PART I

TROUBLE IN ALLIANCE LAND

In the beginning stage of our research, we believed that we knew the issues and problems that needed to be addressed. We realized that biotechnology alliances had problems (as all organizations do) and that biotechnology alliance leaders faced challenges and hurdles (as all leaders do).

What we found was different from what we expected. The nature, magnitude, and frequency of problems surprised us. From our experiences in the field, as consultants and as researchers, we came to appreciate the extraordinary complexity of these organizational forms. Despite their proliferation, biotechnology alliances (most of them between a small and a large company) are very difficult to lead and manage well. Over and over, we heard people talk about the challenges in making alliances work. We witnessed the difficulties first hand, including the "untimely end" of a collaboration and the resulting demise of a company.

The first two chapters in this book present a backdrop of alliance problems at two levels of description and analysis. In Chapter 1 we provide a case study of the real (but disguised), particularly troubled alliance between *Lucida Biotech* and *Pharma Sciences*. As you read the case, you may be struck by how familiar the story is in a few or many regards, whether from your own first-hand experience or from the second-hand experience of others. In Chapter 2 we go beyond the Lucida–Pharma case to look at biotechnology alliances in general. We believe that most readers

will not be surprised by the magnitude of the general problem. Nonetheless, it is worth underscoring that the typical biotechnology alliance is troubled. Some end abruptly and prematurely; others struggle over time, expending unnecessary resources. Many face problems large enough to hamper their effectiveness, or even threaten their success.

CHAPTER 1

A CASE IN POINT: THE LUCIDA–PHARMA ALLIANCE

Research alliances between small biotechnology companies and large pharmaceutical firms play a crucial role in helping to "close the innovation gap" in the biopharmaceutical industry; and, they are expected to be a major source of new therapeutics in years to come.[1] But, these efforts are very difficult to lead well. A typical research alliance or discovery alliance (we will use the terms interchangeably):

- Is fraught with uncertainty, ambiguity, and risk (typical of early stage research efforts)
- Involves dissimilar organizations (in terms of culture, size, power, and expertise)
- Is extremely important to the small partner (a failed alliance can be fatal to a biotechnology company)
- Is only modestly important to the large partner (these companies manage a portfolio of alliances with a number of biotechnology firms).

The task of leadership is even more complicated than the points above suggest, because the responsibility for keeping an alliance on course should

[1]Van Brunt, Jennifer. Innovation Drives Alliances, *Signals* magazine, www.SignalsMag.com, 1999.

not be shared equally by the partners. In fact, we have concluded that responsibility *should* rest on the shoulders of leaders in the biotechnology company. For a number of reasons that will be discussed in this book, alliances should be led and managed by the "little guys," even though it is the "big guys" who are experiencing the innovation gap and are concerned about their pipelines.

We begin this book with a real case, written from the perspective of the biotechnology partner. We want to introduce the people and the issues involved in the alliance between *Lucida Biotech* (the small partner) and *Pharma Sciences* (the large partner) right away, for several reasons. First, in and of itself, the story should be instructive. The case should provoke you to think about what happened, what was done, what might have been done differently, what you would have done, and so on. Second, we refer to this case throughout the book, for purposes of illustration and emphasis. Third, although this is the story of only one alliance, its characters, plot, and ending are all too familiar in this industry. The experiences of the *real* (but disguised) people in these *real* (but disguised) companies are, unfortunately, not unusual.

THE CASE OF A TROUBLED ALLIANCE

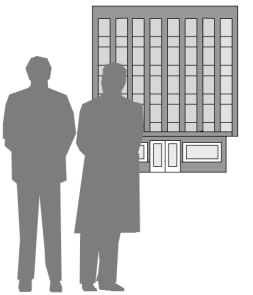
Lucida History

The Startup. In the early 1980s, Lucida Biotech was one of many companies emerging in and around "Genetown" and its world-renown universities. Lucida was formed when Dick Rosenbloom, an expert in a particular type of protein, was funded by venture capitalists hoping to "catch the wave" of promising biotechnology discoveries (refer to the cast of characters).

