

In Memoriam

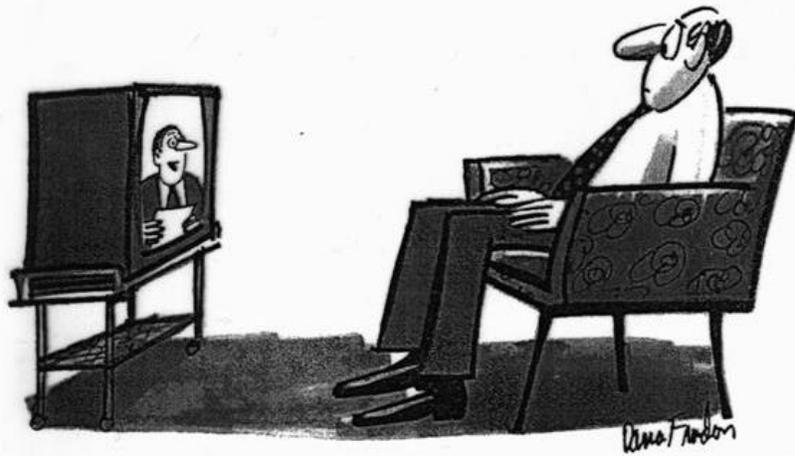
David A. Freedman

1938–2008

Order of Program

Joshua Freedman
John Rice
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Reception



*"Meaningless statistics were up one-point-five per cent
this month over last month."*

David Freedman Memorial

December 2, 2008; Berkeley, California

Joshua Freedman (son of David Freedman and Shanna Helen (Wittenberg) Swan)

Morris Fish (read by Joshua Freedman)

Only hours before he died, David bade me farewell in these terms:

“Morris, you are my oldest friend, and it is hard to write, but my time is done. You have something much tougher, I know you will come through it.

All my best wishes, David.”

A master of economy of language, David evoked in these few words the significance for us both of our close and warm friendship over more than half a century. David took me under his wing during my freshman year at McGill in the fall of 1955.

No one could ignore his stunning intellect, quick wit or profound understanding of all things that matter. Of that, I was for all these years—and will forever remain—a grateful beneficiary.

Nor could anyone who knew David ignore his sophisticated appreciation of life’s pleasures, esthetic and culinary. No one could better describe an exceptional meal or particularly deserving snifter of cognac or cup of coffee.

But it was the unconditional nature of his friendship that I appreciated most. It remained constant and manifest throughout the years. It was therefore entirely in character for David, in his note of farewell, to acknowledge his own imminent and inevitable demise, but to focus instead on the burden of the friend he was leaving behind.

Understandably, his note moved me to tears. I closed the door to my chambers and sat there silently for the better part of an hour, just thinking about David, his friendship to me over so many years, and his generosity of spirit. And I replied as follows:

“David, you are my oldest friend as well. Go in peace. A part of me goes with you.”

Albeit in varying degrees we all share that sense of loss today.

Janet, Deborah, Joshua,

Judy and I send you our love.

Morris

HON. MORRIS J. FISH
Supreme Court of Canada
Cour suprême du Canada

John Rice

I'm John Rice, Chair of the Department of Statistics. I want to welcome you on behalf of the department to this memorial for our friend and colleague, David Freedman. I also want to attempt to convey in a few brief remarks a sense of the role David played in our academic lives.

David was one of the great statisticians of our time and a central figure in the department for 47 years. He was a very serious man, and with his unfailing honesty, his dedication, and his truly remarkable intelligence, made contributions to the department that have provided us with a legacy that we treasure. As a teacher, researcher, colleague, and friend, he fundamentally influenced generations of students and faculty.

David cared deeply about education, ranging from the most introductory level to graduate courses. In all his teaching, he strove for clarity, both in his own thinking and in expectations he conveyed to students. His emphasis on precise thinking was leavened by a delightful sense of humor and a keen interest in individual students. Students throughout the world have benefited from the hard-headed empiricism and the meticulous effort that went into the landmark textbook, *Statistics*, first published in 1978. A new generation of graduate students is now similarly privileged to learn from his recent 2005 textbook, *Statistical Models*.

