

smaurer1@swarthmore.edu
franstier@comcast.net (note changes)
lnmaurer@comcast.net
ajmaurer@comcast.net

206 Benjamin West Ave
Swarthmore PA 19081-1421
December 31, 2003

I (Steve) am a happy camper. I am on Leave – for a full year at full pay, the full pay a reward for having been an administrator for 3 years. What a delight to concentrate all day, every day, on one project of my choosing. Well, it's not that perfect. I'm still president of the Swim Club, but even that ends on February 23. Last June I gave my last speech as Swarthmore Phi Beta Kappa Chapter President, handed over all my records as Math/Stat Placement Czar to a colleague, and handed over all my records as Associate Provost to the Provost. They were interesting jobs, but I am really free of them.

So finally, finally, I'm finishing the 3rd edition of DAM, my text *Discrete Algorithmic Mathematics* with Anthony Ralston. It's been 6 years since we agreed to do a major revision, and 3 years after we hoped to be done. Most of the delays have been my fault – since I don't work well on a project like this with interruptions. Also, Tony and I are both stubborn and have strong opinions about writing, which often clash. We've kept the internet lines between Swarthmore and London quite busy with a very slowly converging iteration process. But as I write, only the Preface and the Epilogue have not reached convergence – everything in between has been shipped to the copyeditor. I feel all the nice global qualities of the original text have been preserved while a zillion small to middling things have been much improved. We still need a few more months for fussy details – front and back matter and formatting software issues – but I see the light at the end of the tunnel.

I'm a happy camper for several other reasons, which may not seem so big but loom large for me. I finally won my battle with scrap paper. I've always used the back sides of excess printouts for scratch work, but I never used them up fast enough. As of September I must have had stacks totaling well over a foot high, some sheets 10 years old. But then I realized: I could use this paper for printing working drafts from my book. Now the scrap is almost gone and I feel *much* better.

And this summer my study was repainted. It had been light yellow since its days as a nursery. But now it's the room I always wanted – walls alternately bright orange and brown. The most fun of all is to stare at the corners, where orange, brown, and the honey white ceiling colors come together.

I am a happy camper. We made the final payment on our 20-year mortgage last July.

But I am also not a happy camper. On Saturday 12/19 I was sitting at a red light in our 3rd car, my beloved 1989 Plymouth Colt, when two cars crashed on the road in front of me, and one ricocheted into mine, doing enough damage around the left front wheel well that I had to be towed. And just the other day I found out that repairing it would cost over 3 times as much as its book value, which is all that

insurance will pay. So I will have to buy a new car. Bad timing, since in 9 months Leon goes off to college and we won't need 3 cars. Teaches me to drive around in Christmas shopping traffic when I don't have to! When I said good-bye to my 1969 Rambler in the early 1980s, I thought I would never love a car so much again, but I was wrong. I sometimes suggest this as an admonition to Fran :)

Speaking of others, this has been a pretty good year for our family: a great year for Leon, a pretty good year for Aaron, and a mixed year for Fran, though a good one for the two of us together. But I'll let Fran and Leon talk about all that. I wish Aaron would write something too, but he continues to demur.

We had a busy and interesting summer. My June was taken up preparing all those job handoffs, getting kids all their summer medical forms and medications, setting up College visits for Leon, finalizing all the reservations for our vacation in August, going to a CorePlus meeting in Kalamazoo, getting another wisdom tooth removed, dealing with various thorny issues for the Swim Club, getting cars inspected, taking Aaron to a CTY program (the Hopkins Center for Talented Youth) in Maryland, and finally, on July 4, flying off to MathPath in South Dakota.

I described this middle-schooler program in the 2002 annual, and expressed some anxiety that it might be too hung up on how precocious the kids are. In fact I liked it a lot. Even the town (Spearfish) was a surprisingly lovely place. I am going back to MathPath in 2004; this time it will be in Bristol, Rhode Island (Narragansett Bay).

