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## The \$3 Billion Cell Job

**How the smartest guys in Silicon Valley sold California on the most thrilling-and speculative-biotech start-up the world has ever seen.**  
By Diana Kapp

### I. The Entrepreneurs' Way

A blistering July afternoon in Sun Valley, Idaho. All around, rich businessmen and vacationers hurried from one patch of shade to the next; even the ducks looked uncomfortable. But stem cell research pioneer Irv Weissman was oblivious to the heat, the bustle, the majestic mountain views, in fact, to everything but the story he was telling, a story that he hoped would change the course of science, if not—and really, this was no exaggeration—human history.

Weissman, the 65-year-old director of Stanford's Institute for Cancer and Stem Cell Biology and Medicine, is a superstar around Palo Alto, the multimillionaire founder of three biotech ventures and 2002 California Scientist of the Year. He was in town as a featured guest at the "impossible ticket" Allen & Co. media mogul shoulder-rubbing retreat. Credited with discovering the first adult stem cells in any species almost 20 years ago—and, more impressive, with having the vision to understand the potential of that discovery to regenerate organs and cure disease—Weissman increasingly was someone other business, science, and political hotshots wanted to listen to. Yet these days, pretty much all he talked about was what adult stem cells did *not* do.

The previous morning, on a spirited panel moderated by Charlie Rose, Weissman made the case instead for embryonic stem cells, which are found in very young embryos (about five days old). They're more plentiful than adult stem cells (which, despite their name, are present in children and fetuses, too); more significant, they are magically "plastic"—capable of morphing into over 200 types of human cells, if only (and that's an extremely big if) scientists knew how to unlock their secrets. Rub an embryonic stem cell one way, and voilà—you might grow insulin-producing beta cells to cure juvenile diabetes. Rub it another way, and you could get neurons to restore brain function to a patient with Parkinson's disease, create replacement skin for a burn victim, or rebuild an injured spine. Problem was, the Bush administration had banned federal funding for any stem cell research that involved creating or destroying embryos, effectively barring scientists from pursuing this important if highly speculative work. Which was why Weissman also plugged Prop. 71, the audacious California ballot initiative that would do an end run around the federal restrictions. Echoing his enthusiasm were a couple of other high-profile panelists, including his good buddy Lee Hood, a key figure in sequencing the human genome (the Hood and Weissman families own a Montana ranch together). The previous night, Weissman had chowed down on barbecue with Tom Brokaw, George Tenet, and Bill Gates on the lawn of the Sun Valley Lodge. Somewhere between salad and dessert, Gates leaned over to Weissman and whispered something to the effect of, "Why don't you have your people call my people?"

What Gates's people do, of course, is cut checks—big ones. Microsoft's iconoclastic founder soon donated \$400,000 to circumvent the scientific policies of the president whom he was, incidentally, supporting for reelection. Apparently Weissman's morning pitch for Prop. 71 had been convincing.

But then, the impetuous and brilliant Weissman, the son of a fur trapper in Montana, knows how to talk to people like Gates. As much an entrepreneur as he is a scientist, his

start-ups include SyStemix and Cellerant as well as Stanford's stem cell institute, which he's been selling hard to wealthy donors (one responded by giving \$12 million). Weissman's rare combination of traits—the rationality of a scientist, the passion of a true believer, the irreverence of a Silicon Valley rebel—made him one of the key point men for Prop. 71, which he had been stumping for on a daily basis all summer. The story Weissman was telling now, over espresso on the Sun Valley green, was an integral part of that pitch, a parable that resonates throughout the scientific world. "You could say there's a Russian way and an American way." He added forebodingly: "We"—meaning ideologues and evangelists in the Bush administration—"are taking the Russian way."

"The Russian way" is, for most people, a calcified high school biology class memory at best. Somewhere between Mendel's peas and Watson and Crick's double helix was a rogue pseudoscientist named Trofim Lysenko, who single-handedly drove the Soviet Union, then a flourishing seat of biological research, into a half century of deep freeze.

In the 1930s, Stalin's regime was fanatically spreading its extreme version of Marxist ideology, including the premise that economic relationships—and living organisms—could quickly alter and adapt to a new environment. Following this logic, peasants could become anything. Russia could rapidly transform itself from an agrarian state into a modern economic powerhouse. Long live Stalin!

Lysenko, a peasant agronomist from Ukraine, exploited this ideology for immense personal gain. He claimed that he could produce a much-needed increase in crop yields by applying Marxist notions of environmental adaptation to agriculture. With the right stimuli, plant breeds could be transformed in a single growth cycle instead of the decades (or eons) required by evolution. Genes, Lysenko pronounced, did not exist. Genetics was a "bourgeois perversion." Survival of the fittest had no place in Communist doctrine.