This same quest for clarity characterized David's research, ranging from careful explication of the methodologies of the U.S. Census, to epidemiology, to law and the social sciences, to deep mathematical study of properties of Bayes procedures in infinite dimensional settings. In all these, he strove to strip away the superfluous and reveal the core issues.

David serves as a model for all of us in the Statistics Department. We try to take our teaching as seriously as he did. We are guided in our own research by holding David as a standard, as we attempt to cut through the intellectual fog that obscures our understanding.

We will miss David keenly, and deeply appreciate how his character has shaped that of the department.

Thank you, David, for all that you have given to us.

JOHN A. RICE, Ph.D.
Professor of Statistics
Department Chair
University of California, Berkeley

Kenneth W. Wachter

I'm Ken Wachter, from Demography and Statistics at Berkeley. I worked with David on U.S. Census Adjustment for 25 years and we shared a long friendship, later also with our wives Janet and Bernadette.

David disliked ceremonies. His pleasure in today, as he thought forward to it, isn't in the speeches, but in the gathering of his family and friends.

David liked ... mathematical elegance. I first knew of him from a beautiful theorem of his about infinite dimensional symmetry which I used in my thesis. He found his way to bring elegance into his marvelous textbook and his huge range of applied statistical papers.

Appropriately, thanks to nomination by David's student Andrew Noymer, one of the minor planets in our solar system bears David's name, number 19969 in the catalogue of the International Astronomical Union.

David's papers were his artworks. He took care with every detail, vocabulary, punctuation, layout. Every paper with him went through 30 drafts. I would work for days on a draft and send it off late at night, only to wake up the next morning and find the next revision from David waiting on the computer.

Litigation and trial testimony were David's athletics. He was a taut star player. He coached me. Our Census work was received at first with some hostility. Eventually the Supreme Court upheld our case 9-0. David said, "*With all that work we only convinced nine people, but the right nine people.*"

Like Bernadette and me, with Janet, David liked travels, Italy, the Dordogne, and sherry and Inspector Morse mysteries. He disliked foolish arguments, unsupported statistical models, politicized agendas, self-serving treatment of people. On these, he was unflinching. But he wasn't angry. He stayed amused, detached. When I was angry, he would laugh and say, "*Ken, what do you expect?*"

David's detachment went along with strength in the face of loss. He and Janet came to us after their house burned in the fire. All David had left were shorts and sunglasses. They never grieved to us. They caught their breath and turned to rebuilding their life and their home.

David's courage as death approached is a gift to us. On his last day, lying weakly in bed, he said he was like the Sun King Louis XIV now, receiving visitors from his bed at his *levée*. As I told him, I shall be keeping his example with me when my own time comes.

KENNETH W. WACHTER, Ph.D., M.A.

Professor of Demography and Statistics

Chair of Demography Department

University of California, Berkeley

Michael Sitcov

I first met David in the Spring of 1989, when I was assigned to defend the government's decision not to adjust the 1990 decennial census to correct for undercounts of minorities. The plaintiffs in the suit were New York City, along with most of the other large cities and states. Enormous amounts of money, and the apportionment of the House of Representatives, rested on the adjustment decision. Charlie Jones, who at the time was the Director of Decennial Census Operations at the Census Bureau, called me and said that the one person we had to have as an expert on our side was David Freedman. Charlie gave me David's office number, and I called David as soon as I got off the phone with Charlie.

Although I didn't appreciate how unusual it was at the time, David was in his office when I called. I introduced myself, explained why I was calling, explained how important it was that we win, and made a pitch to David's patriotism. When I finished, David asked me to tell him my name again, which I did. David then said he was Canadian, that he was leaving the country for several weeks, thanked me for the call, and hung up. At that point I got back on the phone with Charlie and told him that if he wanted David on our side it would be up to him to make it happen, but that he needed to act quickly. Luckily, Charlie succeeded where I failed.