Then in late August we went southwest to the Four Corners Region. This was our first family vacation in 2 years (recall Fran and I went to Wales in summer 2002 ohne Kinder) and maybe our last big family trip. It's gotten hard to find things we all like to do. Kids have vetoed art museums, so Europe is out. Anyway, this trip had something for everybody: Indian culture; a variety of foods and B&Bs; mountain and desert scenery; boats and trains; atomic museums. I highly recommend the atomic history and science museums in Albuquerque and Los Alamos. In Los Alamos we visited a high school friend I had not seen in 35 years, who is a physicist at the Labs and was able to get us into his own lab despite the heightened security measures. Later in the trip we went to the North Rim of the Grand Canyon, far less crowded than the South. I continue to think the Grand Canyon is overrated – I still prefer mountains to canyons, but certainly the GC is worth a visit.

I always like to mention a few special highlights of trips, especially ones that are not well known. Here they are: the 4-mile circular hike up and down the south rim of Chaco Canyon (the headquarters of the ancient Puebloans; now a Nation Park that isn't crowded because you have to drive 20

miles on a dirt road from nowhere to get there); the first view of Ship Rock approaching from Farmington MN; the desolation of most of the Navajo lands; Spider Rock in the southeast corner of Canyon to Chelly; the descent into Page on Arizona Rt 98 past the immense coal-burning Navajo Power Plant; private jeep rides into the mountains north of Silverton CO and along the floor of the north branch of Canyon de Chelly with a very forthright Navajo guide (with a Dutch last name – some ancestor married one of Kit Carson's soldiers, who may have felt guilty about what the army had done).

Heading back to Albuquerque the last day on I-40, we sometimes got off onto "historic Route 66" and looked for old 20th century buildings (motels, gas stations, diners). All the signs are required to say "historic" because officially US 66 no longer exists: the route was decommissioned. How this could be, and the whole history and organization of the original US route system, is something I now know a lot about (in case you want to ask). I read up on it in obscure books in the College library after another road trip in early August, just with Leon, where we spent a fair amount of time in Indiana on a much older famous road, US 40, which has not been decommissioned. Though it only became US 40 in the 1920s, in fact it is the National Road, the first federal highway, dating from the early 1800s.

One more work report, about being Associate Provost for Technology. The job was a mixed success – recall that the position was not renewed after I left it – but I finished on a high note. One of my assignments from the beginning was to develop an Intellectual Property Policy for the College. See our 2000 Annual for a discussion of the issues involved.

Well, last spring my major project was getting this finished. My students think it's a lot of work if they have to write a paper two or three times. Well, I had to write this policy 15 times – once for each week my IP committee met last Spring, once for a lawyers' review, and a few more times at the end. Each week we took what I had revised from last week and tried to "break it" – imagine situations it didn't treat well. The result was a document I am very proud of – well organized, covering lots of situations, but having considerable flexibility, and developing several useful principles that I have not seen in the IP policies of other institutions. And I got it through the faculty (including administrators) by unanimous vote, after just two faculty meetings!

I close my part with two stories about Swarthmore students.

A few years ago, my top student in Honors Linear Algebra was a wonderful sophomore from Beijing. During his senior year I noticed he was always walking around wearing a Chinese Red Army cap, with a bright red star in front. One day I asked him if he was making a political statement, since I didn't think the Red Army was very popular with Chinese students in America. Oh no, he said, he was making a fashion statement. Well, I answered, do they allow you to

buy Red Army caps in China for that purpose? Oh, I didn't get it in China, he said. Where, I asked. Well, I spent last year at the Budapest Seminars in Mathematics (a very good program in Hungary for top North American math college students), and one weekend I went to Vienna. I found this cap on sale from a street vendor.

Poor Mao must be turning over in his grave, his great symbols turned into fashion statements for Chinese youth studying in the US and traveling in Europe.

Second story. A foreign-service friend of Fran wrote us last spring that the daughter of a friend in Namibia would be attending Swarthmore in the fall. The last name was a hyphenated German name, say, Fhröling-Mahler. Namibia! Well, the name made possible sense, since Namibia had once been German Southwest Africa. The kid's first name sounded vaguely Spanish, let's say it was Emlita, but maybe it was a Namibian name. Swarthmore has had many students from South Africa (mostly Black) but never to my knowledge one from Namibia. So when she arrived, I contacted her by email and invited her to dinner.

She was a charming guest, but her background was not at all what I supposed. First of all, she is American, sort of. She used to live near DC, but her family decided they could do more good in an underdeveloped country and moved. The hyphenated German name? Her Father *is* German, and her Mother is the daughter of German-Jewish holocaust survivors. So at one point I asked what passport she had. Oh, she said, I have three. Three? Yes, German, American, and Guatemalan. Guatemalan? Yes, I am adopted.