His politically expedient, albeit scientifically bankrupt, claims propelled him to the top of Soviet science. As Lysenkoism gathered steam, a witch hunt of geneticists began. Thousands of scientists fled the country. Many others were executed. Nikolai Vavilov, one of the greatest botanists of all time, starved to death in a jail cell.

"For 50 years," said Weissman, stroking his beard, "Russia did not report a single scientific advance in the field of genetics. They are still playing catch-up today." Even more devastating, famine ensued. At the people's peril, Russia was left out of the global agricultural revolution that occurred in the middle decades of the 20th century. "Meanwhile," Weissman said, "the U.S. went on to lead the genetic revolution."

To Weissman, the lesson was clear: when political ideology trumps scientific reason, the result will almost certainly be catastrophe—and potentially the needless death of millions. Was this the mother of all worst-case scenarios? Maybe. But to people like Weissman and his mentor, Stanford Nobel laureate Paul Berg, it also seemed a near-perfect analogy for where this country was headed if the White House were allowed to go unchallenged.

## **II. The Scientists' Way**

On August 9, 2001, Berg flipped on the TV in his Santa Barbara hotel room. George Bush was announcing his much-anticipated policy on embryonic stem cell research, an issue he called "one of the most profound of our time." The president was on the record opposing such research. But he was also under enormous pressure from critics who charged that his administration had repeatedly chosen partisan politics over sound science—on climate change, for example—so his advisers had crafted a "compromise." The federal government would fund some research on embryonic cells but would restrict such work to cell "lines," or self-renewing colonies, already in existence.

Berg's initial reaction was pleasant surprise. "I was really blown away that [Bush] was supporting *any* research," recalled the 78-year-old biochemist, the father of genetic engineering. "I was even more blown away by the number of lines." The first human embryonic stem cell colony had been derived only three years earlier, so the fact that there were already 64 of them was encouraging. Berg figured Bush had made a "brilliant

political move," appeasing the scientific community without angering his conservative base.

But it took just a few conversations with colleagues like Weissman and pals at the National Institutes of Health (NIH) to turn Berg around. For one thing, most of the cells were 1.0 versions. (Or, as one researcher put it, "Are [you] using the same cell phone you were in 1998?") Just 22 lines were even viable, the NIH would later report, and many of these were locked up by patents. What's more, the lines lacked genetic diversity (all came from leftover embryos at fertility clinics, where the clientele is overwhelmingly white), and because they were derived using a technique that would never pass muster with the Food and Drug Administration, "they could never be used for clinical trials," said Berg. Bush's policy, he concluded, was "a lot of hot air."

Berg, as cerebral as Weissman is impassioned and exuberant, was as close to an elder statesman as exists in the scientific world, on a par with ambassadors and prime ministers. What he thought about the issue mattered a great deal; in his view, stem cells were "equally as promising" as gene splicing, the world-changing innovation that won him the Nobel prize in 1980. There was the medical promise: therapies that might eventually treat dozens of diseases. There was the research promise: fundamental new tools to study everything from cancer to Alzheimer's. Stem cell science is a "platform technology," he believed—the springboard to who knows what. Not to explore the possibilities would violate everything that science stands for. Berg insisted, "The search for new knowledge must have no boundaries."

Berg's view was shaped by hard experience 30 years ago, when society and science faced another Lysenko moment. Then a cancer researcher studying a monkey virus called SV 40 (for years he drove a Honda hatchback with "SV 40" vanity plates, a gift from his students), Berg grew intrigued with the idea of inserting snippets of its DNA into the simple, fast-growing bacteria *E. coli*. If it worked, gene splicing—aka recombinant DNA—would give scientists a vital tool for studying the structure of chromosomes and the biochemical basis of many diseases. But before he could proceed, all hell broke loose.

To Berg and his like-minded colleagues, combining the genetic material of distinct organisms would be like splitting the atom or rocketing into space—a huge scientific leap forward. To their critics, recombinant DNA was Franken-science, threatening to unleash untold new plagues concocted in the name of progress; the nightmare scenarios also included designer babies, human clone factories, and eugenics. Some in Congress pushed for a ban. Fearful of the backlash, and uncertain themselves about the full implications of their work, Berg and a few colleagues took matters into their own hands. They called for a global moratorium on questionable recombinant DNA experiments until the ethical and safety issues could be carefully considered; amazingly, their fellow researchers complied. Next, Berg and others convened a historic conference at Asilomar, on the Monterey Peninsula, in February 1975, where more than 100 leading scientists, including Weissman, hammered out the guidelines to govern their brave new world. Satisfied with their achievement, the scientists lifted their moratorium. Berg went ahead with his experiment.

Within a year, the biotech industry—now 2,600 companies in California with \$32.3 billion in revenues in 2003—was born. Recombinant DNA techniques, meanwhile, led directly or indirectly to the creation of drugs and diagnostic tests for dozens of diseases as well as the sequencing of the human genome. "Today, there is hardly a field in the life sciences that has not been transformed [by genetic engineering] in both the way scientific questions are formulated and the way solutions are sought," Berg said.