For the next 6 or 7 years, Lucida was essentially Rosenbloom's company. There was a group of six senior scientists—some of whom came from other biotechnology startups and the rest from universities—each in charge of a research program. They all began as project leaders and "advanced" to managers at the same time. This group, plus Rosenbloom, constituted the senior management of the company.

In 1988, the venture capitalists on the company board urged Rosenbloom to take Lucida public, but the banks strongly recommended that he hire a business person first. A new president with business expertise was

"Big Guys"
(big pharmaceutical companies)



"Little Guys"
(small biotechnology companies)

Cast of Characters

Pharma Sciences ("Big Guys")

Philip (Phil) Dean, MBA
President and CEO since 1985

H. Ross Johnson
Chief Operating Officer (hired in 1996)

Lucida Biotech ("Little Guys")

Geoff Pitchly, JD
President and CEO (hired mid-1990)

Richard (Dick) Rosenbloom, PhD
Founder (1982) and Chief Scientific Officer (CSO)

Mark Santoro, PhD, DSc
Vice President, Research (hired in 1998 from academia)

Stig Johanssen, PhD
Vice President, Development (hired 1992)

Janet Herman, MBA
Vice President, Strategy (hired 1992)

William (Will) O'Brien, PhD
Senior Scientist (joined company shortly after founding)

First scientist (program manager, hired in 1998 from a large pharmaceutical company)

Second scientist (one of six senior scientists, with Lucida since shortly after the founding)

hired; however, he left about a year later, after taking the company through a successful initial public offering (IPO). Dick Rosenbloom found himself president, again.

Around 1990, money was tight, and some of the staff had to be let go. At about the same time, Geoff Pitchly, a lawyer from an international subsidiary of a big pharmaceutical firm, was hired as president. Rosenbloom took on the title of Chief Scientific Officer, equivalent in rank (at least in the way the company worked on a daily basis) to Pitchly. Rosenbloom was

then working on a project of interest to a large health care company, not Pharma Sciences, and an alliance was struck between the two organizations.

That deal was a collaboration in name only. No scientists from the other company ever worked with or even met any of the Lucida scientists. As described by a Lucida project manager, money was provided by

> . . . a conservative, solid, methodical company that regarded Lucida as someone hired to perform a service for them. Their idea of motivation was to fire the bottom 10% of their own people every year. But, they experienced a 20% compound annual growth rate for nearly two decades!
>
> There was never a meeting between our scientists and theirs. This was strictly a senior management deal. Their top management did insist on attending all quarterly meetings of Lucida's research program, and they brought along their consultants as experts. Those meetings were incredibly formal—the reports were so thick and detailed that we hated the approach of the quarterly meeting. It was very difficult to keep the Lucida scientists motivated, because everything stopped for 2 weeks while they assembled the report.

Compared with other biotechnology alliances, this deal was anomalous in two important ways. First, there was no scientific collaboration; second, the duration was almost a decade. Not until 1998 was the crucial clinical trial completed, demonstrating the hoped-for efficacy of the original compound. People in the company expected that this would become Lucida's first product.

Evolving Company Structure. One of Pitchly's tasks as CEO was to build a leadership team that could begin to craft a strategy for Lucida. A scientist who had been there almost since the inception of the company described what had been Lucida's approach as an *organ of the month club* strategy. Not atypical of other startups, Lucida's early R&D direction was not so much set in advance as described in retrospect. The company had expertise that was applied to whatever currently appeared promising. However, Rosenbloom expected that Lucida's expertise would be broadly useful, and he encouraged researchers to patent aggressively.

Although many were speculative patents, they did put Lucida far ahead of other biotechnology firms. These patents also caught the eye of the chief executive officer of Pharma Sciences, Phil Dean. Dean had been hired a decade earlier from a multinational medical products firm and sat on the

Board of Directors of Lucida, so that he knew Pitchly. (In addition to his professional relationship with Dean, Pitchly had a social relationship with Pharma's chief operating officer, H. Ross Johnson, who had been at Pharma for about two years.) When Dean recognized how strong Lucida's patent position was, he initiated the process that resulted in a formal alliance between the two firms starting in 1997.