My point? I meet more and more students at Swarthmore who speak many languages, have lived all sorts of places, and are at home in many cultures. Such people will be the leaders in our now highly connected world. I hope "ordinary" Americans, like our own kids, can compete.

And what about my own future? Well, I am department chair upon return from Leave, but after that it's an open question, to which I, and these annuals, will have to return anon.

Oh, you will find recent pictures of all of us at <http://www.Swarthmore.edu/NatSci/smaurer1/family>

(Fran) Each year, as I sit down to write this, I print out the year's diaries (in two Word files, titled Jan_xx and Jul_xx) and read through them, putting post-its by the funny bits. 2003 journal started with an account of Leon's getting his drivers license January 2nd, and Aaron's end-of-vacation woes:

Thursday, Aaron was a zombie, couldn't wake up, had a coke and cookies & cereal bar for breakfast, and missed his bus. Adriano was driving Leon to school and they drove past

him and Leon didn't ask Adj to stop - because he says Aaron is so annoying. Meanwhile, A had a portfolio due on Friday that he told us nothing about during vacation, and didn't start till Thursday after dinner (SIGH) - he was up until around midnight. He says the year is clearly destined to be NO GOOD.

My early 2003 entries were full of motherly worries about Leon driving:

I keep brooding about Leon driving Aaron on this Boy Scout skiing trip (especially because snow is predicted for Sunday). Driver fatalities are 8/1,000 drivers per 100,000,000 miles driving for 16-year-old drivers (half that for 17 year olds). OK, factor in a second passenger and other horrendous outcomes like paralysis and brain damage, maybe 100 / 1,000 / 100,000,000 and what is it, maybe 300 miles. And maybe not all 16 year olds are the same; L's not a reckless kid; uses seat belts, isn't abusing any substance we know about. So maybe that cuts his risk further...

Aaron's now as tall as Steve. One evening a month ago, I was trying to persuade him to save his computer game and go to bed, and he got up, picked me up, carried me out into the hall, closed the door, and resumed his game. For years, I spent 15 min each morning rousing Aaron out of bed. Now that Leon drives them both to school. Aaron gets himself up (often early, to finish left-over homework), and the two set off together.

He spends inordinate amounts of time on WarHammer (2" high plastic soldiers of various tribes and ranks) and loves careening around in Grand Theft Auto II listening to VCPR (Vice City Public Radio - complete with membership drives). At dinner one night, I was saying (as I often do) that I get tired at work by mid-afternoon. He said that when he needs a break he opens up one of his games and kills something, and then he feels much better. Suggested I do the same.

He spent the summer shuttling among Boy Scout camp and the local YMCA camp and a cryptology course (run by CTY - Center for Talented Youth). I nagged him about sunscreen at the start of the summer, and he said OF COURSE he always used it. Hadn't he sailed around all day last year with no sunscreen and his back turned bright red and kids kept coming up to poke him and watch him wince, and he had to go to the nurse for a week? [The thing is, he didn't tell any of this to us last summer].

He liked the cryptology course (and his teacher praised his work), but commented at the time he thought CTY's rules were too strict. He didn't tell us until months later that he'd almost been thrown out for reading too late in his room and

crossing a street by himself (they had to always be accompanied by a staff member)...

We can never persuade him to take enough clothing (especially shoes) on the troop's monthly Boy Scout camp-outs. By the end of the May canoe trip, he was padding around in socks and plastic bags. He improvised a sandal out of wood and duct tape to get him through camp in August. I'm always relieved to see him and Leon return, filthy and smelling of smoke and covered with bug bites.

His freshman high school courses are much more engaging than Middle School. He's taking pre-calculus and gets along with the teacher better than Leon did (so he's on track to take AP calculus in 10th grade). His English teacher is smart and energetic - and hailed me one day in the ville to relate how indignant Aaron was that a period belongs inside quotation marks at the end of a sentence (Steve was delighted - he'd fought with publishers over that very point). He came home one day announcing in triumph that he finally knows what to do with a semicolon, and he reliably discerns affect from effect. He loves the Odyssey and the Greek mythology they learned as background.