David was an extremely funny person, and I could tell you many stories to illustrate that. One that comes to mind was the time David and I were in New York preparing for the census trial. We were staying at a hotel on Seventh Avenue just south of Central Park. David wanted to go to dinner at a restaurant around the corner called Ben Benson's, which is a well-known steak house in that area. I was on a per diem that left me almost no money for food. Money was not an issue for David because we were paying him hundreds of dollars an hour. The only thing on the menu I could afford was some sort of broiled fish. David, on the other hand, happily ordered the three-and-a-half pound lobster. When the waiter brought out our meals, you could barely see mine on the plate, but David got the Moby Dick of crustaceans. After David finished eating he told me how sorry he was that I couldn't afford a more substantial meal than the one I had, but assured me that his was delicious and filling.

David also was a charming man. For my 50th birthday my wife threw a large party at our home outside Washington. Without telling me, David and Janet came.

But what I really want to talk about is David's strength. About the same time David told me he had been diagnosed with cancer, I was diagnosed with epilepsy. Whenever David and I spoke after that our conversation always got around to our health situations. David refused to let the cancer get the best of him. He accepted his prognosis but refused to succumb to fear, self pity, sadness, or anger. I did not respond nearly that well. But watching how David dealt with his condition has been a tremendous source of strength to me. And it has helped me overcome the anger and sadness my diagnosis caused me.

Two days before David died he sent me an e-mail telling me to take my wife Rose out to dinner and to think about him. I knew David was near the end of his life, so I called him. We talked for about 15 minutes and laughed for about 10 of them.

Up until the end of his life, David continued to exhibit the sort of strength most people like to tell themselves they have, but that only a very few of us really do have. And in addition to saying I loved David, I want to say that I am honored to have been an object of that strength.

MICHAEL SITCOV, Esq.
Civil Division, Federal Programs Branch
U.S. Department of Justice

Sandrine Dudoit

My name is Sandrine Dudoit.

I was a student of David Freedman's and I am now a professor in Biostatistics and Statistics at Berkeley.

Speaking at David Freedman's memorial is at once one of the hardest and easiest things I have had to do. Hardest, because I miss David dearly and because I remember him as a very private and reserved person. Easiest, because I think about him often and his memory evokes only the best qualities a person and a scholar can possess.

I first met David in 1994, as a fresh Ph.D. student in the Department of Statistics. His 215 class was invaluable. It remains for me a permanent reference and the canonical example of an applied statistics class. David taught not a collection of methods and theorems, but the essence of statistics. Right away, I was mesmerized by the clarity and incisiveness of his thinking, his rigor, and his vast culture. I was of course also very intimidated by him and I'm glad that he forgave me for butchering a χ^2 statistic on the prelim exam. He brought out the best in his students by constantly raising the bar, encouraging us to think critically, and challenging sloppy practices we had adopted too hastily.

David's publications stand out as gems in terms of their rigor, clarity, and honest representation of statistics. They are a gold mine not only for their contents, but also for his impeccable style, where every word counts and a touch of humor distracts the reader in just the right places.

I remember fondly our regular lunches with Pat Buffler at Bistro Liaison. There, I was the lucky witness to fascinating exchanges between Pat and David on the history of epidemiology, the latest science article in the New York Times, or their travel experiences around the world.

I am thankful for all the times that Janet and David welcomed me so warmly into their home. These visits started with coffee on the deck. Then, David must have judged me old enough, we switched from coffee to sherry. I also remember a delicious swordfish that David BBQ-ed over a carefully dosed mix of firewood, including hickory, I think.

Our conversations of course covered our work on campus, but also a variety of other topics. I remember, in no particular order, talking about:

- French hyphenation rules,
- characters in Rabelais,
- how we were both moved by the beauty of Prague,
- what to do with day-old bread,
- the cover for his latest book,
- our favorite restaurants in LA,
- our childhood memories in Montreal,
- drinking americano vs. espresso,
- French politics,
- his fish market in Rockridge.

I admire and I am inspired by his exceptional intellect, culture, strength, dignity, and genuine personality. I have been touched by and I am thankful for his kindness, sensitivity, and inimitable sense of humor.

Professor Freedman, David, I will miss you. You will always be in my thoughts and in my heart.