On principle, Berg never patented any of his discoveries, so he didn't cash in on the revolution he begat. But hundreds of his Stanford colleagues and neighbors, Weissman included, got very rich indeed. As the two men and many other scientists brainstormed about how to fight Bush's ban, they realized they'd get their strongest support from a place where pockets were deep and belief in new technologies even deeper. That place, of course, was Silicon Valley.

### III. The Bay Area Way

On November 3, over 6 million Californians did something unprecedented in American politics and science. They voted to borrow \$3 billion to finance research so cutting-edge and controversial that it doesn't give just Luddites and pro-lifers pause but many researchers, feminists, and ethicists as well. Prop. 71 was sold as a way to save millions of lives while building a scientific-industrial complex that could help resuscitate California's ailing economy. While many of the 59 percent of voters who supported the measure undoubtedly believed those claims, others saw their vote as a big "f--- you" to George Bush. Probably few understood the boldness of what they had authorized. It was as if voters had ordered the state to bypass NASA and launch its own uncertain mission to Mars.

The reaction on November 3 was predictable: there they go again. Prop. 71's passage was cast as another example of Californians' penchant for extreme politics, blazing new paths oblivious to the consequences for themselves or the country. Prop. 71 establishes, by way of a constitutional amendment, the California Institute for Regenerative Medicine, which will dole out \$295 million per year for the next ten years—more than the National Cancer Institute spent last year on the leading cancer killer, lung cancer. While work involving fetal and adult stem cells will qualify for funding, embryonic research is the priority; the state will receive royalties on any discoveries that result from its investment. Consistent with the mind-set that created the largest state deficit in U.S. history, interest payments are pushed into the future, the first one due in five years. By the time the bond is repaid, the cost to taxpayers will hit \$6 billion.

But more than being a California story, Prop. 71 was a Bay Area story—and not only because places like Stanford, UCSF, and UC Berkeley stand to gain so much money for scientists and facilities. Viewed through the prism of Silicon Valley, Prop. 71 was no less than the ultimate biotechnology deal, one that epitomizes a local ethos that romanticizes risk and exalts living and dying by the sword of technological breakthrough. The principals were all part of a small, closely entwined fraternity of academic scientists, venture capitalists, and entrepreneurs who feed off of each other's success and are united by a near-fundamentalist devotion to scientific conquest, lofty idealism, and outrage that government or religion would stand in their way. These people put their money where their passions were; two-thirds of the dough raised to pass Prop. 71 came out of their pockets.

The deal was driven, too, by a smug certainty that the only proven formula for both doing good and receiving just rewards in biotech requires *taxpayers* to take on the riskiest role—funding the early experiments that are still so pie-in-the-sky that no one can say where they will lead. In gene therapy, for instance, the NIH over the past 15 years has spent over \$4 billion on research that, among other things, fuels the local biotech industry's quest to develop and sell new drugs and technologies. Against that backdrop, \$3 billion in public money for stem cell research in California is almost par for the course.

But if it was a Silicon Valley deal, it's one that some key players hope will fade from memory as quickly as possible.

### IV. The Hollywood Way

In Marketing 101, the first rule is: get Hollywood stumping your cause. In this case, that part of the deal happened without all the usual hassles. Jerry Zucker, the director of movies like *Ghost* and *Airplane*, and his wife, Janet, also watched Bush's stem cell policy address. But unlike Berg, they were immediately alarmed. Before the speech was over, Janet was on the phone to her good friend Lucy Fisher, former vice chair of Columbia TriStar Motion Picture Group. "We've got to do something," Janet implored. Like the Zuckers, Fisher and her husband, Doug Wick (his producing credits include *Gladiator*), had a young daughter with juvenile diabetes. Artificial human insulin was the very first product spawned by genetic engineering; researchers believed one of the first

achievements of stem cell science might be a full-blown cure. "It's impossible to have a sick kid and not do something," said Jerry, who worried about complications of the disease, like heart problems and blindness.

What the two couples did was pull together parents of sick kids, Hollywood heavy hitters, businesspeople, and scientists to keep embryonic research on the fast track. The group, which called itself CuresNow, gathered throughout 2002 at a series of Los Angeles garden party dinners. Berg was one of the first invitees; at some point, Weissman was included, too. He quickly learned that when it comes to patient advocacy, "you've never seen *anything* like parents of juvenile diabetics." He was pulled in by his movie-biz insider sister, Lauren, who, as excited about stem cells as Weissman was, became CuresNow's executive director. It soon was clear what the group's first battle would be: trying to thwart efforts in Congress to ban "therapeutic" cloning—aka somatic cell nuclear transfer, or SCNT.