He continues at the Gratz program. The Torah teacher is wonderful and Aaron loves his jokes. The current events/traditions teacher is very hard-line pro-Sharon. Aaron likes to debate him. Before we left for parents' night, Aaron joked that I'd throttle Mr. X, and they'd need to call for the Jaws of Life to get my hands off the teacher's neck.

Leon's year has mostly been very good, with minor exceptions. (Early in the year, he was trying to do soldering that would raise his computer's processor speed, but shorted out the processor and logic board.) There are 5 computers (some work, some don't) in his bedroom, among the clothes and papers, and another 3-4 out in the shed.

He continued as president of the High School Robotics team, which was part of the winning coalition in the Philadelphia regionals, and placed 8th out of 78 in their division of the nationals. He was accepted to a program at the college, where he worked 6 weeks for a physics professor, learning more physics, soldering and helping upgrade the lab's Mac operating system and experimental interface. He'd come home in the evening, happily talking about what he'd done each day. He took a second-level computer science course at the college this fall - he joked that he and the other high school student participated far more than the college students - at 9:40AM, they were still asleep.

He volunteered regularly at the Habitat for Humanity build our congregation helped sponsor - and brought his friends. They cut up old oil tanks and hauled refuse and framed and mixed concrete. For his Eagle Project, he labored for weeks with his troop clearing out an old ornamental garden some Scott Paper executive had built around 1910 and later donated to the college. They cut vines and trees, and cleared out garbage, carrying the refuse _ mile to the nearest road for

disposal. All of us got bad poison ivy except Steve, who wore long pants and sleeves (in the August heat & humidity).

SATs and APs and college trips took a lot of time. We all laughed over a New Yorker cartoon showing a gravestone: Here lies Frederick Johnson: Verbal 680, Math 720.

Leon wanted a small place with engineering and ROTC. I took him to Lafayette and Lehigh. We argued about interview dress – I implored him to wear a blazer and button down shirt (“Paris is worth a mass”). Steve replied blazers were pretentious and Leon’s t-shirts were expressive. Steve and Leon drove out west to Carnegie Mellon and Rose Hulman, and up north to Brown, Union, and Dartmouth (sans blazer).

Steve worked with him on the SAT I’s (he wouldn’t do tutoring). I worked with him on the writing achievement (he finally caught on to subject-verb agreement, and raised his score 110 points). Leon decided to apply Early Decision to Dartmouth.

Steve maintains he worried very little [claiming he does know a lot about this business, having headed the admissions oversight committee at Swarthmore several times. He figured that Leon had a 50-50 chance at Dartmouth (in general, 20% are admitted) but he figured Leon would get a good education wherever he went. Leon had already been admitted at Rose Hulman and might also get admitted to Harvey Mudd, his 2nd choice.] I mused endlessly on Leon’s SAT Is and IIs and APs and GPAs, worrying about how he’d measure up. I worried the essay (on how Heinlein had influenced his life) was too boyish.

Leon found he’d been admitted to Dartmouth a couple of weeks ago. He was surprised how quickly classmates and teachers seemed to learn about it – by the end of the school day, he expected to come home, turn on CNN, and see his name in a crawl at the bottom of the screen.

Steve was pleased, in a quiet way. I went into a total flutter of delight. I emailed the world; I jumped up and down at Kiddush after services that Saturday exclaiming “he got in! he got in!” when another Mom finally asked. I’d always thought school decals on back car windows were tacky – but I ordered one. At work, I’d gaze at a webcam picture of the campus, watching the cars move jerkily by. I got excited spotting a “Vox clamantis” bumper sticker on the NJ turnpike.

The morning after Leon heard from Dartmouth, as I was running, I was remembering how we worried about his epilepsy when he was 5, and worried whether he could cope with a mainstream Kindergarten. Reading was hard for him, and all though the summer after first grade we read together, haltingly, as I doled out bribes for finishing each book. Writing was hard for him, and he worked with a tutor starting in 4th grade. We worried whether Middle School would overwhelm him.

And all of a sudden, it seemed, he got tall (and kids stopped picking on him) and his schoolwork took on its own steam, and he acquired all this general knowledge that we hadn’t imparted. I keep trying to imagine what the house will be like when he’s left. Sunrise, sunset. It always seemed a goopy song, and now I can’t get it out of my head.