SANDRINE DUDOIT, Ph.D., M.Sc.
Associate Professor of Biostatistics and Statistics
University of California, Berkeley

Donald Lamm

Meeting David Freedman was a close-run thing. It began with a 10:00 AM call that I placed to David's office from a campus phone in the Student Union. A few hours earlier my ever-efficient secretary informed me in her Teutonic way that I must hurry to meet a professor in the Statistics Department at Berkeley who had a manuscript for an introductory statistics text. She had been so informed that morning by a professor from Swarthmore College whom I vaguely knew.

The voice on the other end of the line was cautious when I introduced myself to David. “Why,” he asked, “*should I talk with a publisher I have never heard of when I have some twenty offers from other houses?*” “*Norton is different from those other publishers,*” I maintained. Silence. Then I played my trump card. “*My friend,*”—an exaggeration to be sure—“*Professor Saffran has told me that the manuscript will become a brilliant, though unconventional textbook. Well, Norton is an unconventional publisher. Just consider our one entry in your field, How to Lie With Statistics.*”

A pause. Then “*OK ... I can give you five minutes in my office in Evans Hall.*”

Those five minutes turned into an hour, and the beginning of far more than a successful publishing venture. Why an hour? As it turned out, David was acutely interested in book design right down to the character of type faces. So there was little talk about the content of the six paperbound manuals on David’s desk that were in Beta testing in Stat 2 at Berkeley and several other campuses. Instead we compared the relative values—*aesthetic and otherwise*—of Garamond, Century School Book, New Caledonia, Palatino, and perhaps a half dozen more type faces. It was when we got to Times Roman 10 on 12 that something clicked. It turned out that we both favored that unfussy, if unsexy, type face. And when David put a seemingly innocent question to me whether the book should be printed in two colors, as other publishers urged, luckily I came up with the right answer: “*No, black alone will work better; it won’t lead to confusion.*” David’s response was that half-smile all of us remember so well. We parted soon after. Norton was in the running for the book.

The deal did not close that day. After all, there were David’s co-authors—Roger Purves and Bob Pisani—who would have voices in the matter. But several months later—some thirty years ago—Norton won the prize. Freedman, Pisani, and Purves, *Statistics*, now in its fourth edition, remains a landmark in the eight decades of the firm’s existence.

Little did I know that winning the contract was only the beginning of an exacting editorial experience. There was not much I could contribute to the writing. Yes, I knew the difference between a mean and a median, but a histogram—that, I thought, must be some measure of one’s potential for allergies. David and his colleagues gamely suffered my ignorance of statistics. I was, in David’s calculation, a “*noble savage,*” a weak but useful evaluator of the exposition, examples, and exercises. My editorial job, it became clear, was to stop evolution in its track by convincing David that seven trial editions of the material were quite enough.

And the real test for me was in the design of the book, the drawings, and the typesetting. David, so precise in his writing, did not want a pseudo-precision in the drawn diagrams. They gave a false impression of exactitude. Draftsman after draftsman was rejected—this one for the “*greasy*” look of his drawings, that one for too immaculate a conception of reality. Computer-generated diagrams were run over and over again. Only once, though, did David object to a cartoon, almost all of which were created for the book by the New Yorker artist Dana Fradon.

I can still see David scowling at the first pass proofs. (This was the happily bygone era of photocomposition.) Where I saw perfect lines of type, he saw ascenders that were too high, descenders that were too low. After many passes and with some regret, David agreed that perfection was beyond reach. The book had to go to press.

And the rest is known not only to hundreds of professors of statistics and hundreds of thousands of students of statistics. Just the other day, the head of the Hewlett Foundation in Palo Alto picked the book from the shelf behind his desk. “*Difficult*,” he said. “... *as any honest book in the field must be. But, oh, what clarity!*”

Over the years I would meet David in a variety of places. But without question the most surprising was a chance encounter in London. David and Janet were strolling down Albemarle Street, David wearing not his usual sports coat but a dark banker’s suit. I found them sorting out the relative merits of afternoon tea at Brown’s Hotel and the Ritz. Their minds finally made up, they headed on to Picadilly and the Ritz. After all, David never settled for second best.

