended about 500 feet since the lake and were somewhere in the lower section of first big meadow. I recommended that we stop and spend no more than 10 more minutes pursuing this route. If we didn't find a convincing way, I felt this venture was not worth it (i.e. we needed to go back down to plan A - Lake Solitude). Chris and Kevin stood by my side, making me drink lots of water, and talked to me calmly to make sure I wasn't losing any MORE of my mind. After breathlessly downing a liter of water in one minute, I FINALLY received "guy laurels" by belching a HUGELY audible one. Until this point, I hadn't noticed that Rex had run off to scout for what we hoped was a real trail. But then he rushed upon us with this big expression, "there's a fucking freeway right up there." Indeed, there was a fucking freeway and we had obviously not been on the correct trail from the start. Much humor was had as we continued, surveying the messy thicket below us as we scratched our heads in stupidity (but loving having done it - even I admit that with relish).

The real trail was anything but a climbers' path, at least by my standards; it was well-graded, well-trodden, and beautiful. It made a long series of switchbacks through the big, central meadow before entering trees on the right ridge hogback. Finally, it switched back, cutting left and INTO hanging canyon proper. The way was glorious: green meadows interspersed with magnificent granite slick rock. Eventually, we came to cleft with a small pond - Arrowhead Lake, the first of three lakes up the

canyon proper. As a lake, though, it was unimpressive - more like a seep in a boulder field. Trumping its impression was the stupendous view OUT over the plains, to the Wind River Range, and down to all the park lakes (Jenny, Leigh, Jackson Lake...). I hadn't considered how utterly huge that view would be when I was contemplating this particular hike... although it was clear that MASSIVE weather changes were on the way. Next began an hour of defeating climbing. I figured the way would ease up after Arrowhead Lake; it did not. Things entered an interesting boulder field marked with sparring cairns. The guidebook made this thing sound REALLY difficult in terms of route-finding. Indeed, a beginner would be intimidated - but only because beginners are often obsessed with staying on defined paths and that is impossible (now THERE'S a deep statement). In actuality, the route was so simple that you could take any number of directions up the obvious and narrowing canyon. Notions that you were going to get lost were absurd given the obviousness of the whole route (i.e. effectively up a steep gully). Anyway - we stumbled, clawed, danced, and teetered our way through the rocks, arriving at this miniature gully with the most fabulous rock/meadow/flower gardens. The trail climbed right up this narrow chute of rocks and plants. Here, we met the only people we saw that whole day on the trail: a pair of earthy women who had good gear, knew the area well, and were on their way down. We continued up, the last 20 feet EXTREMELY steep and hairy - loose dirt and rock that required hand over hand and good foot placement, snow banks to the side. The next so-called "top" was the lip above middle Ramshead Lake. Here, the views finally opened up within the hanging canyon, revealing impressive walls of granite and the portions of the giant final cirque that featured, among other things, the fist-like monolith - Rock of Ages. Unfortunately, the weather grew cold, wet, and on-the-verge-of snowing as we hunkered down along the shore and ate lunch. Up to that point, I had been wearing a light cotton T-shirt that was now soaked (sin, sin, sin - I know). Teeth-chattering, I succumbed to changing quickly, back to the group - all a bit up from our lakeside lunch spot. I returned to hooded faces, donning my mid-weight Capilene and my rain jacket (but never changing out of shorts). As we sat dourly contemplating the weather and discussing heading down, the rain stopped and we decided that we HAD to go all the way up to Lake of the Craggs (it was too close to ignore). We packed up again and headed around Ramshead, climbing through another boulder field and up to a ridge-like promontory 200 feet above Lake of the Craggs. Unobstructed views to Rock of Ages and nearly the entire upper cirque were had: impressive snow and granite providing a strong contrast with the liquid steel of the deep alpine lake. And to have the place ALL to ourselves... you couldn't ask for anything more. We took the obligatory pictures - balancing my camera (with timer) on shaky rocks. In the final, third attempt of a good group shot, I almost fell as I jumped into the shot - but Rex yanked me up. Upon seeing the final shot, I was surprised he thought to do a thumbs-up and I remembered to smile (although I'm not sure I was ever NOT smiling on this trip). Last year's trip had set a precedent for the "strangle picture" (infamous Kody was the stranglee in 1998). Thus, I finally said - "alright, I can't decide which one of you should be the one for the strangle shot" (and I couldn't - they were all Kody's in the best sense of the word). Rex, the most theatrical of the group, insisted - even though Chris stated that he felt he deserved it more. Hmmm - could he have taken he took the pinecone incident the wrong way?

Reluctantly, we made our way down - taking in the views and admiring every seeming flower (some of us more than others). If Chris thought he deserved trouble, he got it on the way down. My witnessing goes something like this: we were just beyond where we linked up with the real trail - Chris leading, Rex 10 feet behind, me another 20-30 feet, and Kevin far back admiring the flowers (and you thought the previous comment was about me). I remember Chris say something incoherent as he stopped completely and then backed up. I remember seeing Chris and Rex sharing a few words and then watching Rex reach for his whoop ass. And then everything came together as a giant full-racked bull-moose rose from the brush 20 feet from where Chris initially stopped. Wow - that's all I can say (at least after "oh shit"). The moose, like the female from Seven Mile Hole, appeared docile. Chris - who looked more pale than usual and definitely had a certain nervous swiftness to his tone - said he initially saw it in the brush but then it actually huffed this loud warning breath at him. As Chris was describing these events, Kevin arrived and said that he knew all about the moose because the women told him about it (we were, like - when were YOU talking with THEM for so long?). Oh well. It was a great moment. I'd never seen a male with a big rack like that. After watching for about 10 more minutes, we cut high around the trail as the moose returned to munching the brushy trees. RETROSPECTIVE COMMENT - we did this same hike in 2000 and, believe it or not, the SAME moose was grazing nearly the same spot. Sufficed to say, we were all over-stimulated on the way down. Chris seemed to be making more references than usual to potential animal scratchings, markings, byproducts, etc. and getting dished plenty of shit for his acute animal anxiety (e.g. when we finally came upon a trail sign, Kevin turned back to Chris and asked "gee - you think a bear made that?"). The line at the boat ramp was substantial; a large group of climbers was in front of us. We were waiting about 20 feet up the trail above the ramp. We could see the boat in the distance and debated about whether or not we'd all get on board or have to wait for the next one. And then it started to rain. In one second, every piece of way too bright goretex was donned (the timing and motion of this action almost seemed comically choreographed, as noted by Rex). Surprisingly, we were the last group to make it on this run, splitting up and taking random single seats between others. Rex was cracking jokes and had the whole back end of the boat in stitches. He was sitting in the middle of the climbing group, next to this 30-something women. He asked Kevin, sitting across from him, to take his picture, and this woman gave him a big hug just to make the shot memorable. Rex, Rex, Rex. Once we arrived back on terra firma, a quick trip through the little grocery/gift shop provided needed energy: chips, juice, and chocolate bars. I did notice, however, that there was a lot of limping and shaking calves in the parking lot. I like to think that that 20-something pace was finally proving deleterious... because I was walking fine. The drive back to West Yellowstone was drizzly but fine in terms of traffic and timing. The next day, our drive home was long, silly, tiring, but tolerable. It's amazing how LONG you can play Pictionary and alphabet games (although we had to destroy our drawing notepad, much of which verged on the tasteless). We arrived home at 10:30 p.m. and made sure Rex was the first one back to his car because he was a new uncle. Even though I broke his Moose Drool glasses while hurling packs from the car, I received an airborne bear hug before Rex jumped in the pick-up and headed home. It seemed like a month since I was loading him into Matt's car, concerned he didn't know anyone well. I dropped Kevin and Chris off on my way home and sat for a long while in something of a daze in my living room. For a whole week after the trip, I'd wake up in the middle of the night and swear I heard the lads laughing merrily in the living room. I spent 4 intense days processing the impressive samples for freeze-down, after which I visited Brian and gave a small talk at the University of Washington. And then I headed into the GLORIOUS Glacier Peak Wilderness with my friend Niki. It was only then that I think I felt some of that testosterone beginning to dissipate. I have no grand conclusions about this trip. The report speaks for itself. I wouldn't change a thing.