Four Corners: As we drove around, I kept reading aloud from the Roadside Geology series (one for each state), and trying to relate the scenery to the text. Chaco Canyon was surprisingly dry and desolate – the current view is that few people lived there; it was a sort of Anasazi religious convention center. The interpretive material had a lot of vague talk about ceremonial use and the Chacoan World View. The kids hike far faster than either Steve or me – they kept joking about slow, old people.

Grand Canyon was breathtaking – I kept thinking of a line out of Psalm 92 “How vast are your works, oh Lord” but couldn’t remember the Hebrew for the last half. The North Rim is a couple thousand feet higher than the south; cooler, with pines everywhere. Every morning, visitors would gather on silently on Bright Angel lookout to watch the sun come up. I was continually anxious someone would mis-step and fall to his death (a few tourists do each year), and the kids teased me.

The four of us hiked into the canyon (only downside – the trails are also used by mules & horses, so parts really stink). I turned back after a couple of miles and 1,500’ descent (Supai tunnel) and headed for a laundromat; Steve and the kids continued to Roaring Springs, 5 miles of trail and 3,000’ descent. Once our laundry was done, I waited by the trailhead, reading. Leon came running out, alleging that Steve had had a heart attack, but he looked too happy to be convincing. They’d had a great time – Leon setting the pace; Aaron mostly able to keep up with Leon, and Steve laboring along behind.

I’d visited Canyon de Chelly twice as a grad student, and spent a year analyzing plant material from a site there. The canyon has sheer walls 1,000’ high in places, made of Navajo Sandstone – a rich, dark brown, with intricate cross-bedding lines. The canyon is full of pictographs and petroglyphs and Anasazi pueblos tucked into the caves, and tiny granaries perched on ledges. The canyon walls glowed in the late afternoon sun.

As we ate dinner at the local Holiday Inn, Leon asked Aaron to stand up and sit down hard. When Aaron complied, Leon bounced up, as if the seat cushion were filled with liquid. They bounced up and down for quite a while, giggling.

Me: Synagogue continues about the same. We’ve started to package food drives into Bar Mitzvah-project sized pieces, and it’s gotten a lot of new families involved in outreach. Our synagogue website has pictures of proud 12-year-olds standing next to piles of school supplies (for kids in Chester),

or a carload of frozen turkeys, or a cart-full of pre-Passover leavened-food donations.

I continue reading Torah, but am always having to get up at 6 AM on Saturday to learn the last few sentences. Aaron's always scolding me for sleeping too little.

It's been a frazzled year at work. It's still satisfying when I can get the software to behave or understand why the financial results are doing what they do (and convince others my explanation is right). But every month or so there are weeks with nights working until 7-8 PM (the last few days, Dec 26th-29th have been like that). I keep thinking of the dwindling number of dinners left with all four of us, and I hate the pressure to stay.

Closing: I love watching Leon and Aaron together, laughing as the slow, old people try to catch up with them on hikes, or mocking my attempts to get them to wear jackets or gloves in the winter. They seem happy to be together, in league with each other.

Wishing you a year surrounded by the people you love, when all the wishes of your heart will be fulfilled for good.

(Leon) Robotics: Last years game consisted of moving and stacking large rubbermaid cartons. There were two opposing teams of two and points were scored by moving these crates into a scoring zone and by having your robot on the top of a ramp and the end of the game. In addition, stacks of crates acted as a multiplier to the number of crates in your zone (so if there was a stack 5 boxes high and 20 other boxes in a scoring zone, that would be 100 points). The game also featured a 15 second autonomous mode where the robot had to work without player input (this was a first for the competition). With this in mind, we produced a robot that could stack fairly well and had autonomous code that would try to move crates into our zone by doing a predetermined dance (go forward 3 seconds, turn left 2 seconds, go forward 5 seconds, etc.). The code worked like a charm, although we were often beaten to the boxes by faster robots. While the rules sounded as if they would produce an interesting game, matches almost always degraded into a pushing match because it's much easier to knock over a stack than to build a stack. However, we faired well at the Annapolis regional with 11th seed and were on the winning alliance for the Philadelphia regional (it was about time). So, we went down to Houston for the National event (after much last minute fund raising). Houston was not nearly as cool as Disney world; the 6 flags next to the Reliant Park and Astrodome (where we competed and had our pit) was horrible, and center city Houston (where our hotel was) was deserted at night so we didn't have much choice in dinner locations or entertainment. However, the Hard Rock Cafe had some good hamburgers and there was a joint which served cheap ribs of texan proportions, so I had no complaints. At any rate, we seeded 13th in our division of ~70 and were knocked out of the first round of the finals but had a good time anyway. This year we're expecting more autonomous time as we can now

program in C rather than a watered-down version of BASIC which did not even have loops or functions! However, we're still looking for money and the club's politics have gotten nasty, so it'll be an interesting year.