DONALD S. LAMM

Retired President & Chairman of the Board

W. W. Norton Publishing Company

Philip Stark

We’re all here because when David died, we lost something: a husband, a father, a friend, a collaborator, a mentor, a teacher, a colleague, an inspiration, an ally, a most worthy adversary, a reason to be humble.

Those who are not here lost something, too. The Department of Justice—and a dozen top law firms—lost their go-to statistician: someone who always got it right, who never missed a detail, and who could not be rattled. Statistics lost one of its strongest advocates of clear thinking, a brilliant and lucid researcher, expositor, and teacher. The world lost a giant among scholars, a singular intellect, a voice of reason, a mensch.

I lost one of my closest friends. Someone I could turn to with questions about anything—from math and statistics to my personal life, insurance, doctors, Early Music, where to get a Swiss watch serviced, cheese, what variety of apple was just right this week, hotels in D.C., restaurants, who made the best baguettes (according to David, in the 1980s they stopped cooking the fish and started burning the bread), and what to do for fresh bread on Christmas (buy bagels). I lost countless inside jokes. I lost someone who, not two years ago, cancelled his sabbatical to teach my class when I was bedridden—despite his own bleak prognosis. I lost the person I would call first when something amusing or difficult happened. I lost someone I delighted in, as much as I know he delighted in me.

About two months before he died, David told me he had gotten some grim test results. I said “*I’m so sorry.*” He shrugged that the situation had been clear for some time. I said “*David, can’t I be sorry that your health isn’t good?*” He said, “*be sorry on your own time.*” Unfortunately, that time has come, and I continue to be sorry, though now more selfishly. I miss him painfully and I always will.

When I think of David, I see his intelligence, his humor, his generosity, his clarity, his honesty, his scholarship, his intellectual courage, and his dogged pursuit of things that were “*just so*”—words, theorems, food, coffee, furniture, music, literature, fountain pens, cutlery, socks—anything and everything. But especially ideas.

David took a philosophy course as an undergraduate. The professor gave essay assignments, “*write what you think about X.*” David did, and got low marks. After a few iterations, David realized that the assignments were actually “*write what I think about X.*” The professor said he had never seen such improvement. I wonder how much great philosophy went unwritten because that professor wasn’t interested in what David had to say. And then I think of David’s contributions to causal inference and the foundations of statistics.

David was a philosopher, in the original sense of the word—a lover of knowledge. He was a *connoisseur* of knowledge: his work illuminates fine distinctions between knowledge and wishful thinking, obvious to him, but often subtle to the rest of us.

Whenever David would tell me he didn’t understand what I was saying, it was a sure sign that I didn’t know what I was talking about. I don’t remember disagreeing with him over anything more serious than punctuation, but we had profound differences over semicolons.

David liked to refer to “*the outer millimeter,*” what a person presents to the world. He warned not to extrapolate from the outer millimeter to infer others’ inner lives. David’s “*outer millimeter*” was a mile deep. I’ve never known someone to live, work, and die in a way that was so thoroughly consistent: methodically collect data, research what is known (or claimed to be known), think hard, draw one’s own conclusions, and act on them intrepidly. David was a revolutionary radical conservative, ever alert to flaws of logic, form, and substance; willing—even gleeful—to embarrass the emperor with the truth. Yet his outer millimeter appeared to be at peace with being at odds with the world, and reflected deep empathy for others and consistent amusement at reality’s quirks and imperfections.

I remember David warning several prospective consulting clients that he is expensive and slow, but compensates by being hard to get along with—an epitome of David’s honesty and humor (and his self-knowledge). The day before David died, we went over a list of things he wanted me to do after his death. One was to check his email periodically. I offered to set a automatic response: “*David is unlikely to reply to your email in the near future. If he does, please contact James Randi.*” We had a good laugh. But he asked me not to do it—too tasteless for him.