Most people know SCNT as the process that led Scottish scientists in 1997 to clone Dolly the sheep. But it's most exciting as a way to make and study embryonic stem cells. Using SCNT, for example, scientists might someday be able to take the DNA of an Alzheimer's patient—perhaps swabbed from inside Ronald Reagan's cheek—clone an embryo with his exact genetic blueprint, harvest the stem cells, grow a match of his neurons, and watch the progression of the disease. Repeat 100 or 500 times and the mysteries of Alzheimer's might be solved.

To the religious right, however, therapeutic cloning is right up there with abortion. Before Bush's address, the House of Representatives passed a bill criminalizing all types of cloning, with penalties of up to \$1 million and ten years in jail for doing research or receiving treatment based on that research—even in another country. In early 2003 a sister bill, sponsored by Kansan Sam Brownback, had hit the Senate floor. Zucker, Berg, and others descended on Washington. Nancy Reagan, a longtime family friend of Fisher and Wick, proved an especially useful ally. CuresNow lobbied hard and stopped the bill in its tracks. Heady with victory, the group wondered: what else could it do?

The answer came from Democratic state senator Deborah Ortiz of Sacramento. She had pushed through a bill (SB 253, enacted in 2002) that made California the nation's first "safe haven" for therapeutic cloning and stem cell science, not including "reproductive" cloning, with its cringe-inducing image of baby minting. But her efforts to persuade lawmakers to fund such research had gone nowhere. So—this being California—Ortiz was toying with a statewide bond initiative. "It was obvious that CuresNow needed to leave the national front and concentrate in California," Lauren Weissman said. In March 2003, CuresNow organized another gathering in the Zuckers' swish Brentwood home, with 40 in attendance, including Ortiz, the Weissman siblings, Alzheimer's researcher Larry Goldstein of UC San Diego, various A-list Hollywood liberals, and Peter Van Etten, head of the New York-based Juvenile Diabetes Research Foundation (JDRF), one of the nation's most powerful disease-advocacy groups.

But the one guy who, in Van Etten's view, "just had to be there" was, unfortunately, a no-show. Silicon Valley real estate developer Robert Klein was halfway around the world with his daughter, Lauren, about to head into the Amazon rain forest for three weeks. Now 59, Klein—creative, confident, focused, idealistic, politically astute—was the perfect guy to make an idea as crazy-ambitious as this one happen. In 1975, just out of Stanford Law, he'd somehow managed to convince state lawmakers to hire him to write an affordable-housing bill; his brainchild, the California Housing Finance Agency, used tax-exempt bonds to fund such projects. Later, he founded the Palo Alto-based Klein Financial Corporation, which put together loans for affordable housing as well as commercial ventures (and made him wealthy in the process). Klein was passionate to the point of tears about the promise of stem cells; his son, Jordan, now 14, had diabetes (and his mother Alzheimer's). As a member of JDRF's international board, Klein had not long before persuaded Congress to fork over \$1.5 billion in NIH funds for juvenile diabetes.

Practically as soon as the dinner broke up, Van Etten tracked Klein down in Peru, and

almost as soon as they had hung up, Klein was on the phone to his advisers back in California. His basic questions: Was a bond initiative doable in a way that would protect California's faltering economy? Could something as abstract as stem cell research possibly win? A few hours later, just as he and his daughter were about to disappear into the jungle, he had the answers he was hoping for: yes and maybe.

## **V. The Klein Way**

California's long list of unprecedented ballot measures—property tax reform, three-strikes legislation, anti-immigration bills, even the dumping of Gray Davis for Arnold Schwarzenegger—has created the false impression that the state's voters will go along with practically any crackpot idea put before them. But Klein knew the bond initiative approach was a long shot. In reality, just 35 percent of California initiatives win at the polls. Voters, for the most part, don't like change, and particularly in a down economy, the winners usually concern pocketbook or anticrime issues, not wildly expensive schemes to provide funding for basic scientific research. The rolling-in-money Silicon Valley types knew how hard it is to beat the odds. By one count, from 1996 through 2000, 14 Valley-sponsored propositions came on the ballot. Only 2 of them passed.

Still, initiatives remain irresistible to Valley daredevils and go-it-aloners. After all, who wants to wait for old-fashioned political consensus when you're sure you're onto the new new thing? Venture capitalist Tim Draper's 2000 initiative campaign is especially legendary—as a bloodbath, anyway. Draper—loaded from big IPOs like Hotmail and known for his flamboyance—poured \$23.4 million of his own money down the drain to push for universal school vouchers, a complicated and controversial idea that was easily killed by teachers' lobbies, among others. Indeed, history has shown that if the opposition is well organized and financed, an initiative—even a simple idea with broad appeal—is pretty much doomed.

Klein knew this history better than most. But he also knew that none of the obvious stem cell opponents had serious money. The polls were encouraging, too: support hovered at 60 to 70 percent, which meant that many Republicans and religious types were already on board. (Said a surprised Berg, "Catholics actually vote for this.") In early polling, the group also discovered that educating voters would be the key to victory, because the more people learn about stem cell research, the more excited they become. "It's amazing, the difference between a group that reads a sentence about the science and those that read a paragraph," Klein said.