College: This occupied much of my time this past year, but I managed to spend less time and effort than many my age. For those looking to do the same, I'll explain my process. First, I set some limiters: small and with engineering. That made a short list: Harvey Mudd, Rose-Hulman, Bucknell, Lafayette, Union, and Dartmouth (Swarthmore would count, but it was a little close to home). Also in the running (but not meeting the criteria) were Carnegie Mellon and University of Chicago (mostly because it had an essay option where I could talk about food). Of these, I visited several, and here are the ones that impressed me (in ascending order):

Union: The campus is amazing; it was the best looking of the ones that I visited. Though not as techie as other places, it has implemented a one-card system. Also their house system seems interesting, and they had the best food of any that I visited (and lord knows, food is important). In addition, you can access the 30-mile long Mohawk-Hudson Bikeway (part of the 230 mile long New York State Canalway Trail System) just off the campus.

Rose-Hulman: A very techie place where laptops are mandatory and used in the classroom. I sat in on a calculus class for people wanting to get their requirement done over the summer, and the instructor was making use of maple and most people followed along on their computers, although one person was playing Quake. The food was good (they supposedly have excellent omelets if you can manages to make breakfast) and there is a bike path running right behind the campus that goes into town and out to US 40 (but will hopefully be extended in both directions). However, the terrain is amazingly flat and Terre Haute is not on high ground (the French pulled a fast one on those Indianians). Also, Terre Haute is run down, but it has a decent german restaurant (not as good as my stay in Bavaria, and the drinking age is too high, but it serves sauerbraten, so what the heck). The school seems to have a good sense of humor about their town; I saw a "Ski Terre Haute" poster commented that Terre Haute was "located conveniently between the great ski areas of Stowe, Vermont and Vail, Colorado" and had a picture of a person skiing in from of a barn (presumably near Terre Haute) that was rotate to make it look as though there was actually an elevation change.

Dartmouth: A surprisingly techie place. In addition to a campus wide wireless network and one card system (where I can swipe a card in a soda machine and bill it to my parents...) they are now experimenting with free voice over IP. I'd been through Hanover on both of my previous bike trips, so I knew what to expect. They have an active cycling club and team that's part of their amazing outing club, and while there is no bike path to speak of, there are actual hills. The one thing that disappointed me was the food. It was ok, but it had been hyped up by students as Dartmouth runs their

own food service rather than farming it out. Additional perks for me are that it is far from major cities (which I dislike) and is in the state chosen by the Free State Project.

Anyhow, Rose-Hulman had rolling admissions, so I formulated a complete strategy. As my top three choices (in ascending order) were Rose-Hulman, Harvey Mudd, and Dartmouth, I would apply to Rose-Hulman and early decision to Dartmouth. If Rose-Hulman accepted me, I would apply to Harvey Mudd only if Dartmouth rejected me. If Rose-Hulman rejected me I'd apply to several other places. I was accepted by Rose-Hulman, so I knew that I had at most one more application to write, but life got easier and I was accepted by Dartmouth. I thereby missed most of the fuss of college applications, much to my family's relief.

Rant: if you'd like one of my stupid rants, a relatively new one is up on my web site <http://www.geocities.com/dlenmn/>.

Good books read since last year:

- The Light of Other Days, Arthur C. Clarke and Stephen Baxter
- The Hot Zone, Richard Preston
- Catch 22, Joseph Heller
- Micromotives and Macrobehaviour, Thomas C. Schelling
- God Bless You, Mr. Rosewater, Kurt Vonnegut

Good movies:

- The Good, the Bad, and the Ugly, Ennio Morricone's music alone makes this worth watching
- The Godfather
- Yojimbo