



**Leadership Dialogue:
The Rockefeller Foundation and
the International AIDS Vaccine Initiative**

Overview

In 1993, while working as a health sciences program officer at the Rockefeller Foundation, Seth Berkley was struck by how few organizations were working to develop a vaccine for the AIDS virus. He understood that AIDS/HIV was increasingly becoming a devastating global epidemic, and he pushed to get the foundation involved in speeding the development and distribution of a vaccine.

Initially, the Rockefeller Foundation convened a series of meetings to bring together scientists, public health officials, and leaders from the pharmaceutical industry and non-governmental organizations to discuss ways to advance development of an AIDS vaccine. These meetings became the impetus for establishing the International AIDS Vaccine Initiative (IAVI).

HIV/AIDS has infected more than 70 million men, women, and children. IAVI's literature notes that the world has not experienced an epidemic as devastating as this since the great plagues of the Middle Ages. Most research efforts to date have focused on treating those already infected rather than on creating vaccines to prevent AIDS. Vaccine research and development commands only about two percent of the \$20 billion the world spends annually on AIDS research, prevention, and treatment.

After studying the issue, Berkley and Kenneth Prewitt, then senior vice president of the Rockefeller Foundation, recognized two important elements of the issue: First, most of the research on vaccines had focused on application in industrialized countries, despite the fact that the vast majority of new infections occur in developing countries; and second, vaccine development was an extremely high risk project. To for-profit companies hoping to ensure a profitable return on their investment, vaccine development posed too great a risk.

Peter Goldmark, then president of the Rockefeller Foundation, thought a public/private collaboration could be the solution. The result was IAVI, which was designed to mitigate the risk and costs but to encourage groundbreaking innovation in research and development.

Launched within the Rockefeller Foundation with the understanding that it would become an independent 501(c)(3), IAVI would advance the development of a vaccine. Its founders believed that once they had developed an early workable product, industry would acquire the technology and assume responsibility for scale-up, distribution, and sales.

The creation of IAVI surfaced several key questions and tensions within the foundation. First, it raised the question of how operational the foundation would be. In the 1920s and '30s, the Rockefeller Foundation was one of the largest and most successful operating foundations focused on global health issues with a staff of active researchers and scientists. By the 1950s, it had consciously moved into a non-operational role. But in the mid-'90s, IAVI, along with a few other initiatives being supported by Rockefeller, created tension within the foundation about the level of its operational involvement.

Moreover, IAVI's quest presented an enormous challenge. Funding the development of a product is fundamentally different than funding social services: Developing a product costs far more—in this case hundreds of millions of dollars—and is far riskier. Unlike a social services program, which even if not technically a success can still produce some good, a vaccine may not work at all. That risk weighed heavily on the board.

When IAVI was launched, the IAVI board as well as Rockefeller wanted to find a seasoned executive with a vaccine research background. After an extensive search during which two candidates declined offers, the IAVI board turned to Berkley to head the initiative. They decided that Berkley, as IAVI's founder, was the true entrepreneur who had the passion for the concept and should lead the new organization.

The Rockefeller Foundation used its leverage in a number of ways to help incubate IAVI. Beyond the scientific meetings that attracted some of the biggest names in the field, IAVI's association with Rockefeller opened doors with other funders. Berkley notes, "Had we just started as an outside organization, we would have had zero chance of doing this."

One of the great challenges that the Rockefeller Foundation and IAVI have encountered is the question of how long this relationship should continue. When the following dialogue occurred in October 2003, the Rockefeller Foundation, suffering a sharp downturn in its endowment, had stopped funding IAVI. The organization had been so successful in raising money from other foundations and through government grants that the Rockefeller Foundation decided IAVI could survive without its support.

Berkley clearly disagrees with this assessment. He believes that Rockefeller should continue its support as a signal to other funders of its commitment and that IAVI will need its support during the many years necessary to develop a vaccine. The challenge, he notes, is for funders to invest in the long term—15 to 20 years—to achieve a solution, which is a commitment few foundations are willing to make.

About the Organizations

The International AIDS Vaccine Initiative (IAVI) is a global organization working to speed the development and distribution of preventive AIDS vaccines. IAVI's work focuses on four areas: mobilizing support through advocacy and education; accelerating scientific progress; encouraging industrial participation in AIDS vaccine development; and assuring global access. IAVI was born out of the recognition that the best long-term solution to the growing AIDS epidemic is a vaccine.