In the past, some Valley-based initiatives had been treated like quixotic pet causes—super-rich guys throwing funny money at windmills. Klein knew this was the wrong approach. Silicon Valley excelled at bold, carefully crafted, supremely well managed deals. For the stem cell effort to succeed, it had to be run like what it was: a shoot-for-the-moon biotech start-up, with California voters standing in for the shareholders. Klein took on the CEO-type role, leaving his business on autopilot. (He also made a \$1.2 million donation to get the initiative off the ground, later upped to \$3.1 million, making him Prop. 71's biggest donor.) Berg was akin to the chairman of the board, a towering symbol of the triumph of science over fear; his lack of apparent financial stake in the outcome, as well as his Nobelhood, gave him a credibility that no critic could match. Weissman, meanwhile, played several roles. First and foremost, he was a science guy (there were a number of these, including UC San Diego's Goldstein and Jeff Bluestone, the star diabetes researcher at UCSF), someone with a major stake in a competing technology who could explain why embryonic stem cells were the future. He was also a phenomenal salesman.

By late 2003, an ad hoc group of Klein, Berg, Weissman, policy wonks, other biotechies, and the original CuresNow parents was designing a feasibility study and raising start-up funds. The drafting of the California Stem Cell Research and Cures Act, a masterpiece of legalese, showed Klein's cunning. The act took the hot potato, reproductive human cloning, off the table. As a constitutional amendment, it made stem cell funds immune to poaching. The structure was modeled on the NIH, but loosely, so scientists—who would

run the show—could basically do whatever they liked. Klein and a team of lawyers bulletproofed the measure over several months of sessions around the state. "He's totally compulsive," said Zucker. "I'm sure people were thinking, 'Why is he challenging me on this small point?'" Bob thought defensively of all the things that could probably derail it." Added Amy DuRoss, a Stanford Business School grad who served as the campaign's executive director, "Bob's all about worst-case scenarios."

In meetings with potential backers of all stripes, Klein was also developing a mesmerizing pitch capable of persuading anyone who worried that the measure was too much, too soon, that *this* was the moment to grab. The basic elements: heart-tugging personal stories, references to the legacy of recombinant DNA, promises of quick economic returns for the state. "He's incredibly effective," said Weissman. "I've never seen anything like it. I wouldn't be surprised if we see him running for a major political office one day. If this is a revolution—and it is—you can think of me as Malcolm X. Bob is Martin Luther King Jr."

By June, the campaign had collected almost twice the 598,000 signatures necessary to get the measure—now officially titled Prop. 71—on the November ballot. To improve its chances, Klein signed on the Los Angeles consulting firm Winner & Mandabach Campaigns, which boasts a 90 percent pass rate on ballot measures. As Klein never tired of repeating, over 50 percent of Californians have a family member or close friend with one of the "Big Five" diseases—cancer, diabetes, heart disease, Parkinson's, and Alzheimer's—that potentially would benefit most from advances in stem cell science. Getting those people to the polls on November 2 would be a key campaign goal. "If we turn out only the 5 million active members of disease advocacy groups in this state, we win," Klein predicted.

Months ahead of Election Day, Klein was already working like a demon, buzzing around official campaign headquarters (the Klein Financial offices) handing out vitamins so that the gung-ho staff (including Klein and Bluestone's sons and DuRoss's little brother) could keep up with him. "The guy doesn't sleep," DuRoss said. Berg and Weissman, meanwhile, were doing the billionaire circuit. "I was supposed to see [Mike] Milken but that got canceled," Berg said in September. "I've called Eli Broad—wait, you don't know Eli Broad? The richest guy in California?" (Actually, he's the third richest.) Berg also pitched Herb and Marion Sandler, the power couple who control Golden West Financial Corporation, the Oakland-based S&L holding company. "When I first called Herb [about the initiative], he said, 'That's the stupidest thing I've ever heard,'" Berg said; still, after a meeting, he and Klein left Sandler's office with \$1.5 million. Weissman made it into the exclusive Bohemian Grove, where he worked Bill Bowes, a cofounder of AMGen, one of the darlings of the biotech world (he and his wife contributed \$1.3 million), as well as Henry Kissinger.

But even as they nailed down serious money, the Prop. 71 team knew they'd need much more to saturate the airwaves with heart-wrenching ads starring twin boys (one with cerebral palsy), a mom with multiple sclerosis, plus superstar patients like Michael J. Fox and Christopher Reeve. The target figure was \$25 million—more than the NIH spent on human embryonic stem cell research in 2003 (\$20.3 million). To raise that kind of dough, they'd need what every successful technology start-up requires: a true venture partner.