Left to Right: Strangling Rex in the Tetons, all my lovely boyz and men - night one poker table.

*Don't suppose I'll ever know
what it means to be a man
Some things I can't change
I live around it.*

- The remarkably profound John Rzeznick, Slide

Epilogue

This trip remains one of my all-time favorites because it changed me in entirely positive and fundamental ways. Professionally, this trip infused me with so much energy that I felt it through the subsequent academic year. A lot of that energy went into developing a huge NSF grant in December 1999 (which I was awarded in July 2000, and which was renewed in 2003). Kevin and Chris both went on to take Molecular Biology, the main course where I use Yellowstone samples to teach DNA methods. Along with 5 other outstanding students, they generated the most significant data to date. The Yellowstone research continues with success and my head still spins thinking about the summer of 1999. In terms of the core team: Kevin completed Dental School at OHSU. As of 2003, Chris was a research assistant at OHSU. Ben became a paramedic. Rex is a youth leader and GED instructor at the juvenile correction facilities in our county. Brian finished his Ph.D. and, after a post-doc in Germany, began his first professorship at UNLV. Personally, the 1999 trip also remains a significant turning point for me because, ironically, I went into this trip uninspired by, skeptical about, and untrusting of men because I'd just been burned (again) by James, a guy with whom I seemed unable to end things for several unhealthy years of on-and-off affairs. Having never had brothers or a regular male presence during my formative years, I blame many problems with John and James on my simple lack of experience with men. After the 1999 Yellowstone trip, I would remark to Jenn that I learned more about males in those 10 days than during the prior 8 years dating, living with, or trying to make sense of them. I may never be able to adequately communicate everything I mean by this - but I will say a few things: all the 1999 guys were jubilant, warm, and intensely human to me. But, at the same time, they were clearly male, different... and, for the first time, I could objectively and subjectively watch that and feel that and study that without the blinding rays of a relationship blotting out my judgment. Experiencing the spectrum of ages and maturity levels, and the distinctive personalities was like being lowered into some Grand Canyon of masculinity, recognizing both the relationships between and the progression of the layers. I suppose, too, I felt like Jane Goodall - out there trying to keep up with their trail-blazing boisterousness - unable NOT to ponder what it means to be male, to try and make sense of my then-recent and seemingly recurring past, and to define my feelings and who I was against it all. Indeed, I found this trip to be an amazing point of reflection for months to come. Of course, again James would re-emerge in late 2000 but, even to my own amazement, I declined firmly. Jenn - who had, during the 3 years prior, NEVER been able to convince me to say no to this guy once and for all - applauded, exasperatedly asking: "My god, woman, what finally got through to you?" And I replied reflexively: The Men of Yellowstone, 1999.



Left to Right: travois team (Peter, Danny, Jessica), first moments off-trail, BOO-TANG (too many nights in grizzly country)

Joseph's Coat - Arsenic and Just Old, August 2001

First, I need to thank Roger for reviewing this. I don't normally pass my writings through colleagues but this one involved a challenging trip to off-trail Joseph's Coat Basin, which will be shorthanded to JC. Given said name, I cracked open my college bible but was dismayed to find references to Joseph's Coat only as long and sleeved. As I read on, however, I found more interesting information describing how Joseph's brothers ripped up his coat, threw him in a pit, dipped the coat in blood, and presented the garment to their father... to which the father replied: "A wild beast has devoured him." Surely, the beast was a grizzly. I first heard about JC two years ago via email friend Buck, who traveled there in 1999 en route to even more difficult Fairyland Basin. In general, though, I have avoided Yellowstone's remote NE corner because it has seen bad grizzly-human interactions - the worst involving the gruesome and unexplained consumption of a lone female hiker from Europe camped along Astrigent Creek (5 miles from JC). In January 2001, while setting up my research permits, JC came up because a park team was interested in surveying this region plus Hot Springs Basin (3 miles beyond JC). Needless to say, the prospect of joining a park team interested me for this expedition (and I don't use that term lightly). And so verbal plans were laid out to go August 23-30. To my amazement, the park team offered full horse support to JC. By early August 2001, though, specific details were still lacking and I surmised that a number of serious park fires were to blame. When it was clear everything was still a-go, we were told we were each allowed 40 lbs of gear on the horses. I was told that the horses (5, including the driver's) would ride all the way to Broad Creek (12 miles in by trail) and then up the creek (off-trail) to 4B1, the off-trail camp in JC.

After dropping gear, the horses would leave and return again in 8 days. Our primary goal was to map and survey JC (via 2 teams of 4), and then to do reconnaissance in Hot Spring Basin. Although the park team had/brought a lot of sophisticated maps, aerial photographs, and GPS, no one had ever been in this area. Survey work would be completed in 2 teams of 4. My group consisted of Danny, Peter, Jessica, and I - all of whom had extensive outdoor experience. I knew nothing about the park team except that a key survey director would be along. Names of folks outside of my lab will not appear in this report.

Given horse support, we packed major all gear into stuff sacks but brought only daypacks. We left Oregon on August 21 in my car, bound for one night in Missoula. After a fabulous dinner, we were in bed by 11 p.m. Rising at 8 a.m., our plan was to visit Lewis and Clark Caverns and then to continue to Mammoth. En route to the caverns, we saw a large black bear run across the road. Our cave tour guide, a self-pronounced shy girl named Heather, lead an interesting tour, despite over-using the phrase "you guys." Out of the caverns by 1:20, we stopped for a quick lunch in Bozeman before lead-footing it to Mammoth. Here, we were greeted with VERY BAD news from the director's assistant (who will now be known as the park team leader): the stock would be unable to go into JC because it was not certain whether a route was available up Broad Creek. Instead, they would only go to Moss Creek (7 miles in). This meant we would be shuttling gear 3 off-trail miles between Moss Creek and JC. The park team leader felt confident we could hike to Moss Creek in 2.5 hours and then - on the same day - shuttle gear to JC in a couple one-hour runs. I asked why we just couldn't put our base camp at Wapiti Lake (by Hot Springs Basin) given that a trail lead completely to this point, adding that we had not brought actual backpacks. Their only response: the park would loan us packs. None of this news sat well with me given that the park team leader had, 48 hours ago, been 100% clear about how the horses would access JC. The other big change: the director would not be joining us for several days (if at all). The park team leader was, in my estimation, third down the chain of command. After introducing the temporary staff scheduled to work with us all week (notably unloading groceries from plastic bags and dividing food), the park team leader presented some basic procedures, emphasizing this region as notorious grizzly country. We left at 5:30, enjoying a 90 minute soak in the Boiling River. Owing to construction between Madison and Norris (closing the road daily from 9 to 9, with complete closure once we came out of the backcountry), we had to leave our soaking spot at 7 to reach West Yellowstone. The next day we were to meet the park team at 8:30 at the Wapiti Lake trailhead (near Artist Point in the canyon). Owing to prolific talking outside our hotel room until after midnight, I didn't fall asleep until 2 a.m. I dreamed about bears circling our cabin. By 6 a.m., I was still in deep sleep and getting out of bed was unpleasant. I don't even remember having breakfast.