Pitchly had hired vice presidents of strategy and of clinical development when he first joined Lucida. In 1998, a few months after the Lucida–Pharma Sciences alliance was signed, he actively recruited someone to lead research, with the encouragement of Rosenbloom. (It should be noted that Rosenbloom's strength was more in his conception of research experiments than in the actual leading of research scientists.) Following intense interviews with both Pitchly and Rosenbloom, Mark Santoro was hired as vice president of research, at the same level as the VP of development. Santoro came from an academic laboratory, where he was professor of molecular genetics at the medical school. He had a track record of bringing in large National Institutes of Health (NIH) grants, had an excellent reputation for leadership in the teaching hospital where his laboratory was located, and was interested in moving to industry.

Lucida Scientists. When he first interviewed at Lucida, Santoro was told about several people in the company, and one of Pitchly's comments stuck in his memory. Pitchly remarked that their lead bench scientist, Will O'Brien, was a difficult person and someone he would have to "deal with." O'Brien had been hired by Rosenbloom from the NIH and was considered a Rosenbloom protégé. Santoro assumed that Rosenbloom could not, or would not, manage O'Brien, and Pitchly appeared very unwilling to deal with him. He felt that one reason for hiring a VP of research was that *someone* needed to take on this job. The other remark Pitchly made was that O'Brien had expected Santoro's job; in fact, he had formally applied for the position.

When Santoro actually met O'Brien, it was not an auspicious beginning for their relationship. A luncheon was set up with him and two other scientists who had been there from the company's beginning. When they walked in, O'Brien did not meet Santoro's eyes, nor did he speak a word. Santoro tried to engage him in conversation, but only when O'Brien talked about a new research program did he become animated. However, the other two scientists did not appear to share his enthusiasm for the project.

Senior scientists at Lucida.

In fact, Santoro said that he saw little camaraderie among the three senior scientists—it was as if they worked at three different companies. They all had their own stories, and each story was somewhat different from the others'. Santoro described his interaction with O'Brien at that meeting as "lack of recognition, lack of engagement, and downright avoidance."

After several months in the position, it became clear to Santoro that what O'Brien cared for was science and creativity, not personal interaction. Although he talked about team spirit, he was not a team player. He certainly was competent and very quick to make innovative connections. But, Santoro noticed that once O'Brien had made up his mind about anything—people, results, procedures—he never changed his opinion. O'Brien had, he believed, a "black and white" way of approaching people and work.

Santoro soon realized that Rosenbloom's history of running the company solo for so many years had resulted in an organization that essentially revolved around him. "Power" to the scientists meant access to Rosenbloom, over or around the vice president of research and the vice president

of development. Santoro also noted that Rosenbloom was very forgiving in his relations with O'Brien:

> They've worked together more than a decade, and they have a nice pattern of relating to each other. Rosenbloom tolerates O'Brien because, I think, he can't confront anyone. He sees that O'Brien is intolerant of others' opinions. He knows that happens, because he is very articulate about what O'Brien's problems are. He's not blindered about them; but, he tolerates them and lets them happen.

Pharma Sciences History

Like other major pharmaceutical companies, Pharma Sciences was *big*, especially in comparison with Lucida. The company had offices all over the world and counted employees in the tens of thousands. Revenues were in the billions (US$), and the firm was involved in at least 20 alliances with biotechnology companies at any given time.

Senior managers were seasoned executives in health care and experienced at drug development. Phil Dean, CEO, was described in the press as a "tough and effective manager, demanding and getting results from those who work for him." He had been with the company for many years and had taken over the top position when Pharma was barely profitable. Dean sold off non-pharmaceutical businesses, built a highly respected management team, reduced the number of research programs in which R&D scientists were involved, and instituted strict budgetary controls. Another article described Dean as a "tireless worker with a penchant for midnight staff meetings. He formed 'productivity committees' to find areas where costs could be cut."