The Rockefeller Foundation is a knowledge-based global foundation with a commitment to enrich and sustain the lives and livelihoods of poor and excluded people throughout the world. Its grantmaking is organized around four thematic lines of work: Creativity & Culture, Food Security, Health Equity, and Working Communities.

In addition, the Foundation supports various regional and special programs, among them the Africa Regional Program, Southeast Asia Regional Program, Communication for Social Change, Public/Private Partnerships, and Global Philanthropy.

The Rockefeller Foundation focuses on joining forces with governments, industry, other foundations, and nongovernmental organizations to ensure that poor people are included in decisions that affect their lives.

By the Numbers

Rockefeller Foundation

Funds Granted Annually:
\$136.2 million (2002)

Staff Size:
150

Geographic Area of Focus:
Worldwide

Types of Organizations Funded:
Grantmaking is organized around four thematic lines of work: Creativity & Culture, Food Security, Health Equity and Working Communities. In addition, the Foundation supports various regional and special programs, among them the Africa Regional Program, Southeast Asia Regional Program, Communication for Social Change, Public/Private Partnerships, and Global Philanthropy.

International AIDS Vaccine Initiative

Year Started:
1996

Annual Operating Budget:
\$59 million (2003)

Mission Focus:
Ensure the development of a safe, effective, accessible preventive HIV vaccine for use throughout the world.

Services Provided:
Advocacy; policy analysis; vaccine research & development including expertise in clinical trials, regulation, project management, manufacturing, process engineering, and research.

Funder/Nonprofit Relationship

Year Relationship Started:
Investigation 1993, incorporated 1996

Last year of funding:
2002

Total Dollars Granted to Nonprofit to Date:
\$8.98 million

Dialogue

The following excerpts are from a conversation held in October 2003 at the IAVI offices in New York City. Participants were:

- **Seth Berkley, President & CEO, IAVI;**
- **Charles Gardner, Associate Director for Health Equity, Rockefeller Foundation;**
- **Paul Klingenstein, General Partner, Abdare Ventures;**
- **Kenneth Prewitt, former Senior Vice President, Rockefeller Foundation; and**
- **Alfred Wise, Community Wealth Ventures, moderator.**

Moderator: How did IAVI start out?

Berkley: We were at an interesting point in Rockefeller in that the leadership of health sciences was in transition. At that point there really wasn't interest in creating lots and lots of new programs. We were very active in AIDS in Africa and AIDS in general. We had become very quickly the largest foundation internationally funding AIDS work.

A group of people came to us and said the AIDS vaccine effort is dead. From my perspective, that was a great surprise because I assumed that the world was doing everything it could. We began a formal investigation at Rockefeller including a series of meetings to discuss AIDS vaccine efforts, culminating in a large meeting in the foundation's conference facility in Bellagio, Italy, to find out if there was a problem, which of course there was. Then a series of meetings followed to see if something could be done about it. That led to the birth of IAVI. Rockefeller played an incredibly important role at the beginning and later on as well in incubating it, in making my time available and using the Rockefeller facilities. Rockefeller did the communications work in-house as well as the initial infrastructure work and the staffing of the initial team. Right from the beginning, it was an idea that we should use Rockefeller to get this going because of its prestige, but we should very rapidly

try to move it outside of Rockefeller. We started to create a 501(c)(3) almost immediately even though it was sitting inside of Rockefeller.

Prewitt: I am going to start us in the 1920s. Before the expressions "high engagement" or "venture philanthropy" were invented, there was the Rockefeller Foundation, which was fundamentally an operating foundation. The distinction between an operating and grantmaking foundation did not even exist in the law at that stage. Fundamentally, the Rockefeller Foundation, especially in its public health and biomedical research area, was an operating foundation in the sense that people were on its staff and were paid to do that work. Then it got out of the operating foundation business by the 1950s. I run through that history because Rockefeller had the experience of not incubating things but running things, especially in the field of public health.

Therefore, when we get now to the '80s and the '90s, this history is part of the culture of the place, point one. Point two is the Rockefeller Foundation was the most important private foundation in the field of international health when the AIDS crisis hit in 1981 or 1982, before it was even recognized, before it was even called AIDS. The Rockefeller Foundation ignored it and ignored it because it was going to go away, ignored it because they did not understand it, ignored it because it was always working on something else. I got there in 1985. In fact, when Seth came and started talking about AIDS to his immediate supervisors, they did not want him to talk about AIDS. He worked on some other quite interesting things but not AIDS.