Left to Right: Jessica and Hayden Valley near trailhead, partial horse support, Moss Creek

Trail Day One - Only to Moss Creek (No Surprise There)

We arrived at the trailhead a few minutes before 8:30 and waited 45 minutes for the park team to show up. Packing up took a LONG time, the horse-team driver weighing all items before placing them into any number of interesting panniers. While he did this, the restless horses - crammed in a giant trailer - huffed and scratched the floor. Given the wait, I decided to pack my gear in one of the poor-quality park packs: too small and the frame gashed my lower back. Other packs similarly left their marks on everyone else in some way or another (all were more defective than mine - as others found out later). After 90 minutes, a conference with the horse-team driver lead to a decision I did not like: he requested that the park team leader hike behind him in case any horses bolted. The park team leader, in turn, wanted one other person (i.e. Danny). So already, we were breaking a cardinal grizzly rule. I overlooked the situation because it seemed like the rest of us hiking ahead would more than scare away wildlife. Nevertheless, the horse-team drivers' ominous final message would govern all future feelings and decisions on this trip: there were 2 yearling male grizzlies in the area and they could be unpredictable because they didn't know the difference between playing and predation. He then sternly added, "All I can say is: you be real careful out there." The hike in took us along the northern edge of the Hayden Meadows for 2 open miles. From our vantage, the southerly portion of Hayden spread out like a vast sea of undulating gold. Immediately in our view, the details of this yellow flatness were less impressive: a parched tangle of high grasses and low shrubs against a leathery dry earth. Even Hayden, a notorious haunt of grizzly, has seen the fatal mauling of an armed ranger hiking alone (testimony to the myth of relying on guns). Contrary to expectations, the terrain was mostly flat. We climbed a small hill immediately up from the parking lot and then descended gently, passing through a few stands of trees. One park team assistant was fit and kept a strong pace - in contrast with the other, who had recently suffered an ankle injury. We dropped to flat terrain that hugged the interface between meadow and forest. Several dried mudflats and bison bath-bowls bore clear imprints of animal tracks - including bear. We then turned northerly and passed several thermal areas, all indicated by the smell of sulfur and the stark, white geyserite. Performing survey work was discussed but we agreed to move on given the big day ahead. From here, the trail made a clear switch into open forest, a trend that lasted all the way to JC. The forest floor was dominated by variably ripening grouseberry that pleased Jessica (who claims to be part ursine). The forest also pleased Peter as he prefers trees to meadows or rocks. Being opposite of Peter, I remember little between the meadow and our lunch-spot, an hour away.

Conversation with the park assistants revealed that both were in the Student Conservation Association, an Americorps-like program. The older/faster one had a background in outdoor work, including in Alaska. For lunch, we picked a spot with large logs, trading jalapeno cheese for avocados. After 30 minutes, we packed up and headed out just as the horse team caught up. The driver estimated he was riding 15-minute miles and would take just under 2 hours to get to Moss Creek. Notably, ONLY HIS mileage/timing estimates were accurate during this whole trip. Within 40 minutes, Danny and the park team leader caught up. Given that we had only managed 4 miles in 3 hours, I asked if it was still realistic to get to Moss Creek AND move 2 loads to JC. The park team leader, after considering this issue with her group, sent my team plus the faster assistant ahead - the hope being that we would race to Moss Creek, pack things up, haul into JC, and be back for the second round the same time they finally caught up. Unconvinced, I asked whether we would be allowed to camp at Moss Creek if things didn't go as expected (I do not think the park team leader appreciated this question). The answer: we would have to radio that question in later. At 3:30, my party reached Moss Creek, which was given away by an obvious narrow creek surrounded by a blanket of emerald moss, all covering an open field of green. The camp, located immediately beyond the meadow, was scenic and comforting - although there was a feeling of remoteness that I had not, to date, felt in Yellowstone. Of course, the comfortable feel of the camp was immediately upset by the huge pile of gear waiting for us - most left on the ground.

For the next hour, I kept my mouth shut - partly because I didn't want to get in any more faces but partly because I knew that pressing on to JC was not going to happen (so why not just lay back and watch things unfold?). Proposition (1) - haul in the awkward panniers as is. This illogical (in my opinion) notion drove Proposition (2) - constructing a travois (look it up) that would be dragged by 2-3 people. And so I watched as 6-8 foot logs were tied together and a huge amount of gear was lashed thereto. When the time came to move the beast, all 5 of us were needed... and, even then, we only managed to drag the travois up a small knoll and 150 feet through a maze of trees crisscrossed by deadfall. It also has to be stated that none of us, at any point, were using a map and compass, having agreed that a sun-defined B-line east would lead to Broad Creek (easier said than done). A large discussion ensued for some time about what to do given that it was now 4:30 (our apparent rate = 200 feet/hour). The main questions: was there a better way to carry the gear using logs, should we just unpack the gear and brute force haul it in with the packs, was there even time to brute force things in? I felt there was no way in hell we could physically haul things once - much less twice - and not wind up in the dark (a grizzly rule I was NOT breaking). My rationale was the Mountaineers' guidelines about off-trail rates (i.e. plan 1 mile/hour). By this calculation, we should take 2-3 hours to get in. I suggested we go back to Moss Creek and work on organizing gear for staying the night. Five minutes after returning to camp, the others arrived and the park team leader radioed in to reserve Moss Creek. Given route-finding concerns, the park team leader also agreed that a light team should do some reconnaissance that evening. Danny set out with the park team leader and the faster assistant, leaving the rest of us to set up camp. They returned after only 30 minutes, insisting that they had seen enough to decipher the way (ha ha). Given the dire hauling situation, we consumed our heaviest dinner that night: burritos. During dinner, the park team leader recounted the story about the woman who was killed by the bear, providing more graphic details than even I cared to hear. While Danny and Peter pumped water for the next day at the creek, Jessica and I had a powwow to discuss our parallel concerns. As a former park ranger and the daughter of career park rangers, Jessica's opinions were significant and I did not take them lightly. Jessica and I agreed that safety was our highest priority and, given that rules were already being breached, we needed to stand up if more serious issues arose. Even so, I felt I was in a very awkward position given my relationship with the park service. I didn't want to appear overly paranoid or control freaky but, at the same time, I know and respect the responsibility I have to my students, their families, the university, etc. It was disturbing to me that I felt, so far, that I was not 100% upholding those standards. I had not, to this degree and to this extent, questioned such things on any previous trips. Another awkward problem was my relationship with Danny. Although field-experienced, he was on this trip as an employee. In direct contrast with Danny, I am philosophically liberal and recreationally conservative - and our differences emerge the most in the field (throw in the flaming liberal Peter and you will have quite a show). Despite everything, though, I slept about as well as I usually do in the backcountry.