The most active biotech investor on the planet was Brook Byers of Kleiner, Perkins, Caufield & Byers (known as KP in the biz), the Valley's most megasuccessful VC firm. Klein knew Byers from his early days in Palo Alto—the two had lived together briefly while they were students, although they were never particularly close. Klein also had met Byers's partner, VC rock star John Doerr, whose portfolio of winners includes Compaq, Sun Microsystems, Amazon, and Google. Doerr and his wife, Ann, had once called Klein for advice about a floundering school-bond effort in Woodside; Klein had led a successful bond effort next door in Portola Valley. The Doerr-backed measure went on to win over 75 percent of the vote. Now it was time for Doerr to repay the favor. But Klein was hoping for much more than advice in return.

## VI. The KP Way

It's the rare deal—business or philanthropic—that makes it out of Kleiner, Perkins's storied Monday morning meeting alive, as eager entrepreneurs vie for backing that is the surest thing the VC world has to a sure thing. The Prop. 71 team's pitch hit all the right notes. Byers's reaction when Klein first stopped by KP's Sand Hill Road offices in the fall of 2003: this is *big*. Not only did it involve A-listers like Klein, Weissman, and Berg, but it would put KP's leaders on the ground floor of a nascent field with mind-boggling potential.

But it's overly simplistic to pin the KP guys' eagerness to get behind the campaign on the obvious upside for the biotech industry. Like many Silicon Valley winners who once disdained all things political (working *in* the system to change the system was not exactly the SV way), in middle age they like to flex their political muscle. Byers and the 200-ideas-a-day, hyperkinetic Doerr have thrown more and more of their energy and bucks behind education and other issues, including the NewSchools Venture Fund, an ambitious effort to invest in innovative K-12 schools. (Doerr also backed a statewide school bond measure that eked out a victory on the same ballot that saw Draper's voucher plan go down in defeat.) In the late 1990s, Doerr, a onetime registered Republican, was one of the most prominent Democratic fund-raisers in the Valley; he raised so much money for Al Gore in 2000 that for a time the chant was "Gore Doerr in '04." "People grow up," said Bill Unger, a VC insider at Menlo Park-based Mayfield Fund. "John and Brook do this because they can. They are very promotional people and they push their own agendas." The same rebellious instinct that stirred so many Prop. 71 supporters in the Bay Area got the KP guys worked up, too. "We—California—*had* to do this," said one of the KP donor team, who spoke on the condition that he not be identified.

Working from Klein's list and their own BlackBerries, "donor team" members Doerr, Byers, and fellow health-care partner Joe Lacob set up a cell-phone tree designed to reach "basically every Silicon Valley big honcho," as DuRoss put it. "We just made the initial call to get Klein 30 minutes," the KP donor said. "That was our mantra: 30 minutes with Klein. *He's* the secret weapon." Apparently Klein delivered. From eBay founder Pierre Omidyar and his wife, Pamela, (\$1 million) to Google's Sergei Brin (another \$1 million) to the Gap's Don Fisher (\$250,000), checks with the names of the Bay Area's most famous innovators (many of them Republicans) found their way into Prop. 71's coffers. CEOs of companies in KP's portfolio (Nanogen, Handspring) kicked in some money, though not nearly as much as the KP crew itself: John and Ann Doerr gave \$3 million; Byers and his wife, Shawn, \$700,000; Lacob and his wife, Laurie, \$1 million. Other venture capitalists donated almost \$5 million total. The philanthropists Byers knew from raising funds (with Intel founder Andy Grove) for UCSF's seven-year \$1.4 billion capital campaign especially "got" the stem cell cause.

Of course, there were plenty of Valley luminaries who thought the Prop. 71 effort was misplaced, that instead of getting California to finance stem cell research, supporters should focus their energies on ousting Bush. "I'm giving all the money I have to give away this year to Kerry," said one biotech CEO close to Weissman. "Sure, I want Prop. 71 to pass. But this is the scariest presidential election of our lifetimes." Others found Prop. 71 fundamentally hypocritical: how could free-marketeers back a measure that was the definition of a big, bloated government handout to special interests? But the real question was whether anyone with deep pockets would actively fight back. As the months passed, this seemed less and less likely. The Catholic Church, the most obvious opponent, gave just \$50,000. The nurses union, which argued that the state had more important health care priorities, didn't have the dough to spread that message far and wide. Mel Gibson, who eventually came out against the measure, was a little too *The Passion of the Christ* to sway many voters. Still, the wait was nerve-racking.

## VII. The Wrong Way?

The campaign was nothing if not disciplined. The tagline Cures for California leapt from every piece of campaign communication. Save Lives with Stem Cells signs proliferated on lawns like dandelions. Equally consistently, the inevitable question "By when?" was met

with "5 to 10 years." But 5 to 10 years until *what*? The backers changed the subject. Still, nothing could change the facts. Typically, it takes up to 15 years—and \$800 million—to develop a single drug. For every one that makes it to market, 5,000 compounds crash and burn along the way. Even blockbuster drugs that make it past every regulatory hurdle can suddenly go *poof!* with a single FDA phone call—exhibit Vioxx. The truth: if stem cell research really had the potential to result in drugs and cures in just 10 years, Kleiner, Perkins and every other VC in the Valley would be funding start-ups right now, not just pushing for government money. Most people involved in Prop. 71 knew that both the timeline and the miracle claims were hype, pure and simple. Embryonic stem cells will make it easier to study Alzheimer's, for example, but they certainly won't cure it.

