

500 Special Relationships: Jim as a Mentor to Faculty and Students

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ABSTRACT

There are hundreds of us in academia and industry who consider ourselves FoJ: Friends of Jim. Jim invested so deeply and so uniquely in every one of us that we each felt we must be “the chosen one.” And we were: Jim had so much to give that he was able to choose hundreds of us, shaping our careers and our lives.

1. INTRODUCTION

Much of Jim Gray’s research was motivated by the goal of *scalability*. The miracle is that in addition to blazing the trail towards highly concurrent database systems able to service thousands of transactions per second, Jim managed to achieve extraordinary scale in what is essentially a non-scalable consulting business: the investment of his personal time and energy into shaping the careers and lives of many hundreds of colleagues in academia and industry.

It is a deep honor to have been invited to represent Jim’s academic colleagues in this volume. I will draw upon many of their recollections in painting a picture of our friend.

2. MY OWN INTERSECTIONS WITH JIM

My own intersections with Jim over the past 25 years are a bit unusual because while so many of Jim’s friends are from the SIGMOD community, I am not.

I first got to know Jim when I was a young faculty member studying computer systems and computer system performance, and he was at Tandem, a dozen years into his career. Jim involved me in the famous Anon., et al., paper [1] described elsewhere in this volume by David DeWitt. We interacted frequently during Jim’s dozen years at Microsoft Research; I was a member of the four-person MSR Technical Advisory Board throughout that period. We co-conspired on national leadership issues during our respective terms on the President’s Information Technology Advisory Committee. Jim provided extraordinary guidance to me, my students, and our colleagues in the ocean sciences community as we tackled cyber-infrastructure issues for the NSF Ocean Observatories Initiative. Jim and Donna endowed

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Tribute to Honor Jim Gray, May 31, 2008, Berkeley, CA, USA.

nearly \$500,000 in undergraduate scholarships at the University of Washington, because Jim always sought to “give back,” and he was impressed by what he saw in videos of our “capstone design courses.”

I will tell the story of Jim as a mentor through the lens of my own experiences, and the experiences relayed to me by others.

3. A TEXTBOOK ON MENTORING

So many things are so special about Jim as a mentor. None of them are rocket science. It’s that he did them all, and did them all so consistently and so well: making time; simply listening; inspiring self-confidence; lighting the way; nurturing and pushing; following the muse; connecting good people and good ideas without boundaries; promoting the young; sharing knowledge selflessly; displaying professional integrity; advocating for the field; keeping things in perspective; being a friend. Let’s briefly look at each of these.

3.1 Making Time

Time is the most precious gift that one can give or receive. James Hamilton, in his tribute to Jim at a Microsoft event in January [2], tells a story that is familiar to each of us: “Jim came over, sat down beside me, and said ‘How are you doing, James Hamilton?’ This is signature Jim. I’ll bet nearly everyone he knows has had one of those visits during the course of a conference. He drops by, sits down, matches eyes, and you have 110% of his attention for the next 15 to 20 minutes.”

Even beginning graduate students benefited from this attention. Remzi Arpaci-Dusseau recalls, “What struck me was Jim’s insistence on scheduling time with our graduate students. He would sit in their offices, chat about their work, give lots of advice, and generally do for them what he had done so long ago for me: make them feel like they (and the problems they were working on) were important. What better gift than that?”

3.2 Simply Listening

Listening is a difficult art to master, and Jim was *the* master. Remzi Arpaci-Dusseau says, “Even in those first days when I was just a young (and relatively clueless) graduate student, Jim took every idea I mentioned seriously, encouraged me to continue with my work while giving me new ideas and directions, and did something that is all too rare: he simply listened when I spoke, and treated me as a peer.”

Natassa Anastasia recalls, “I remember an event at Bill Gates’s house where all the interns were gathered for dinner; Jim would walk up to all the first-year graduate student interns and say ‘Hi,

my name is Jim Gray. What are you working on? Are you having fun?" ... He made everyone feel so comfortable around him, so at home. I spent my first years at CMU going through lots of ups and downs – the usual assistant professor trouble. I often needed to talk to him, not so much to ask him what to do, but just because he offered me the high-bandwidth communication you only get when people relate to your problems because they really *listen* ... There was not a single time he said he was too busy to talk to me; I would pick up the phone and call him and tell him all that I was doing and he was just happy to listen and, when asked, provide help."