Left to Right: Jessica contemplates off-trail, the team off-trail, the fried boyz at backcountry camp 4B1

Trail Day Two - Finally to JC

Consistent with other mornings, there was no explicit wake-up and the day began unorganized. To say that packs were heavy is an understatement. On average, each of us had brought 60-70 lbs of camping/personal gear (8 people = 480-560 lbs). While our science gear weighed 20-30 lbs, the park team carried extreme amounts of equipment (200-400 lbs) - e.g. over 20 lead batteries, each of which was 2X6X1" and weighed 2-3 lbs. While Jessica and I each carried 50-60 lbs, Danny and Peter each hauled 80 during round one. Jessica discovered that the buckle of her pack would not close and so we tied it together with extra bootlaces - impossible to undo fast when you had to pee. We set out climbing the knoll we'd dragged the travois up the day before. By now, the injured assistant was fully limping and stopping frequently. My nervous "hey bears" evolved into

Peter singing and echoing (Marco/Polo and Hey Bear/Moo Cow). While Jessica and I were comforted by Peter's raucous voice, Danny was not thrilled with his oft-bawdy lyrics (e.g. Monty Python's "Sit on my face and tell me that you love me"). This stuff, mind you, provided background music for pretty much the whole trip. Eventually, we came to a landmark stream, which was followed a long time - until it became pinched into the narrowing canyon. When said canyon was not longer navigable, we followed a thin trail leading up this large hill. At the top, we finally beheld the stark white of JC in the distance. It was noon and the park team leader seemed surprised (I was not). Once the trail vanished, a STEEP slope down thick forest was the only way down. Given that no one wanted to backtrack, we picked our way down the mess. At the bottom, we had to climb and descend another nasty hill. Our patience wearing thin, we finally reached the basin and figured camp was 5 minutes away. In fact, we spent another HOUR hiking to 4B1 - located at the easternmost end of JC. Exhaustion and dashed expectations etched our faces as we sat silently around the fire-ring, unable to fathom doing this again with half the day gone. Given assertions this would only take an hour, the park team had not packed any food and so it was awkward as we wolfed down our lunches - offers of shared food declined. The most problematic thing, though, was that the injured park assistant could now no longer walk and the leader announced that this person would be left in camp with either Jessica or I while the rest of the group hauled gear. When I said it would have to be both of us, displeased and/or flabbergasted expressions were delivered by all but Jessica. The team leader announced that a 2-hour break would be taken before heading back. To my surprise, Danny immediately questioned this proposal, insisting they needed to be on their way no later than 3 p.m. (it was currently 2) to avoid hiking at night given that the hike obviously required a solid 3 hours. The park team leader was visibly stressed by Danny's suggestion - although, finally, there was some real discussion and map consultation about the best route (i.e. down the creek or a more direct B-line through the woods). Making this choice problematic, one of the assistants had lost a duffel in the pre-canyon section. After Danny and company left (only 20 minutes later), the rest of us began setting up camp. We were asked to keep our radio on because the park team leader would call when they left Moss Creek again. We heard noise around 5 p.m. but were unable to confirm it was them because the bowl in which JC camp is set was the Bermuda Triangle of transmission. To our happy surprise, we heard Peter's MARCO just after 6 o'clock, the sound from just over the ridge behind camp. Hungry, Jessica and I started cooking falafel and vegetables. But the yelling trailed off, vanishing for 20 minutes... they had overshot their trajectory and were now heading northeast of camp. We climbed the ridge above camp - discovering a fascinating lake set in the forest - and radioed our teammates to guide them back. Within 30-40 minutes, they were in view, descending this high, steep forested ridge. The park team leader was the last one down, suffering from a knee injury that would decommission participation over the next day and a half. Danny and Peter seemed more brutalized that day than I'd ever seen them (given other trips we've done, that says a lot). As was typical, our party ate mostly by ourselves and before the park team. I didn't feel great about the lack of dynamics but I wasn't sure what to do. Jessica and I had too many issues to be social - and the guys were 150% fried. Maybe everything just all got off on the wrong foot - I don't know. We exchanged cooking/hiking clothes for sleeping clothes right after dinner and proceeded to bed. The distant, deadfall-separated tent array also reflected our team's bifurcated state. Within our area, though, our 2 tents were placed right next to each other (doors facing one another, a foot and a half between). Light snoring was heard instantly from the guys' tent. Jessica and I, as became the pattern, talked a long time with our headlamps on and then spent a variable number of hours awake. Acutely afraid of bears coming into camp at night (because that is when the aforementioned woman was killed), Jessica and I slept close, away from the tent-walls - the whoop-ass at our feet and the headlamps by our faces. What we really wanted was a bigger tent and to have the guys sleeping with us - guarding the edges. We never dared to venture out to pee. All major sounds during the amazingly silent nights were discussed. The guys would tell us to just stop thinking about bears but neither of us could not NOT think about them. Conservatively, I slept 4 hours each night, most 2-7 a.m.



Left to Right: me in Broad Creek, highpoint where Danny broke through sinter, Broad Creek and colorful canyon walls

Trail Day Three - Finally Some Science

The next day was our first full work day, although we didn't set out until 10:30 a.m. owing to gear chaos. I am especially frustrated by unorganized gear in the field - particularly that some food had likely not been hung properly given the late and haphazard unloading. While cleaning sorts my head out and calms me down (because I am like my mother), Danny was put off by my intense activity because, in his household, "mom cleaning" meant "mom pissed off." Anyway - today, the park team leader bowed out because of injury... but the injured assistant was mobile enough to tackle nearby features. Initially, the park team leader announced that 2 parties would go out: the men would tackle a series of springs a mile back in the woods (i.e. outside JC proper) and the women would focus on JC features near camp. Jessica quickly pulled me aside as she was against breaching the 4-person party size rule if we weren't going to be working side-by-side (which we'd been told prior to the trip). Thus, I felt I needed to approach the park leader, albeit after consulting with Danny. I don't remember my exact words but I communicated that bear safety issues were not negotiable given expectations that the project director had laid out in advance - not to mention the fact that we had already bent the rules more than I was comfortable with. Regardless of our

different opinions, Danny and I did agree that we were both 100% frustrated with expectations not being met - whether with regards to the horse support, the decision to bring an injured team member on a trip like this, and the entire lack of awareness about how difficult this terrain and route-finding would be. I further explained that Jessica and I had laid out 3 issues that needed to be addressed - and now felt like the right time: completing the JC survey with appropriate parties before moving out of the basin, getting into camp before sunset, and making it clear that we needed to survey Hot Spring Basin - even if that meant taking a day off to go there by ourselves. Danny seemed agreeable but he was nervous with me questioning someone he perceived as in charge. I did not see it this way, given that the project director had bailed, that authority had never been discussed, and that the park team leader was less experienced than most of my team. Danny was empathetic toward Jessica and my general anxiety, admitting that felt bad that we'd gotten stuck waiting so many hours for them yesterday, how difficult that would have been to just sit there with nothing to do - all the while trying to cope with the mounting problems. In response to the first issue, the park team leader initially tried to coddle my concerns. But then I restated what I had been told to expect in terms of party size and JC priorities. In response to the third issue, the park team leader asked, after a long moment of silence, that we at least wait after additional park staff arrived. I didn't get to my second point because we hadn't seen what the survey protocol was and I didn't want to assume anything just yet. After another hour, the gals began surveying the left side of Broad Creek, the guys the right. The amount of park team gear was ridiculously large: where we used a hand-held GPS, they hauled in something that looked like a laptop computer attached to a yellow toilet plunger; where we used a box of sterile disposable pH paper, they hauled in full-on pH units, bottles of standards and distilled water. They also carried in some contraption that measured ion conductivity (although no one could answer which ions were being measured or comment on the utility of the data). Both our temperature meters and cameras were the same size and quality.