When IAVI came along in the Rockefeller culture, it had two kinds of barriers to cross. One was, can you incubate? Can you be quasi-operational for a period? And second was, should you be doing AIDS? The other thing going on in Rockefeller at that time—not just in health but particularly in health—was the question of whether this was a moment when private philanthropy should

form partnerships with the for-profit sector. There were various conversations going on. And for this one I credit Peter Goldmark, who was the president at the time. If he brought a single big thing to the foundation, it was that we could work with the for-profit sector. There was internal staff resistance and skepticism because that is not something that we had done. I certainly was one of those who did not quite figure out how in the world we would do that. Seth was much less reticent. He was much more comfortable with the idea that you might have to work out deals with for-profit firms, especially if you are going to get any kind of huge research-and-development investment going with something like an AIDS vaccine, even though we were not talking about an AIDS vaccine at that time.

I want to cover that background because the foundation is not a high-engagement organization. Therefore, it is not easy to explain why IAVI came along in a foundation that wasn't focusing on AIDS and didn't want to. We did a spinoff, like IAVI, of something called the Energy Foundation. It was again an incubation that was its own 501(c)(3). We started something in Africa: African Economic Research Consortium. The idea of starting to do things that we would ourselves be engaged in or have some governance responsibility for was growing to be part of the culture in this period.

Berkley: There was a very interesting split at this time in the officers in the foundation. There was a group of officers who were excited by this idea and felt in fact that we should be operating, and there was another group that felt we shouldn't be. The lawyers would remind us that we were not an operating foundation. So there was a real clash of culture.

Klingenstein: When I got to the foundation in 1997, I had been working for 15 years as a venture capitalist in biotechnologies and medical technologies. I was involved serendipitously. Peter Goldmark had heard of my background and said you need to help us do this. He had a very compelling but vague notion

On Leadership

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“At the end of the day, we decided that a committed entrepreneur who understands the challenges is more likely to succeed than somebody who has just the right pedigree. ... We finally knew what the best candidates looked like, and Seth looked better than anyone else.”

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about what could be accomplished through the interaction of the private sector and the philanthropic foundations. I don't think anybody was very clear. There were a number of statements being made saying there are companies out there that make vaccines, this is a huge public health problem and something should be done.

At the time, I was on the board of a vaccine company, and I had a lot to do with several of the larger companies as co-investors on a vaccine project. We had to go through this period of learning a second language because I did not understand how these were going to come together. There were many others who didn't understand that this was not the way project resources were allocated.

This was not a market failure. There are four or five major actors in the vaccine business, and they were minimally engaged, or they were cosmetically engaged, but they weren't fully committed to HIV vaccine discovery projects. The question is why weren't they. One of the first things I did with Seth was to go talk with heads of R and D to try and get them to be very straightforward about why they weren't. They admitted that they weren't, and it was perfectly rational to say this is a very challenging discovery project and it has unprecedented risk. We are not clear what the pricing will look like. We don't know what the ability to pay will be and the affected populations. That helped to define the problem for both sides and for me, too.

Moderator: Let's go back a step to talk about the culture at Rockefeller and how IAVI was launched from the notion that AIDS is something that should be addressed.

Prewitt: In an odd way, one of the reasons to go the 501(c)(3) route was to make sure IAVI would have an identity and have an institutional home even though it was totally internal money at the beginning. It was partly to protect the idea and the person who had the idea. There is no way that this could have ever come out of the Rockefeller Foundation without Seth. He needed support and he needed this, that, and the other, but it wasn't as if the Rockefeller Foundation board or the senior management was sitting around saying wouldn't it be marvelous to do an AIDS vaccine and who would we hand this portfolio to. Just the opposite. You have somebody pressing against these kinds of institutional barriers and pressing very hard with whatever avenues were available at the time. I had a lot of confidence in Seth. I did not quite understand the idea itself. I take zero credit for any of the conceptualization but had a lot of confidence in the individual and therefore was willing to go out on a limb on his behalf.

At that time, there was an effort to get rid of Seth. It is mushy because these things are always mushy at the edges. Seth was not being treated in my judg-

ment with the kind of institutional respect that he needed. How it happened is so idiosyncratic. It wasn't the foundation deciding it was time to be a high-engagement philanthropy. It wasn't the foundation deciding to do an AIDS vaccine, and it wasn't the foundation trying to decide any of these kinds of things. It was a person who was being pushed to the edge, and his major supporter inside was also going to leave. That then created for us the only mechanism that seemed to be available to keep both the person and the idea alive.