3.3 Inspiring Self-Confidence

Alfred Spector writes: "Jim was my most influential graduate school advisor. I was hugely influenced by his work. Even more importantly, I was influenced by the enormous confidence he showed in me. He somehow managed to convey that he thought I was bright, articulate, and would make significant contributions."

3.4 Lighting the Way

Whether advising students, supporting young faculty, or collaborating with established researchers, Jim "suggested" rather than "prescribing." Johannes Gehrke writes, "Jim was not generous in a controlling way – the instructions accompanying his research grant awards were 'do good science.'" James Hamilton observes, "Jim's style is not to correct or redirect. Yet, after each conversation, I've typically decided to do something differently. It just somehow becomes clear." Alex Szalay adds, "Jim was incredibly patient and supportive and willing to listen – much more so than anyone else I have ever known. He would not say 'this is what you must do' – he would gently light the way, so that people would find the path themselves."

3.5 Nurturing and Pushing

Jim knew that different career stages and different life stages required different styles of mentoring. Joe Hellerstein writes: "By 1994 when I met him, Jim's role as a leader of the field was long cemented. I saw him give a talk that year at Wisconsin, and as an ambitious grad student I raised a couple technical questions. He put my name in the acknowledgments of the subsequent paper, which eventually became a classic in the field. That was vintage Jim: always taking time to promote the next crop of young folks while chugging along on his own scientific agenda. I'll say that when I arrived at Berkeley, Jim's relationship with me changed, and it took me a while to figure it out. He seemed to become more antagonistic – questioning my direction, grilling my students and generally pushing back on our technical agenda. I've seen this enough times with other young folks now to realize it was a pattern in his mentorship: he liked to gently raise promising folks up into the big leagues, and then switch tactics and turn up the heat. I now realize it was a mark of respect on his part at my having reached the level where I deserved to be pushed, not protected ... Very few folks in academia are as thoughtful about mentorship over the course of a career."

3.6 Following the Muse

In his 2002 SIGMOD interview [3] Jim said "I don't believe in an afterlife, so I think this is it, and I'm trying to spend my time as best I can ... So I have, in fact, only worked on things that I thought could really be significant ... and I always tried to be in a situation where I could quit the job I was doing that very day if the need came. I think that was liberating. Of course, it made me a manager's nightmare."

Jim inspired others to follow their muse. Jignesh Patel remembers: "I decided that I really wanted to do something that had a long-term impact on society. I decided I was going to jump into the life sciences. I asked a number of senior faculty in my department, and every single one of them told me that I was making a foolish move – that I should stay with my strengths and keep publishing in my established area ... I started talking to Jim about this new direction, and he immediately saw the potential and was enthusiastically in favor of this move. Every time I was in the Bay Area, I would send Jim an email, and regardless of how busy he was, he would make time to sit down and chat with me. I was deeply touched by his passion for really understanding and genuinely pushing for the use of technology in helping the sciences. Whenever I felt I had gotten myself into a deep hole, it was Jim's support and passion that was a real source of inspiration. In every paper I write on biological data management, I ask myself 'What would Jim think of this work?'"

3.7 Connecting Good People and Good Ideas Without Boundaries

Jim was an extraordinary connector. James Hamilton put it beautifully [2]: "Anyone can talk to Jim, and an astonishing number frequently do. And because his review comments are so good, and he's so widely respected, a mammoth amount is sent his way. He receives early papers and important new results across a breadth of fields from computer architecture, operating system design, networking, databases, transaction processing, astronomy, and particle physics. The most interesting work he comes across is forwarded widely. He ignores company bounds, international bounds, bounds of seniority, and simply routes people and useful data together. Jim effectively is a routing nexus where new ideas and really interesting results are distributed more broadly."

3.8 Promoting the Young

Jim role as a "connector" was particularly focused on drawing attention to good work by young researchers. "Even as a busy lab director," Erik Riedel notes, "Jim managed to take the time to respond to students, to connect new researchers to the established members of the community ... he understood that a query from a student or new engineer can be just as important long-term as a message from a corporate vice president." Yannis Ioannidis adds "Jim became my best supporter and advocate. He kept talking about my work to others."