"The science always turns out to be much more complicated [than researchers and companies predict]," said Ed Hurwitz, a director at Alta Partners, a VC firm in San Francisco. Take antisense, a technology that focuses on fighting diseases before the proteins that cause them can even be formed. "Everyone talked about that as the magic bullet," Hurwitz said. "It hasn't paid off yet. Same for gene therapy [correcting defective genes that cause disease]. The industry is fraught with cycles of premature enthusiasm followed by disappointments." Meanwhile, not a single embryonic stem cell has ever been tested in a human being, for any disease. In animals, embryonic stem cells have made a sickly, incapacitated mouse scoot across its cage yet also have caused tumors; what will happen in humans? Is it even possible to grow stem cells reliably and consistently? "In order to promote this, Prop. 71 supporters needed to speak in black-and-white terms," said Maxine Singer, a biochemist and friend of Berg's (they've written three books together) who was the longtime president of Carnegie Institution. "But nobody knows yet what therapies will really come of this."

Weissman, more than most people, understands how uncertain stem cell technology really is. He cofounded SyStemix in 1988 primarily to isolate and produce blood-forming adult stem cells for transplants to treat cancer and other diseases, and he made millions when pharma giant Sandoz bought the company in the mid-90s. But Sandoz shut it down after a couple of years, and Weissman formed a new company, Cellerant, that's trying to use the same technology to do basically the same things. Cellerant still hasn't gotten to Phase I trials.

That entrepreneurs could score big under Prop. 71 was also a potential stain on the initiative. Weissman, for example, could get millions for his Stanford stem cell institute as well as, possibly, his companies; he also crowed about all the scientists he was hoping to poach from places like Harvard and Sloan-Kettering. Under the initiative, all of the funding decisions would be made by the Institute for Regenerative Medicine's 29-member board, probably chaired by Klein himself (he wrote the job description, and it fits almost no one else). The group promised to be highly incestuous: early appointees include Philip Pizzo, dean of Stanford's medical school; Robert J. Birgeneau, the new UC Berkeley chancellor; and Richard Murphy, president of San Diego's Salk Institute for Biological Studies. "Prop. 71 appears to have minimal safeguards against self-interested decision making," concluded the biotech newsletter *BioCentury*. "It's a big pork-barrel project," added health care VC Len Baker, of Sutter Hill Ventures. "It's not any different than the ethanol business—special business for midwestern farmers."

Not to mention that California—with a budget crisis rooted in Prop. 13, the ill-conceived ballot measure that was the granddaddy of them all—has plenty of other claims on its scarce resources. "Wouldn't you rather have good schools?" asked Hurwitz. "Basic immunizations and shots? Stem cell [research] needs to be looked at in light of opportunities lost." An economic analysis paid for by Prop. 71 concocted scenarios in which taxes from new researchers, buildings, and companies, plus royalties and lower health care costs, could lead to a net financial win for taxpayers. (Never mind that NIH funding has been shown to bring returns of just 25 to 40 percent on investment.) That analysis, however, was done by a Stanford economist based partly on interviews with not exactly unbiased sources: prominent stem cell researchers; Cal Tech president and Nobel virologist David Baltimore, another part owner of Weissman's Montana ranch; Larry Soler, senior legislative counsel of the JDRF, which donated \$1 million to the initiative; and others working to pass Prop. 71. As for the notion that new-fangled cell-replacement

therapies would eventually lower health care costs, most independent health economists said the opposite.

Finally, \$3 billion? When Weissman was first asked how much money they ought to throw at stem cell research, he tossed out \$300 million *total*, not per year for ten years. "Then when \$1 billion was floated I thought, 'Wow.' Three billion I never imagined." No one is willing to explain how the figure was arrived at. Suffice it to say, Klein and gang didn't want to go through all the trouble of getting an initiative passed, only to skimp on the payout. "It's a huge amount of money," said Luke Evin of MPM Capital, who funds early-stage health care companies. "A significant lab project would be half a million a year. With this money, you get 500 experiments a year. Personally, I think you could spend a lot less and still have great success." Hurwitz agreed. "When you spend this much, it creates enormous inefficiency."

"Is this responsible? It depends on your perspective," said a torn Brad Williams of the state's Legislative Analyst's Office. "Traditionally, bonds in California have been issued for roads, schools, facilities—bricks-and-mortar things that yield benefits over a long time. This is a different animal. Whether public benefits are high enough—that's up to the voter."