As a result of Dean's efforts, the company's profit improved and investors returned. Pharma Sciences became known as one of the most fiscally conservative of the majors, and executives maintained that they would not veer from a conservative course. Pharma Sciences also had a strict, quantitative approach to portfolio management. Development programs that did not meet the required and preset criteria were outlicensed, temporarily "shelved," or stopped outright.

Dean was appointed to the Board of Directors of Lucida Biotech in the early 1990s. He became impressed with the firm's aggressive patent strategy, and he believed that Lucida's expertise fit well with one of the large

Pharma Sciences research program. After several preliminary conversations with Pitchly, Dean sent representatives from Pharma Sciences to Lucida, and a contract was drawn up in late 1997.

The Lucida–Pharma Alliance

We began to interview people at Lucida in the spring of 1998 and continued through the fall of 1999. The first person we spoke with was Mark Santoro. He had joined Lucida about a half-year earlier, and he was concerned about the collaboration:

> Stig [Johanssen], our VP of development, was in charge of the alliance, but he had everyone in R&D reporting to him. When I was asked to attend meetings between Lucida and Pharma Sciences about 5 months ago, my assessment was that the alliance was headed for disaster. Stig had too many responsibilities and could pay little attention to the collaboration. Moreover, O'Brien played a large role in the work. There was a new program manager, but no one—including Stig—supported him and no one on the team paid attention to him.
>
> Ostensibly, there was a Lucida core team being coordinated by the new program manager, but because he was not supported, people simply did not show up for team meetings. Oh, they would show up at the biweekly meetings with Pharma Sciences, but they spoke independently, without vetting things with their group. Usually, Lucida scientists ended up arguing with each other in front of the Pharma scientists. This was just awful.
>
> Eventually, and with some difficult negotiations involving Stig, I was put in charge of the Pharma alliance. After a lot of work on my part, we are beginning to have a real team and a much more focused program of work here. The alliance is not yet where I want to see it, but it seems to be better than it was. Still, O'Brien functions autonomously.

About 2 months later, we spent time with Lucida's president (Geoff Pitchly) and VP of strategy (Janet Herman). For Pitchly, no alliance was problem-free:

> Alliances are always difficult, because there is never parity between the partners. There's no parity between Lucida and Pharma Sciences. They have sales. We don't! We don't have sales or royalties; we're not an operating company. We want to become one, though.

> I have to credit Dean for a great deal of perseverance at Pharma, for a bulldog approach to improving the company. He sits on our board, and I have a social relationship with Pharma's COO [Johnson], so there is a level of knowledge and respect between the companies. Pharma was interested in a partnership with us on a different project very early in our research. We still have a way to go, however.
>
> Remember that, despite the relationships, the agenda for each company is different. And, it is still business. You can be friendly with people, you can respect them, but their business is to build Pharma and mine is to build Lucida. I think you can do that collegially; but, we had issues to be resolved at my level and other levels in the company.
>
> I also worry that Pharma's priorities might change. What happens if another of their external initiatives takes off? We're just one of many collaborative research projects to them, some number in the large queue of resources.

Janet Herman was more optimistic:

> Alliances work well if the two folks at the top are personally dedicated to it. For example, our relationship with Pharma works because Pitchly and Dean are dedicated. This is Dean's deal. When the opportunity was presented, there was skepticism on his management team, some discussion of why Pharma should do this, and so on. But, it was Dean's personal project, so they made an effort to see if the science would work. The fact that you have commitment at the top changes the interactions at the lower levels.

We remained in touch with Santoro, and about 6 months after this discussion we returned to Lucida. We spent time with two senior scientists, each of whom had major roles in the Pharma Sciences alliance. At this point, they viewed the collaborative interactions as troublesome and were attempting to understand what had gone wrong, and what was going wrong, as we spoke:

> **First Scientist** (the new program manager, who joined Lucida at about the same time as Santoro)
>
> When I look back to the initial meetings between the two groups of scientists, I realize that Lucida went in and did a 'data dump' and *then* Pharma scientists began to work out just what was involved. A number of the studies were not consistently reproducible. So, Pharma asked for some repeat studies in outside labs.