The guys quickly worked their way across Broad Creek and through the woods. Next, they began steeply ascending what could only be called a steaming mountain - HUGE portions of the face hissing with vents and fumaroles. JC is a microcosm of the main canyon area: iron-y reds, sulfur-y yellows, arsenic-y gold, and barren sinter white. Indeed, we learned that the water flowing downstream after JC had toxic levels of arsenic. Although drinking water was gathered at the upstream camp, a few of us joked that arsenic poisoning must be to blame for our psychological squalor over time. On the gals' side of the river, just-out-of-reach features smoked from vertical embankments that fell 10-15 feet into Broad Creek. Given that I was the only one in sandals, I walked the creek to examine these features from below. Broad Creek was spectacular: amazing travertine formed the shallow riverbed, no portion above my knees. Like JC, the rock was a jigsaw puzzle of reds, oranges, and yellows. In between the colors, glorious plumes of algae formed massive feather-like structures that exhaled a starry cloud of oxygen with every touch. While waltzing down the magnificent waterway, it dawned on me that there were likely a few warm spots and I became more vigilant. In the first 200 feet, the only safe site we could survey was a small, boiling spring along the side of the creek. Jessica and I were trained to perform water analysis a la park service. As a microbiologist, I was taken aback that probes were only sprayed down with distilled water between uses. Given the numbers of sticky microbes in hot spring effluent, such a cursory treatment seemed an easy way to transfer bacteria between features. My field procedures employed sterile disposable pH paper (less sensitive, lighter, hardier, and no double dipping) and scalpels with changeable heads (i.e. a new sterile blade is used for each site). My thermometer is used over and over again - but cleaned with alcohol between uses. While the park team focused on thermal source-points, I focused on downstream bacterial mat communities. Source-point water is chemically and physically different from what is found in mats - e.g. they are cooler and differentially sequester chemicals. Sufficed to say, I wondered why the park survey project was not developed with more biological questions in mind. As we worked, we occasionally glanced above - to the guys navigating slopes I thought insane (although I figured it might relieve some testosterone and tension). After the trip, I was surprised Danny had no pictures from this climb. His response: I was terrified and the last thing I was going to do was haul out my camera. Eventually, we found our first flat thermal field - BUT the GPS would not lock on enough satellites (despite ALL those batteries and accessories). Given that all sites were hissing fumaroles (i.e. gas - no water), Jessica and I twiddled our thumbs while the park assistant wrote a seeming novel about the area. Watching the guys move from spring to spring to spring, we kept looking at our park assistant, unable to figure out what was taking so long. Indeed, a key reason I maintain this page is so I get verbal excess out of my system because it doesn't go over well in scientific writing. Prior to this trip, we were told teams spent no more than 10 minutes/site. While the guys were adhering to this estimate, we were pushing 30-40 minutes/site. We tried to say encouraging things about scouting ahead but nothing worked. We hoped the park team leader's presence the next day would speed things up.

Eventually, we arrived at this huge white sinter face with many rivulets (transient rain run-offs, NOT thermal streams). With the park assistant behind and struggling, Jessica and I ran up the forest-sinter interface to a yellow ridge with a smoking crater. At the top, we were shocked to find another vast thermal area, the foreground hissing and spewing gutturally. Amazingly, boot prints (not ours) lead from where we stood to a big cone that steamed in the middle of the ridge. We felt like we were walking on another planet - even the sky seemed abnormally blue, almost ultraviolet. Below, the guys had dropped from to the river. The yellow cone was so large that we were afraid to get close and see what was inside. It spewed so much sulfide gas that our urge for hard-boiled eggs began to multiply that afternoon (gratefully fulfilled upon our return to civilization). We proceeded back to the forest edge and spied this huge, dark gray mound and crater - deep sounds of mud hurling and boiling. As we peered into the cauldron, the park assistant made it up, designating this basin for another day because it seemed large and geographically distinguished by the ridgeline. Returning to the river, we found the guys ravenous. Our extraordinary lunch (tuna salad with crackers, jerky, candy, and fruit) was enjoyed in the middle of this hissing peninsula between Broad Creek and the main thermal side-creek (the one we hiked down the day before). Afterwards, our park assistant designated survey zones for the rest of the day: while the guys mapped the hissing ravine, we worked backwards to the base of the ravine. The guys completed their area (3 times the size of ours) in less than an hour - and then vanished over the ridgeline at 5 p.m. We pointed this out to the park assistant, suggesting they come down and help us. We then asked how late they stayed out ("until it gets dark"). I said we wanted dinner/clean-up with light... so we were hauling the guys down. I approached the guys' park assistant and explained our needs. He replied that he also didn't want to be coming in late, smiled, and said they would go down and coax our assistant to finish. Jessica and I should head back - with dinner at 6:30 p.m. Sufficed to say, I felt

conflicted again for saying what I had to say... but I sensed that the guys had forgotten about all frustrations - having been active all day with an excellent leader and sampled 45 features (we documented 5). Inactivity and boredom clearly breeds unrest, that's all I can say. Even so, we all needed a break... but it seemed only Jessica and I had the sense to voice this need. Jessica and I would converse on that trait in men: that incessant need to go and work and never stop. I have felt it in my own life many times, but I usually slow down - often to the frustration or criticism of men (and some women). Jessica and I made our way down the drainage and back to camp. There, we found everything quiet (the park team leader asleep). We sat in the gorgeous late afternoon, preparing spaghetti with meat sauce, garlic bread, and a concoction of applesauce and Captain Morgans. To my surprise, the guys returned early. During dinner, we noticed that everyone wearing cotton pants had holey asses - presumably after sitting on the sulfurous peninsula. Duct tape was applied generously. After this trip, Peter and I went to the local hardware store for supplies and he picked up two fresh rolls. I smiled: fall wardrobe? Yup. If you can't duct it, fuck it. I slept better than I did the previous night - although I was hungry by 11 p.m. and it was MUCH colder.



Left to Right: Otherworldly ridge features, Danny and Peter post-lunch, visible fire on the horizon

Trail Day Four - Seeing Red and Bootang

Given that it was my 34th birthday, singing accompanied breakfast. Today, the park team leader joined the gals as we headed farther down Broad Creek. Meanwhile, the guys headed up the main thermal side-creek. As with yesterday, we agreed to meet at the peninsula for lunch. As we set out, a huge plume of smoke rose in the south. Given its size and proximity, the park team leader radioed headquarters. The fire was 10 miles away, originating near Mud Volcano. Owing to wind and its size, we were asked to call in regularly - the park service assuring us they would airlift us out if things shifted north. The fire and radio calls would continue through the entire trip. Within hours, we could smell smoke and fine ash fell from the sky. Amazingly, the park team leader grew more concerned than me. Meanwhile, my team found levity and joy in the possibility that we might not have to haul all this shit out. Today's survey went MUCH better than the day before. We got more done and actively worked as team. While most of drainages were dry, there were many hot acid springs that emerged along the canyon floor near the river. Many featured brown-purple films, suggesting photosynthetic bacteria. Given profuse patches of arsenic and Yellowstone's fixation on microbial prospecting, it seems like SOMEONE should be studying this stuff. Overcome with hunger and heat, we met in the meager shade of several small pines on the slope above the peninsula, gorging on cheese, salami, apples, and Nutella. Meanwhile, the guys had found an alkaline spring with a red layer community, an island in this otherwise high-acid sea - an excellent birthday present! After our first walk through JC, Danny and I had discussed the fact that we doubted there would be anything here for us (and we are good at judging this based on colors and geology). After lunch, the guys completed all survey work up their creek. We did less, in part because the smoke and radio reception were getting worse (every call required hiking up this knoll). Surveying downstream Broad Creek was also difficult because the hissing hillside edges were dicey. Eventually, we headed back up yellow cone ridge because the park team leader wanted to see it. With dark smoke in the air, hiking through this area was freaky. Staying high, we crossed a few thin stands of pine and managed to drop back into camp. Given that it was early, I took a full-on bath. Just after I put my clothes back on, the guys returned and we began chicken noodle soup from scratch and devils' food pudding made with orange liquor. Meanwhile, the park team was concocting mixed drinks from any available substances: vodka/Tang was dubbed "boo-tang" (although I was never sure if "boo" referred to booze or booty - plenty of which was emerging through loose duct tape). After dinner, we received troubling news: the project director (scheduled to arrive today) had set out too late and was now sleeping alone and tent-less at Moss Creek. Making matters worse, I again broached Hot Springs Basin. The park team leader was justifiably reluctant; even Danny and I had agreed that 3-4 miles (one way) through rolling thick forest could be challenging. Our next proposal: to move our team/camp to Hot Springs Basin for the remainder of the trip (as JC was officially done). In (strong) response, the park team leader stated that we were obligated to carry things back to Moss Creek, explaining that the park team would not have carried so much gear if we hadn't come along. Well - this was news to us! Indeed, it seemed our team was serving no other purpose than mules. Since Hot Springs Basin was likely not going to happen tomorrow, my team decided that we wanted to survey upstream Broad Creek (toward Wapiti Lake) by ourselves. Retiring early, our team seemed more talkative. Jessica (virtually engaged at the time) grilled the rest of us (all single) about relationships, in particular: what we all considered ideal partners (notably, she never answered her own questions!). I won't delve into the responses of others but my list included: extremely secure (given who I am), passionate in terms of art, music, and writing, and good in bed. Of course, a man (to me) was just icing on the cake; the cake was plenty fine by itself. In contrast, Danny and Peter expressed lingering sadness over this topic - clearly lonely in their solitude. Poor things. All I can say is: BOO-TANG!