3.9 Sharing Knowledge Selflessly

Some people hoard what they know – "knowledge as power." Jim shares with all. Mike Carey provides an example: "When I was thinking of taking the plunge from IBM (safe) to Propel (scary startup), the job I was considering sounded like something Jim would have been much better qualified for than I. On a whim, I sent Jim a note saying something like 'Hey, I'm considering a move from IBM to a job that you should be taking, not me – I don't feel like I know enough to do it' (and I explained a bit about the job). Jim replied 'Come visit me at my SF lab and I'll tell you what you need to know about that.' I did – and he did. He gave up 2 or 3 hours of 'free consulting' to tutor me – for no reason other than always being there to support younger folks in his field."

3.10 Displaying Professional Integrity

Elsewhere in this volume, David DeWitt describes Jim's masterminding of the 24-author Anon., et al., paper "A Measure of Transaction Processing Power" [1], which led to the establishment of the Transaction Processing Council and established the closest thing possible to a level playing field for comparing transaction processing systems. The "Anon., et al." authorship was not merely humorous – it provided valuable air cover for the 14 authors employed by vendors (David and I were among the 8 academic authors), few of whose employers would have been pleased by this activity. Only Jim had the professional integrity – and the *reputation* for professional integrity – to lead such an effort.

3.11 Advocating for the Field

Jim was a tireless advocate for investment in research. In his 2002 interview in *SIGMOD Record* [3] he said "I go to Washington because I believe that a dollar invested in scientific research gets a payback of ten dollars to society." His 1998 Turing Award lecture [4] is remarkable for laying out a vision for our field, rather than focusing on Jim's own contributions. A good long-range research goal, he said, should be understandable, challenging, useful, testable, and achievable through intermediate milestones. He proposed a dozen examples: four variants of the Turing test (human imitation, hearing, speech, and object recognition); a personal and a world Memex; telepresence; systems that are trouble-free, secure, always up, and scalable; and an automatic programmer. This inspirational lecture is must reading for those who have not done so, and must re-reading for those who have.

3.12 Keeping Things in Perspective

I've served on the Technical Advisory Board for Microsoft Research since its inception in 1991. MSR boasts many extraordinary achievements, but like any organization or individual, it has its infuriating moments. At one point I was blowing off steam at Jim regarding a particular aspect of MSR's university relations. Jim looked at me calmly and said "Think of it like teenage sex. It's new to them. They're incredibly clumsy at it. They don't want to take advice. But trust me – they'll figure it out."

3.13 Being a Friend

Alfred Spector writes: "Jim and I became personal friends over the many years. Many sailing trips, visits to his boat, visits to his and Donna's lovely home on Telegraph Hill. Rhonda, my kids and I will always remember our visit with Jim and Donna in August of 2006 when Jim showed his family-oriented, friendly, gregarious side. His encouragement and leadership inspired even my kids to do some things they hadn't done before, to know a little more about the world, and to be a bit bolder."

4. THE ROAD AHEAD

So what are we to do, faced with Jim's disappearance – we Friends of Jim who were the chosen ones?

Jim's extraordinary mentoring capacity can't be matched – in the words of Maria Nieto-Santisteban, "Encouraging, persistent, indefatigable, fun, wise, great listener, helpful, insightful, thankful, generous, caring, a friend ... determined to help me finish my thesis ... I still owe him that ... I promise I will!"

However, we can achieve scalability the old fashioned way. We each can commit to mentor others, as Jim mentored us, to the greatest extent of our abilities.

Natassa Anastasia says: "Jim was my role model, the person I want to be, the person who brightens people's minds with his smart comments, his genuine laughter, his openness and his availability to help people. Jim singlehandedly shaped my advising style: I commit to my students to help them in any way that I can, like Jim did for so many people, because I too believe that everyone has something great to offer."

Hanan Samet adds: "My fondest memory of Jim is his unstinting generosity to other researchers. He made us all believe that there will always be someone out there who will look at our work and provide us the necessary feedback. He was a giant who will be missed, although the breadth of his wingspan ensures that the shadow he cast over all of us will always be there."

Go forth and multiply!

5. REFERENCES

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