When those results came in, they were ambiguous. It took weeks before we could understand what was going on. Turns out there are longtime scientists in Lucida who are fonts of information on the compound. But, they sit in a meeting with Pharma people and bring something up and we say to ourselves: "Oops! I never heard that before!"

One of my counterparts at Pharma told me that he overheard Dean say: "If there were a lemon law for biotechnology, this alliance would be eligible."

The head of the project at Pharma became so bitter over the way these meetings went that he would not return our project manager's phone calls. Publicly, they called each other names and had a pissing contest in one of the meetings.

I spent a lot of time trying to rebuild relationships. The Lucida side of the team had weekly meetings to hash things through. Then, every protocol was reviewed by the whole project team, and both Lucida and Pharma people had to agree. After that, we started to get good data.

The biggest problem was that, instead of pulling back and reviewing our data thoroughly when they began, Pharma scientists just went full steam ahead. Then, all hell broke loose. It was: "full steam ahead;" then, stop dead. . . .

Second Scientist (one of the six senior scientists who constituted the early "management team" of Lucida)

Now that we're having problems, I can think of a number of earlier issues that concerned me. For instance, I think there was a certain amount of resentment at Pharma that management [Dean] went out and brought a molecule in. Johnson, their COO, was interested in our compound because of his prior experience in a related area. Also, he and Pitchly are friends, so Johnson knew about the project. But, that was not scientific or clinical experience.

Before we signed the deal with Pharma, several of our scientists went to a big symposium at NIH on [the relevant disease]. Interestingly, no one from Pharma went. We came back from NIH, and half of the scientists said: "This is daylight madness!" The other half said: "We'd better be very careful if we get into this work." I don't think the Pharma scientists realized what was involved, because they had not been to that NIH meeting.

Anyway, Pharma entered a partnership with Lucida, hoping to go from our bench results and our early in vivo work into the clinic quickly. We start to see some results that are inconsistent, but that is eventually straightened out.

I would also say that we did not manage the relationship terribly well. At the time, the work was being run by several people, but Pitchly said we had to

have one person in charge of the alliance. That was a problem, because O'Brien thought he should be in charge.

O'Brien is very smart scientifically, but he is not managerially inclined! He believes that, if you're the boss, you tell people what to do and they do it. He's one of my best friends, and we've worked together for years. But, he has said to me: "I'm the only intelligent scientist in this company. Everybody else is a blithering idiot!" Now, I'm a scientist, and I'm his friend, but he says this with genuine sincerity.

So, O'Brien believed he should be in charge of the program, but Pitchly—and Rosenbloom—did not want to put him in charge. Improbable as this seems, Pitchly took charge of it himself.

We engaged in stealth management of the alliance for a while. The day before a meeting between Lucida and Pharma, I would put together the agenda and tell Pitchly what points people should address. Of course, during the joint team meetings, O'Brien was publicly dysfunctional.

We certainly did not come across as a coherent organization. Pharma wanted certain data. O'Brien had the data, but because he was not in charge, he was not going to give the data to the Lucida project manager.

I also believe we have problems, now, because this deal was done at the highest levels. I think, if you talked with Pharma scientists, they would say the deal with Lucida was forced on them by senior management. They had questions that were not adequately answered, and they did not have time to ask questions that should have been asked.

Because the deal was done from the top, Pharma management expected to go into the clinic immediately. When scientists from both sides got together, it became more and more evident that this program was not yet at that stage. I don't know if Pharma will have the staying power that we need.

A few months later, it became apparent that Pharma did not have the "staying power," and Lucida executives faced the painful termination of this alliance.

An Untimely End

Public statements made by the respective executives about the termination of the Lucida–Pharma Sciences deal reflected how important (or not) the alliance was to each partner. Although each company's annual report carried

an announcement, the location of the announcement was an interesting commentary, in and of itself.