Trail Day Five - The Grizzled Team Continues

Early the next morning, the project director showed up for what was now down to a 1-day visit. We had been warned that she was high energy and may be disappointed if anyone was found sleeping late. Within 30 minutes of her arrival, she and the

male assistant vanished WAY down Broad Creek. The other female park team members left shortly thereafter (I don't know where). My team left in good spirits around 10 a.m. It was good to be together and to get away from the park team. Assuming we would be in the water a lot, we all wore sandals. Carrying little gear and no lunch, we intended to hike 2 miles down to this oxbow - surveying features en route - and then return to relax in camp. At the start, the way was confusing because the creek was convoluted, choked with logs, and flooded by many warm springs along the banks. Crossing back and forth 6-8 times in the first quarter mile, we obviously could not decide which side of the creek to be on - or whether to walk IN the creek. Soon, the valley opened and Broad Creek twisted down a wide meadow of tall grass and cattails. Shockingly, a miraculously clear horse-path parted the foliage - recent horseshoe prints visible in the mud. We followed this trail for 30 minutes, wondering why the park team had been unable to use this well-blazed route. After briefly bogging out and losing the way, we regained the trail and proceeded to a distinct point where the open valley bottlenecked into forest. The landmarks were 100% consistent with respect to the map we were using. Now on a well-trodden path in dry woods, we soon arrived at a prominent geysirite side-gully that swooped down from the north. Anticipating thermal features, we climbed to a saddle to survey the side-canyon. Given profuse grouse-berries, Jessica and I dined while Danny and Peter took the digital camera and climbed higher into the bowl. Danny's unusually emphatic words before leaving us: make a LOT of noise. At the time, I didn't fully appreciate the tone of his voice (although I recall his warning well). Given the wait (and their being out of view), I grew slightly concerned - although we heard Peter yelling Marco/Polo the whole time. Upon returning to the creek, we hiked the obvious trail for 20 minutes before re-entering a tall-grass meadow. In no time, we came to a sandbar along the braiding creek and all stopped in our tracks. I was said to have turned white as a sheet. A fresh, large grizzly track was pressed in the sand - 2 inch claws delineated beyond the 8-inch pads. I panicked, convinced that the grizzly was just beyond in the grass and that the guys were going to insist on proceeding. But Danny had this look of actual fear in his eyes and physically turned us around. I actively remember him taking away all this loose gear I'd been hand-carrying and focusing me to move. Peter's volume notched up 10-fold as we hiked back. And we did not stop until we got back to camp. Although the afternoon sun and tranquil silence of camp were pacifying, our group therapy session quickly filled the time. First, it came out that Danny and Jessica had both noticed fresh bear shit on the forest trail prior to the meadow with the grizzly track. Both questioned it at the time but didn't explicitly speak up. More stunning to me, Danny said he had "felt" the bear for some time that morning (normally, only Jessica and I ever used such terms). What he said next, though, drained my blood for several heartbeats: when he saw the print was facing our way, his knew the bear thought we were stalking it and so it had actually been coming toward us in a defensive manner. Therefore, he knew we needed to turn around immediately, sending a clear signal otherwise. We lazed around for the next 4 hours, eating, reading, and talking. It is hard to describe the fatigue we were feeling: lack of sleep, physical stress, mental frustration all commingled. Concerned that we had to be out by 7 p.m. on Thursday (and we did not trust the park team keep a schedule), we decided to trade stock support for autonomy. At first, we discussed helping the survey team half of tomorrow and then moving to Moss Creek for the night so we could get out early Thursday. As the conversation progressed, Jessica suggested we fully leave tomorrow. The guys seemed less enthusiastic about this idea because that would mean carrying a whole day of uneaten meals. Also, we would be leaving a magnificent place - despite all the other factors trying to rip JC apart. The other troubling uncertainty: not knowing how many park team members would be left. The project director and park team leader were both planning to leave in the morning. Replacing them, the project director's right hand man was coming tonight, staying through the end of the trip. If the replacement didn't make it in, we felt obliged to stay for safety reasons (although the park would be nuts to keep this survey going under those conditions). Lastly, we agreed that the project director - not the team leader - was the one who needed to be dealt with in terms of these decisions.



Left to Right: fresh grizzly track, the team leaving (!), lunar upper plateau during the great escape

We began cooking around 5, trying to finish 2 dinners (chili mac/cheese and Thai noodles) and as many lunch items as possible. Predictably, Peter and I earned the "gross award" by finishing 2 cans of Vienna sausages. The park teams rolled in by 6 and, for 90 minutes, I searched for the right moment to discuss our departure. Making matters difficult, the replacement assistant had (like the director) set out late; however, instead of stopping at Moss, he continued - falling and seriously injuring his knee in the off-trail section. Can you say: helicopter rescue (I am NOT making this up)? The chopper had to land near Moss Creek camp and then send out a rescue crew on foot. This development definitely pushed this trip over the bad karma threshold. Consequently, the park team leader announced she was staying. The park team was in good spirits, making more levity of the situation than one might imagine (even I admit the whole thing was pathetic in a darkly amusing way). They were even discussing going to Coffee Pot Springs, 3 miles away as the crow flies (i.e. the same distance as Hot Springs Basin). Thus, I announced that we would be leaving tomorrow because we had a tight travel schedule on Thursday. They should give us what they thought was appropriate gear for carriage to Moss Creek. The project director was completely agreeable, offering to carry a substantial load of out the next day (and she did). The park team leader was quieter, but did thank us for helping. The male assistant seemed taken aback. Having been the most quiet but outgoing member of the park team (in terms of group dynamics and leading the guys), this assistant was someone everyone on our team felt bad about ditching. I conveyed my appreciation for his leadership and outdoor abilities later that night, although I added that I hoped other park surveys didn't involve so much bad karma and injury. He only laughed and rolled his eyes. I said it was unfortunate we had gotten off to a

bad start with the horses and tried to stress that it had been a fascinating trip. That night, Jessica and I slept poorly. Knowing a grizzly was just up the creek was unnerving. Every sound was discussed. And, meanwhile, our men snored and snored and snored. At some point during those many long hours of lying awake, I made some solemn and serious decisions. First, no more backpacking in grizzly country. Second, it was time to start taking REAL vacations without students. Third, Danny needs to be responsible for a trip of this magnitude - both logistically and in terms of a large and diverse group. Finally, I would never put students through anything like this again. During and after this crazy trip, I was concerned that at least one set of parents were going to write the park service a nasty letter after hearing all the things about this trip.