Berkley: Let me disagree with a number of those points. They are all right, but timing is critical here. It is true that at the end of my tenure at the foundation, they wanted to get rid of me for a complicated set of reasons, not the least of which was that a lot of the things I was doing were very high profile. At this point, when IAVI was being initiated, the administration was nervous to take something like this forward. There was a belief that this was the type of thing that had to happen, but the questions were how to implement it and how much risk to take. The conversation went endlessly back and forth. The issue of an AIDS vaccine was clearly a problem, though. Nobody argued it. The board was very excited about it, but the president said: “My God, how big should this be and how much out front are we getting into this? I pushed, pushed, pushed to get this type of thing here, but maybe this is now going too fast.” That was happening in multiple fields. The same thing happened in the environmental field where they created a new initiative that was pushing the envelope. It was making all kinds of noise, and all of a sudden it was, “Wait—my God, this is too big. It is doing too much,” and there was an attempt to pull back in. There was an attempt to pull IAVI back in.

Klingenstein: I don't understand the contrary thinking. This is what these institutions are supposed to be doing.

Berkley: That is what all of us believe, and the reason it is important is that there are now 70 health-based public/private initiatives of which IAVI was the first. Rockefeller has done maybe five to

ten of them. This genre has become a big part of what Rockefeller has done. Then Gates, which becomes the largest funder of all of this, makes public/private initiatives core to what it is doing.

Prewitt: My history only runs up to 1995, so I only hear about things that happened between 1995 and 1997. One more comment going back to the 1920s: The Rockefeller Foundation's resources were a match for its ambitions in the 1920s in public health. The Rockefeller and Ford foundations' resources were a match for its ambitions in agriculture in the 1950s. By the time we get to the 1980s and the 1990s, the foundations' resources no longer matched their ambitions. Today, the only foundation in the country whose resources match their ambitions is Gates. Nobody else is even close. So a general purpose foundation working in lots of sectors by definition does not have a resource base to match its ambition. It has a vocabulary to match it but not a resource base. The big partner in the 1970s and the 1980s was the federal government. When the federal government is no longer the partner, you have to figure out who has money to leverage. Goldmark is right about that point, but he is fighting a culture in which the staff doesn't even quite believe that we don't have enough resources.

Berkley: So that automatically takes you to the private sector.

Prewitt: That is right. In effect, there was no place else to go.

Berkley: In the 1940s there was no National Institutes of Health, for example, in health expenditures. So Rockefeller, which had health as a major part of its portfolio, was the largest international health funder. Now you have NIH efforts and the National Science Foundation as \$27 billion efforts, plus research foundations around the world. Rockefeller's health program at that time was somewhere around \$12 million to \$14 million. Yet we were talking exactly the same way we were in the 1920s: We are going to eradicate this disease.

IAVI was a big idea when it was launched. We tried to get money quickly from other sources, and the first source we went to was another foundation that did no health, did no AIDS, and did no international work. They gave us \$3 million, and then the next foundation gave us \$4 million. That is when we took off.

Moderator: So you designed a separate entity to get to the scale that you envisioned and also to shield Rockefeller from some of the risk associated with the project?

Berkley: Yes and no. I think there was certainly discomfort in these big, visible things being run at a program level. The president continued to support it but with this reluctance of, what am I supporting and how much is it out of my control. We set up a 501(c)(3) that theoretically the president of Rockefeller had nothing to do with. I was the acting CEO and the chair of the board at the same time, and

we had three independent high-prestige board members. It was an independent entity that Rockefeller was not controlling. And that was really the nervousness that was going on internally.

Prewitt: The kinds of persons who can drive these things have to be independent spirits. They make deals and go out on a limb to make these things happen. And I'm not just talking about IAVI here. They get a reputation inside of the foundation that they are a little arrogant or a little pushy. Those kinds of things were being said about Seth at the time. They were saying that he was not a team player.

So in all honesty, part of the risk was that Rockefeller was creating IAVI and then letting go of some control. There is a structural problem inside those kinds of foundations when these things are unfolding. It is analogous to what happens in the corporate world when things get spun off. What you are describing, of course, is an entrepreneur inside.

Moderator: So how did the idea even come about?

Berkley: The idea came to us. Some people came to us and said the AIDS vaccine effort is dead, and I did not believe it. The people who came to us were some advocates and some people in the private sector and some internationalists. We at Rockefeller had the freedom to go to whatever meetings we wanted to. So I had freedom to investigate it so I could make the case. I went to a series

On the Relationship

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of early meetings and then began to convene our own meetings, building the case for doing something about the AIDS problem. That process required support internally. The president realized this was a big idea. He called his board members and other people, and they thought it was a good idea as well.