For example, a reader would have had to comb the Notes to Pharma Sciences' Financial Statements to find that a research alliance with Lucida had been formed in late 1997 and that $20M had been paid out in licensing fees. The one, brief paragraph concluded that Pharma Sciences had returned the "responsibility for [eventual product X] development to Lucida" in fall 1999, but retained the option of reassuming development for another calendar year. (In fact, they did not exercise that option.)

In contrast to the location of the Pharma Sciences announcement, the subject was addressed upfront by Pitchly, Lucida's president, in the introductory letter to shareholders. His letter stated: "The Pharma Sciences' agreement has been modified and, subsequently, promising new data have been discovered by Lucida researchers relevant to [Product X]."

In addition to suggesting differences in the importance of the alliance to the respective partners (reflecting the different financial dependence of each company on the alliance), the preceding statements also reflect the different impact of "bad news." At the time, Pharma Sciences was engaged in about 20 research collaborations with small biotechnology firms, reported product revenues in the billions of dollars, and had achieved a 50% increase in profits from 1997 to 1998. Lucida, on the other hand, had just completed one alliance with a large health care company; had no product revenues; and had *decreased their losses* by a few million dollars between 1997 and 1998. Obviously, Lucida was much more vulnerable to bad news about the partnership and the more dependent partner.

A short article in the press reported the following:

> The chief executive of Pharma Sciences said they decided to shift their R&D allocation to compounds with greater likelihood of near-term success. Lucida researchers had described the early in vivo work as promising, but both groups subsequently found ambiguous data from Phase I studies. Pharma Sciences was concerned that the ambiguity could delay even the design of Phase II trials by 12 to 18 months.

Another was more forthcoming, stating that Pharma Sciences had "abruptly withdrawn their scientists from the project . . ."

> As a result, Lucida's share price dropped precipitously by more than one-third. The value of the original contract for Lucida was as much as $100 mil-

lion over 3 years. Now, Lucida is no longer eligible for most of the $80 million in milestone payments.

The reason for termination did not appear to be the lack of promising leads, nor the failure to show efficacy in Phase I trials (the data were ambiguous, as opposed to negative), nor a change in Pharma Sciences' priorities (their annual report described ongoing research efforts in the disease for which Product X would have been a therapy). Rather, the ambiguity of data resulting in a possible delay of 12 to 18 months was unacceptable to the large firm's management.

Because of the immediate and precipitous drop in Lucida's stock price, the public market was not a source of additional funds. Although the executives tried, they could not find other sources of "creative financing." That, coupled with loss of milestone payments from Pharma Sciences, meant that certain research programs at Lucida had to be stopped. People were let go—in fact, the company was immediately cut in half.

The situation became grim. When the first draft of our book was written, Lucida remained in business; but, by the time we went to press, the company no longer existed.

The untimely end of Lucida.

CLOSING THOUGHTS

The experiences of scientists and executives in Lucida (and Pharma Sciences) are not unique. Over the 12 or so months that we were writing this case study, we were also interviewing numerous individuals in biotechnology and large pharmaceutical firms and hearing similar stories. Our book is based on the experience of our interviewees. It is also based on our own experience, as consultants to both large pharmaceutical and small biotechnology companies (Sapienza, Stork, Lombardino) and as a scientist in a major pharmaceutical company engaged in alliances (Lombardino). We have used conceptual material and a historical perspective to provide context for our insights, although we have made every effort to discuss concepts and theory in an accessible manner. Be assured, however, that the statements we make and the positions and perspectives we describe are indeed grounded in both experience and theory.

Our collective first-hand experience, conceptual background material, the wisdom and ideas of others, and so on, have led us to one major conclusion that we want to state upfront: Management and leadership of these alliances *should* rest squarely on the shoulders of people on the biotechnology side. Alliances should be led and managed by the "little guys," even though it is the "big guys" who are experiencing the "innovation gap" and who need biotechnology expertise beyond their own in-house R&D.

For many of you, the Lucida case will have raised new questions and new ideas about alliance issues and alliance leadership. We expect the same to happen in a number of the chapters that follow. Of course, we also expect to provide answers to at least some of your questions. But, the first step is to have new questions and new ideas.

Think differently . . .
Lead differently . . .
Make alliances work.