I am sorry for what we have all lost. And I hope we all find something today: a renewed commitment to scholarship and the pursuit of excellence in all aspects of our lives; the inspiration and example of David's mind, work, and generosity; a happy memory; the comfort of community; and gratitude for what David left behind. Thank you, David. Thank you for all of it.

PHILIP B. STARK, Ph.D.
Professor of Statistics
University of California, Berkeley

Diana Petitti

I met David 27 or 28 years ago at a party given at Shanna, his ex-wife's, house. The house was a big brown-shingle up above the Cal football stadium. Debbie was there. Josh was there. Christo and Hank were there. It was a big party with lots of people. It was either someone's birthday or a celebration of the new year. It was noisy with children screaming and people talking.

I found myself, as I often do, seeking some calm in the midst of the chaos. And I happened upon David standing in an empty corner of an empty room, perusing the contents of a large book case. I didn't know who he was and was relieved to find a fellow alien. We struck up the kind of conversation that two well-socialized people do when finding themselves refugees from the hustle and bustle of a party. I learned that he was a statistician and professor and he learned that I was a physician and epidemiologist. I am sure that I rambled on about how much I loved epidemiology and the interesting problems I thought about every day.

I expressed awe at his being a "*real statistician*" and recall vividly my puzzlement at his response, which was wistful and somewhat sad. "*Oh, no,*" he said, "*all the great work has been done.*"

Sometime later he called because he was working on a legal case. He had me read a paper and asked what I thought of it. "*It's hogwash,*" I said. After quizzing me about the reasons for my pronouncement, he asked me to work on the case with him as a medical advisor. And so, over many months I taught him about histology and anatomy and how doctors think. He taught me about being diligent and meticulous and scrupulous beyond even my own standards for such things.

This was the first of many collaborations over the following two and ½ decades. Collaborations on dietary salt and how the government misleads the public about the nature of the evidence to show it raises blood pressure; on breast cancer screening and how scientists don't

read the papers they cite; on hormone therapy and how statisticians use their new-found knowledge of the truth to pretend they knew the truth all along.

In the last decade, we talked or emailed or both at least every month, at times every week, and sometimes every day, yukking it up over some statistical or epidemiologic silliness. We sent papers and clipping back and forth by mail, often with no comment, or with only a note “*you won’t believe this!*”

Here are some of the most memorable things David said to me over the years.

After my book was published, when it had sold several thousand copies, David commented to me in passing one day that he had read it and “*it wasn’t that bad.*”

Another time, over lunch, when I thought that I had given him a particularly insightful and cogent analysis of a problem he posed, he took off his glasses, looked down at his plate, and said, “*That was the stupidest thing I have ever heard.*” Which hurt me a bit but also surprised me because it was in no way the stupidest thing I had ever said.

In spite of his aversion to animals and small children, David was the person in the East Bay who checked in at my house in Piedmont on the night of the Loma Prieta earthquake to see whether Sara, my daughter, and her nanny needed anything after hearing that the Bay Bridge had been damaged, knowing that I would be stuck in San Francisco.

David called me when he knew what kind of bone cancer he had. I think he was glad to have someone tell him the truth. I am often admonished for being brutally honest but I knew with David that there is only one kind of honesty, which is often brutal. And if David taught me anything, it was to hold true to an honest assessment even when it is inconvenient or when it causes others to turn away or when being honest means being lonely.

The friendship I had with David was a gift. I treasured that gift when he was alive and I will continue to treasure it as I create a sort of “*David in my mind*” to talk to when I find some particularly ridiculous thing said in a scientific paper or the newspaper. I will continue to laugh knowing that he would laugh as hard as I am.

When David wrote me in the last week of his life to ask me to think of him sometimes, it was easy to write back to assure him that I would think of him every day.

DIANA PETITTI, M.D., M.P.H.
Professor of Biomedical Informatics
Arizona State University

David Collier

I am David Collier, from the Political Science Department at Berkeley.

I recall an early exchange with David Freedman. Quite some time ago I attended a seminar where he engaged in what was—to be completely frank—one of his favorite activities: demolishing statistical models in political science.