Trail Day Six - The Great Escape

After rising at 7 a.m., packing was overwhelming. We thought we'd eaten SO much and yet the food bags were still massive. On top of said gear, the park team left us quite a pile: an extra tent, extra food, and 3 bags of science gear (including 40 lbs of batteries). Danny's pack was 100 lbs, Peter's 90, Jessica's 70, and mine 60. Indeed, we each had to be physically pulled to stands. Danny, leading the B-line approach between 4B1 and Moss, was physically shaking many times during the hike out, looking more beat up than he did hauling into JC. Peter was silent and reticent. Jessica was eager. I was something between asleep and eager. Right out of camp, there were several uphill sections. On each, I was reduced to resting every 20-30 feet. At one point - dizzy with the repetitive landscape of trees - I commented that this must be what DNA feels like in a gel (to which my team asked: what percent? agarose or acrylamide?). That's when you know you taught them something. We arrived at the pinched-off canyon and creek, making good time and pleased with ourselves. Here, we found a path that veered away from the creek and, following it, we began moving fast without gauging time. At some point, several of us saw what looked like Moss Creek in the distance. Wrapped up in conversation and the ease of a trail, we continued on and on. Later, we agreed that we had gone too far and consulted the map (as we had been unable to engage our GPS unit). Peter wanted to cut the most severe line back - due east. Jessica and I wanted to cut a less severe line. Danny wanted to head due south because then, no matter what, we'd hit Moss Creek (then we could follow it upstream to camp). Everyone spread out on trajectories that were 30-50 feet apart and regrouped when we hit a small cliff in the trees. Below: Moss Creek. Although we were clearly downstream from camp (deduced from the map), deciding how to navigate back was the only point during the day when we became stressed and pissed each other off. Danny was fine contouring on loose, exposed shit (I was not). Jessica was frustrated but blazed forward. Peter hung back, indifferent about everything. Fortunately, as we neared the camp (still a LONG way back), the slope reduced significantly and we dropped to the grass-choked creek. After many frustrating bends, we arrived at camp around 1 p.m. Everyone threw off packs, complained - and then we ate and rested for an hour. I can't say the packs felt lighter, though. Danny lost 40 lbs but took back 15 from Jessica and I. Peter, Jessica, and I each lost 8 lbs. Peter definitely woke up after eating half a jar of Nutella. With Danny leading and Peter singing bawdy songs, we made deliberate time back. Danny set 10-minute rest stops every 45 minutes - which worked until we reached Hayden Meadows. While I slowed down, Danny and Jessica began "smelling the barn." As we emerged from a small stand of trees, a huge male elk bolted and there was, of course, screaming from the women. From the meadow, the enormity of the fire was evident: a MASSIVE plume occupied a third of the horizon, the smoke gray with bands of brown, the entire sky a hazy periwinkle blue. Stumbling down the last quarter mile of crunchy dry grass (at 6:15 p.m.), Peter and I broke into "I Will Survive." We spent a long time unloading and then cursing the park-issue packs (which we locked inside their car). With gear strewn in a 20-foot radius around my car, we moved in slow motion - as though we had no idea what to do with this moment in time. At one point, this giant RV made a few passes around the parking lot, gaping at us and all our shit. Eventually, we packed the car and climbed in. With the road between Norris and Madison now fully closed, we drove the LONG, curving road around Yellowstone Lake, stopping at the first facilities to secure accommodations in West Yellowstone and enjoy some ice cream. We resumed driving at 7:30, the colors and light of the sunset memorably awesome. The Absaroka Range was more beautiful than I have ever seen it - wisps of pink-under-sided clouds forming in the gray-blue twilight. To the south, grand Mt. Sheridan spoke to me with the perspective of my having stood on its summit two years before. As we ascended and then descended the Continental Divide, we even spied the hazy Tetons - our next big destination. Although I speak fondly of the 1999 team, they were gregarious to the point that I often felt like an amused spectator. This team felt different and deeper - although I blame it on our mutual suffering, Jessica's blunt questions, and Peter getting us all to sing. Everyone was integral and extremely real regardless of the seriousness of the conversation or the levity of a bawdy song.



Left to Right: we love men who cook (said Jessica & I, sipping Shiraz) - Danny BBQ's, Peter saute's, Teton sunset

Resting in the Tetons - So Gneiss!

After a full day cleaning up, we made our way to a relatively expensive cabin near the Tetons, our reward for surviving JC. Although I thought there were too many cabins in the otherwise scenic complex (8, each a duplex or quadruplex), the units were posh (although they lacked a television, which only I appreciated - god forbid, we'd have to amuse ourselves more).

Danny enjoyed his own room, Jessica and I shared a room with 2 queen beds, and Peter got shafted with the sofa sleeper. Aside from paper-thin walls, the place was tranquil (I think our neighbors were less thrilled with us than vice versa). Settling into our 3-day abode, we broke out the good alcohol - Shiraz and Moose Drool - and began dinner. That night, I discovered that Peter enjoys cooking at the level of an art form. He chopped and sautéed onions and peppers, salting and tasting everything (just like I get teased for doing - albeit with other peoples' utensils). While Danny BBQ'd steaks and Peter prepared side-dishes, Jessica and I swilled. One of the best meals I've had - and that's not the wine talking. At some point, we discussed plans for tomorrow. Given weather issues, we decided on Lake Solitude (15 miles/2000 feet). Already, a dark ceiling of clouds was gathering, blotting out what should have been an amazing sunset. Doing this hike meant waking at 6:30 a.m. because we needed to catch the 8 a.m. ferry across Jenny Lake (the earliest of the day). Thus, we retired early.



Left to Right: Jenny Lake ferry, racing to Lake Solitude, Grand Teton from upper trail section.