### **VIII. The Winning Way**

Some initiatives have all the luck. In June, around the time Prop. 71 qualified for the ballot, Ronald Reagan died, and Nancy Reagan told *Newsweek*, "There are just so many diseases that can be cured" by embryonic stem cells. In July, Ron Reagan Jr. backed federal funds for research on national TV during the Democratic convention. In September, the TV and radio ads began rolling out. In October, a handsomer-than-ever Brad Pitt announced his support in front of a blinding storm of flashbulbs. When Reeve died unexpectedly that same month, *People* put him on the cover and Yes on 71 decided not to pull his ads (Reeve's family wanted the ads to keep running, the campaign contended). Finally, with two weeks left, Governor Arnold Schwarzenegger gave the measure his vote-swaying seal of approval (he and Maria Shriver—the Zuckers' neighbors—discussed stem cells over dinner early on). "Policy people on both sides were working all angles to get to him," Zucker said. "We'd keep hearing from someone who knows someone that he sneezed to the right instead of to the left. We didn't know if he'd come out at all."

With so many things breaking 71's way, any attempts at organized opposition pretty much shut down. The most unlikely critic to emerge was the loosely organized Pro-Choice Alliance Against Proposition 71, whose most prominent member was Judy Norsigian, coauthor of the feminist bible *Our Bodies, Ourselves*. She worried that stem cell research would turn women into "egg factories." "There's no adequate data on superovulating drugs like Lupron," she said. "Tell me these drugs aren't dangerous. I'm for stem cell research, but not this way." Taking a similar view was Debra Berger, who heads the 58,000-member California Nurses Association. "I honestly thought I would be supporting this initiative," she said. "But women who participate in the research do not have adequate patient protections. Our organization was really surprised at how this was crafted."

What never emerged were high-profile Republicans who sell themselves on "fiscal responsibility" stumping against the size of the bond, the lack of oversight, or the obvious conflicts of interest. Berg takes credit for getting perhaps the state's most influential such private citizen, George Shultz, to publicly back the measure. This was no simple matter, because Shultz helped make George W. Bush president. Berg has known the former secretary of state since the mid-1980s. The first time they spoke about the topic was at a dinner party at Shultz's home. As Shultz often does at such gatherings, he asked Berg to give a talk about a current issue: stem cells. "Afterwards," Berg recalled, "George turned to me and said, 'It's a no-brainer.'" Shultz's wife, Charlotte, is a breast cancer survivor, which only added to his interest. So this fall, Berg and Klein swung by Shultz's office at the Hoover Institution to ask for his endorsement.

Late in the campaign, Shultz told a crowd of nearly 400 at a symposium on stem cell research, "I don't see any problem with California taking this up. Sure [other places] see us as a little nutty, off our rockers. It's true. Maybe this can be a differentiator. You know what I say: 'Great. Come on, all of you. Come to crazy California.'" Said Berg: "I regard getting George to come out positively as my most significant achievement for Prop. 71."

Still, given all the measure's built-in problems, it's surprising that conservatives didn't make more of an effort. The most obvious reason, of course, is that they figured their money could be better used in Ohio and Florida. But maybe they also figured that no matter what happened on Prop. 71, they'd come out ahead. If the measure tanked or squeaked to victory, they could argue: see, even in California, stem cell research is considered too far out. If the initiative passed, they could argue: see, now that California has picked up the slack, there's *really* no need for federal funding (a point of view that quickly surfaced in the *Washington Post*). What's more, a victory for embryonic stem cells would be red meat for evangelical Christians, who would use it as another rallying point, just as they've turned liberal victories on abortion and gay marriage to the right's advantage.

Or maybe opponents simply hoped that after it passed, Prop. 71's incestuous core would end up discrediting the whole promise of stem cell science. Indeed, despite Klein's remarks to reporters that California had just changed "the face of human suffering forever," as the weeks went by, he and other supporters seemed more and more anxious. Instead of focusing on stem cells' amazing possibilities, newspapers were filled with reports of university officials gleefully counting their windfalls (UCSF had its hand out for \$65 million) and hand-wringing about inevitable conflicts of interest within the Institute for Regenerative Medicine. Klein went into overdrive trying to distance his baby from images of a biotech gold rush. A key KP player turned squeamish about how much money he'd given the campaign. The irrepressible Weissman was asked to tone it down.

Prop. 71 has entered the inevitable "be careful what you wish for" stage. But start-ups are always messy; the difference is that most of the time, the problems get worked out in private, not with the *New York Times* pressing its nose to the window. And no matter what happens next, nothing about the pure science itself has changed: stem cell research could change the world. In his remarks at the October symposium, Shultz referred several times to "close friends on the Stanford campus," whom he admired and respected enormously. "I can't be certain," Shultz admitted. "But I can only tell you that these folks who live on the edge of scientific achievement are wildly excited."