After the seminar I pointed out that one of the articles under discussion had won a major prize from the American Political Science Association. David was delighted!! It was strong evidence that blunders in statistical analysis were not only standard, but greatly rewarded. To paraphrase Humphrey Bogart's famous words, "*This exchange with David was the beginning of a beautiful friendship.*"

My collaboration with David has been a unique experience in my academic career. Given his stunning insights and his equally stunning wit, exchanging ideas was a memorable source of learning, and of fun. He unquestionably worked at the highest level on the mathematical side of statistics. But he also had a fascination with language and words, a brilliant capacity to use them engagingly and incisively, with arresting metaphors matched to breathtaking precision, irony, and humor.

David's human engagement, insight, and wit were sustained to the very end. On that last afternoon, he was still exchanging e-mails with friends, providing stunning insight, giving helpful advice—and characteristically, joking and wise-cracking with his engaging, and sometimes wacky, barbs and quips.

Since David died, I have again and again been repeating these barbs and quips—to myself, and to students and colleagues.

I would like to share a few favorites, including some suggested by Paul Humphreys—who is very, very sorry not to be here—and also by Janet Macher.

David's target was often the diverse calamities that occur in statistical analysis.

- Thus, on interpretation, he said:

"Interpretation comes in when the beauty of the math ends and the empirical mess begins."

- A spectacular mistake might be called:

a "*howler.*"

- David's idea of a major oxymoron:

"Correlation-based causal inference."

- In arguing that we only get out of a statistical model what we put into it, David formulated the law of conservation of rabbits:

“If you want to pull a rabbit out of the hat, you have to put the rabbit into the hat.”
- On his fascination with disasters:

“Some people like to rubberneck at highway accidents. I like to read the social science modeling literature.”
- Relatedly:

“I am a connoisseur of insane statistical models.”
- On intellectual fads in academic life:

“Razzle, dazzle, ... fizzle.”
- On hiding subversive ideas:

“Publish seditious truth, get the tone right, and everybody just nods.”
- On a colleague who successfully addresses a major topic:

“Stalking big game.”
- Perhaps the ultimate dismissive remark:

“Go play in the traffic.”
- If the introduction to an article is overly long:

“Too much throat clearing.”
- Saying the obvious:

“A yawner.”
- On error:

“To err is human, ... but so often?”

To conclude. The feisty spirit that ran through David’s jests and quips and sayings came out vividly in his very final words of goodbye to Paul Humphreys. David said: *“Keep after the rascals.”*

I absolutely agree with David. Let’s do that.

Thank you.

DAVID COLLIER, Ph.D.
 Professor of Political Science
 University of California, Berkeley

Stephen Klein

Janet, you knew David as a loving husband, partner, and co-chef.

Deborah and Josh, you knew him as your dad.

Others of you, like me, knew him as a friend, mentor, scholar, and colleague.

I also had the privilege of seeing his expert witness skills in action. We worked together on a wide range of cases, including ones that investigated:

- how different racial groups voted,
- appropriate levels of school funding,
- the source of an E-coli outbreak,
- age discrimination in the workplace,
- possible racial bias in death penalty cases, and the effects of earthquakes, floods, computer glitches, and rock bands on bar exam scores.

It always intrigued me how David knew so much about the central issues in these and the other cases we worked on.

He was not just a quick study—he knew and understood the issues even before we started!

David's breadth and depth of knowledge and understanding were extraordinary. In reading his books, you can see how he drew on that vast reservoir of information and experience to make statistics interesting and relevant to his readers.

David's expert witness work also brought out his humorous side, such as when he demonstrated that an opposing expert's assumptions and analytic approach led to moving a congressional seat to the wrong state or estimating that a group cast twice as many votes as it had voters.

David and I wrote a dozen journal articles and over 20 expert witness reports together.

We had a lot of fun, and many arguments doing this, and I learned a fair amount of statistics in the process, ...

BUT, coauthoring with David was like having the editor and peer reviewer from hell.

We wrote innumerable drafts of every paper because of his meticulous attention to detail and his unrelenting commitment to precision of thought, accuracy, objectivity, and clarity.