The wake-up was difficult. Outside, it was cool and surprisingly dark. We drove to Moran Junction but couldn't remember which way - left or right - was faster (either will get you to Jenny Lake). Arriving at the ferry dock at 8:30, we were surprised to find the boat wasn't full. As we sped across the still water, Danny, Jessica, and I went on and on about visible Hanging Canyon (which the 3 of us did last year, and which I first did with the boyz in 1999). Peter seemed unimpressed. Had I not insisted, Peter would have stayed at the cabin because he is not into mountains (indeed, he only did it for his mom - a long story). After disembarking, we proceeded up Cascade Canyon ahead of everyone. Passing Hidden Falls, we climbed blasted granite to some panorama point where most people stopped. Then the trail was flat for 3-4 miles, meandering gradually to the head of Cascade Canyon. Grand Teton et al. were visible and a wide river flowed along the trail the entire way. We also passed several parties (presumably from earlier ferry runs). At the head of the valley (by a key trail fork), we stopped for cheese, crackers, and GORP. Surprisingly, the way up to Solitude looked (and was) extremely gradual. Most of the trail was completely out in the open - amidst boulder fields and meadows. Coinciding with fall-like temperatures, the reddening patches of berries reminded us that the days were getting shorter and summer was definitely over. The trail seemed to meander as it ascended several shallow benches (what I assume were terminal moraines). These were defeating at times, I admit - but easy. Half way up, we hit a camping area that contained 4 official sites spread out along the trail. There seemed to be many litigious warnings about bear safety (WAY more than in Yellowstone). After the final camp, it was clear we had only to climb one last bench to an obvious line of trees that ringed the lake. Indeed, we arrived at the lake at 12:15 (under 4 hours... pretty good for 8 miles). I can only blame that on our lack of packs, JC-induced fitness, and acclimatized states. We had the lake to ourselves for a full 15 minutes. Given that we had first pick of spots, we chose this HUGE granite peninsula, agreeing to lounge/nap until 2 p.m. Two things prohibited a relaxing time, though: first, this party sat RIGHT next to us. Second, BIG clouds and high wind rolled in, leaving us scrambling to stay warm. Thus, we agreed to head down early. Danny and I raced each other to the junction (although he will tell you that I wouldn't let him pass and he had to forcibly sneak by), all the while playing this game of only touching stones. As we descended, thunder sounded off the stony amphitheatres and Peter grew excited at the prospect of a drenching downpour. While I, too, would have liked that, Danny and Jessica were not interested in getting soaked. Although a few big raindrops fell, nothing more came of the large-sounding storm. The hike back to the boats felt long and monotonous. At the boat launch, we were, like, number 35 (the boat holds 30). I remember this beautiful Indian family, all the women wearing fancy dresses and shoes - how dirty we must have looked to them. Given that we done 2 hours earlier than expected, we went shopping. First - ice cream at the Jenny Lake store. Danny was looking for some poster-sized prints of the mountains (I originally typed "big Teton prints" but that sounded pornographic) and so we headed to park headquarters. Here, I talked with the rangers about Lake Solitude (MULTITUDE - they corrected) and boating options (canoe sources included Lake Jackson and Dornans). Although we favored Dornans because of more reasonable prices (\$35/day), we weren't completely wed to canoeing. With those facts, we left for Colter Village, purchasing a final round of groceries. Danny also found himself a cowboy hat, which he wore as much as possible during the remainder of the trip. Of course, Peter and I tried to put as much stuff as possible in the hat divot without him noticing (mostly, given his stature, while he was driving). After a pleasant dinner and many rounds of card games, we were still at a loss as to what to do for our final day. Indeed, we were sort of homesick. While Danny and I discussed horseback riding, Peter and Jessica wanted to go canoeing. Making matters worse, I got my period - adding to my anti-social and indecisive mood. Thus, we went to bed with no decision.

The next day, Jessica and I woke the un-amused men-folk at 8 a.m. because it was Labor Day weekend and we knew we better make up our minds or we'd doing nothing but mope all day. Given that horseback riding was too expensive, we raced over to Dornans and rented their last canoe. We were warned that there would be a short portage between String and Leigh Lakes where the channel was too rocky. Carrying things after JC: how bad could that be? After the Dornans folks lashed the boat to the car and we took off, Danny had to stop and re-tie everything because the ropes were too loose. The drive to the String Lake (near Jenny) was paved highway and it felt like we had this huge sail on the car. Although there were many

people at the launching beach, our trip never felt populated once we left the shore. Any team that can, after 9 stressful days together, ALL get into a single canoe and navigate for several hours without getting killed, killing one another, or tipping over must be remarkable. Of course, it was not always pretty. Peter and I were useless paddlers and frustrated Jessica and Danny to the point that we were banned. We screwed up the portage and took some wrong turn that landed us dumping the boat in this muddy, log-jammed bog. The wind, no matter what, was against us. Once reaching Leigh, we set our course for this little island on the far side of the lake. The skies were sunny during the row across the lively water, Mt. Moran - and its prominent vertical dike - towering to the left. The island shore where we pulled in for lunch looked like a tropical bay: iridescent blue water and whitish sand with fascinating rocks (a lot of granite and gneiss). For about an hour, we ate tuna sandwiches and lounged in the sun. After a little coaxing, Danny and Peter took a swim - although I (for one) learned a new term: free-balling. Being that Danny NEVER uses bawdy language, I found it amusing that he not only defined this concept but also did it in my presence while explaining it. Not even foul-mouthed JENN, who grew up with 2 brothers, had heard this term either - although she went on to marry a self-defined "free-ballin' Montanan." But I digress. The winds picked up after the guys retreated (a bad word, perhaps). We decided that the dark clouds were ominous and that, being on an island, was not wise. We jumped back in the boat and made a B-line across the farthest expanse of water. The wave crests were 2 feet and Jessica, screaming in front, was taking a lapful of water with each stroke. I had always been told to stay near the shore during storms and thus questioned our chosen route. Although we could barely hear one another, everyone knew we needed to keep perpendicular to the waves and haul ass. I can't say we rowed like a well-honed team (now that Peter and my services were demanded) - but we had more structure than we did setting out. The next problem was that - for the life of us - we could not decipher where the portage channel was... our maps turning to pulp in the water at our feet. We noticed what looked like stairs in the distance but, for some reason, decided that the portage couldn't involve stairs. Thus, we started paddling around this huge arm of land, searching for a channel. Eventually, it became obvious that the stairs WERE the portage point (had we not gotten lost during the portage in, this would have been obvious). We hauled the boats over an easy track during the "real" portage out. Given our higher approval rating, Peter and I rowed back to put-in. He and I did better but I still hung us up on a big rock and finally (after wearing only my fleece booties all day) had to get thigh-deep in the water to push us off. Fortunately, we did not hit any children in the swimming area near the beach put-in. We reloaded the canoe and started driving back. By now, the winds were so high that the canoe shifted 5 inches as we drove down the highway. AND -for anyone who thinks lashing a canoe is risk-free: after returning our canoe, we were merrily driving back to Moran junction when a canoe flew off the back of a canopied pick-up truck 3 cars in front of us. They were doing about 50 when the boat's back end flew off, hit the shoulder gravel, and started dragging alongside the truck. It actually took a moment for the drivers to stop because they didn't realize the boat was partly unlashd. Our good deed for the day - stopping to give them our heavy bear rope. Back at the cabin, our chicken breasts were swimming in marinade. While Peter and I caramelized elephant garlic, sweet onions, and peppers, Danny perfectly BBQ'd chicken and Jessica set the table. And then we watched the sunset. We slept well our last night, despite having to rise at 6 a.m. The sunrise was amazing, though, as was the light off the Tetons. We drove through Jackson Hole and struggled the tired car over Teton Pass. Overall, the drive back to Oregon was long but pleasant.



Epilogue 2004

In a previous epilogue, I concluded with a Roger-requested commentary about leadership - which I have since trimmed given that 9/11/01 happened a week after our return. Quoting my original reply to Roger: responsibility for life and safety are heavy things. And, as everyone seems to appreciate right now, life and safety are ephemeral and fleeting. Going into the field is a double-edged sword because it is innocent and romantic in the sense of its idyllic separateness from "real life." But it is not risk-free - emotionally or physically. We all like to go into the field as non-confrontational and self-less pacifists, to enjoy the beauty of nature, to trust everyone in whom we put our lives. But things do not always work out that way. As for my vow about not camping in grizzly country, I have broken this one several times (and will do so more, no doubt). My second vow, though, has definitely the best - taking more vacations where I am NOT in charge of leading. Taking pampered/planned trips, I am finding, improves my leadership on professional trips because I learn from watching other leaders and am usually more relaxed. Danny, however, has not been in charge of leading a big trip - and, unfortunately, I think JC only served to repel him from group activities even more (he went on to an engineering program in 2004). A year after our JC trip, though, I did send Danny back to JC with the Yellowstone Institute (a non-profit organization). Fully horse-supported, this trip was lead by a geology professor from Pacific Lutheran University (yes - they rode ALL the way, including down Broad Creek from Wapiti). When I saw the course, I knew Danny deserved to see JC again and not carry anything. As for my students: Peter, who will always say I took his backpacking virginity (twice actually), now works at a local pharmaceutical company. Jessica moved to Colorado, where she works for the Department of Health and finally married her long-time man.