David's many significant contributions to the statistical literature earned him the well deserved recognition and respect of his peers. It came as no surprise that the Federal Judicial Center asked him to co-author a chapter on statistics in the *Reference Manual on Scientific Evidence*.

However, to my mind, his most engaging writing occurred when he turned his hand to describing the history of different approaches to scientific inquiry and the importance of combining statistics with creative research design, reasoning, insight, and analytic thought—which is what David did, over and over again.

I miss my editor, mentor, colleague, best friend, and intellectual sparing partner.

I miss drafting reports and testimony together.

I miss our frequent phone calls—always before his 7 P.M. bedtime.

I miss our working lunches where I got to enjoy his taste in fine wine, cheese, salami, and bread.

I miss his remembering to cook my steak a few minutes less than he cooked his and Janet's because he knew exactly how I liked it.

There is an ache in my heart in the place he will always occupy.

As many of you know, David was often skeptical of estimates of margins of error ... especially when computed by others ... so he would flash that wry smile of his when he reminded me that by not following the so-called best medical advice he was living years longer than the doctors predicted. True to form, he was a real “*outlier*,” and we all got to benefit from and enjoy that bonus time.

Shortly before he died, I told him he was about to learn the answer to one of the great mysteries of life.

He replied: ... “*I will e-mail you the answer.*”

That was David being David to the end.

STEPHEN P. KLEIN, Ph.D.

Senior Partner

GANSK & Associates

Robert Pisani (read by Deborah Freedman Lustig)

David -

I have always been proud to know you, proud to have been one of your students, proud to have my name next to yours on a book. I thanked you once “*for everything*”: all that you have done for me, beginning when I was a wayward grad student in your class even before you gave me a Ph.D. I just want to thank you again for being who you are, and for being who you have always been.

Bob

ROBERT PISANI, Ph.D.

Former student, colleague, and co-author (*Statistics*)

Deborah Freedman Lustig (daughter of David Freedman and Shanna Swan)

Tract, 1916, 1917, William Carlos Williams (1883–1963)

*I will teach you my townspeople
how to perform a funeral—
for you have it over a troop
of artist—
unless one should scour the world—
you have the ground sense necessary.*

*See! the hearse leads.
I begin with a design for a hearse.
For Christ's sake not black—
nor white either—and not polished!
Let it be weathered—like a farm wagon—
with gilt wheels (this could be
applied fresh at small expense)
or no wheels at all:
a rough dray to drag over the ground.
Knock the glass out!
My God—glass, my townspeople!*

*For what purpose? Is it for the dead
to look out or for us to see
how well he is housed or to see
the flowers or the lack of them—
or what?*

*To keep the rain and snow from him?
He will have a heavier rain soon:
pebbles and dirt and what not.
Let there be no glass—
and no upholstery, phew!
and no little brass rollers
and small easy wheels on the bottom—
my townspeople what are you thinking of?
A rough plain hearse then
with gilt wheels and no top at all.
On this the coffin lies
by its own weight.*

*No wreaths please—
especially no hot house flowers.
Some common memento is better,
something he prized and is known by:
his old clothes—a few books perhaps—
God knows what! You realize
how we are about these things
my townspeople—
something will be found—anything
even flowers if he had come to that.
So much for the hearse.*

*For heaven's sake though see to the driver!
Take off the silk hat! In fact
that's no place at all for him—
up there unceremoniously
dragging our friend out to his own dignity!
Bring him down—bring him down!
Low and inconspicuous! I'd not have him ride
on the wagon at all—damn him—
the undertaker's understrapper!
Let him hold the reins
and walk at the side
and inconspicuously too!*

*Then briefly as to yourselves:
Walk behind—as they do in France,
seventh class, or if you ride
Hell take curtains! Go with some show
of inconvenience; sit openly—
to the weather as to grief.
Or do you think you can shut grief in?
What—from us? We who have perhaps
nothing to lose? Share with us
share with us—it will be money
in your pockets.*

*Go now
I think you are ready.*

http://www.cs.mcgill.ca/~abatko/interests/poetry/poem.cgi?n=american/wc_williams-tract