When they got involved, it was much more in a bureaucratic way, and all I was trying to do was to figure out how to move this as fast as possible. That is where Paul became very important later on because he was from a completely opposite school than those in the foundation who were saying stay internal. His whole life was backing entrepreneurs, and he became a mentor to me. We had conversations in the private sector thinking big numbers and big leverage—things that we had begun to talk about at the foundation but which were not the culture of the place at the time. The person who was defending it on the board turned out to be Peggy Dulany [Rockefeller], who gets very excited by this idea. She was looking at trying to leverage other foundations, and there was pretty good support. The decision was made to spin off IAVI and for me to go work with it, and that is what I did.

Gardner: Were you raising the \$3 million and \$4 million while IAVI was still physically within the foundation?

Berkley: Yes. It sat within the foundation for a year and a half. We hired the first employee. At this point, I had not gotten a grant from Rockefeller. We used operating funds from the division. We wanted to hire this very prominent person who was head of the NIH AIDS vaccine effort and who understood that the world wasn't getting it right. To do that, we had to create a guarantee for her in case the whole thing fell flat on its face. We set up a deal that Rockefeller would guarantee her salary, a substantial salary, if this whole thing collapsed. We used Rockefeller in many, many different ways to open doors, but at the same time, it was somewhat of a cultural clash.

Moderator: When you were setting up the 501(c)(3), did you envision yourself leading it?

Berkley: No, we began a search for a CEO. I felt that it was critical that the person leading it come from industry, someone who had managed the development of vaccines or who had many vaccine patents under his or her belt. So that is what we were looking for. We offered the job to two industry leaders, both commercial guys who knew how to run companies and had run vaccine companies. Both ended up being uncomfortable with the fundraising and the political part of the job. In 1997, the board came to me and said, instead of you just providing technical assistance, why don't you become the CEO?

Klingenstein: We wanted somebody who had run a large program, who was technically sophisticated, and who understood vaccine discovery and would understand clinical development. Then we had Seth who was running the process and who was a committed entrepreneur. But at the end of the day, we decided that a committed entrepreneur who understands the challenges is more likely to succeed than somebody who has just the right pedigree. It was Seth's decision and the board's decision for him to step into this operating role. We finally knew what the best candidates looked like, and Seth looked better than anyone else.

Moderator: How did Rockefeller use its leverage to help get you started?

Berkley: The most important issues were getting in the door and the level of credibility. We started with \$100,000 and one employee and were going to influence the world on a topic that was so expensive and so big. This was, to most people, patently ridiculous. Had we just started as an outside organization, we would have had zero chance of doing this. There was a level of credibility that came from being part of the Rockefeller Foundation. As Ken said, this was the health place up until that time. There was no Gates. The reason people came to us about this problem was it was the place that could make miracles happen. The fact that we were in Rockefeller and had that credibility and support made all the difference in the world.

Prewitt: The Rockefeller Foundation had not stepped into the AIDS effort during 1980 to 1983 when it should have or in 1985 and 1986 when it should have. It simply had ignored this, so people are saying out there that they finally recognize this is a big scourge in the developing world, and we have to do something about it. This is, after all, the foundation that had been very active in significantly reducing the fertility rate worldwide. There were enormous accomplishments in the world—and not just through the Rockefeller Foundation—in family planning and in the population field. Then along came what appeared to be an equally large global crisis, and people could not imagine that Rockefeller sooner or later wouldn't finally wake up and do something about it.

Moderator: Did the Rockefeller Foundation come out directly and say we are going to continue to support IAVI?

Berkley: IAVI went from being an underground effort to being the lead in the annual report for multiple years and being the speaking point of the leadership of the foundation.

Moderator: Back in the beginning, did you have a business plan?

Berkley: In retrospect, we probably should have done a standard business plan, but, at that point, that was somewhat foreign to me. Instead, we did a series of scientific plans. We did five meetings to address this topic. We did the original Bellagio meeting, which laid out what the needs were.

We then went to the science meeting where we laid out and looked at the global science plan with a group of people who were both in the field of HIV research and outside. This is what Rockefeller does so well. We got all the best people to come together, and they said they thought it was doable but that the world was currently dealing with vaccine development in an ineffective way.

There were three other meetings. One was an intellectual property meeting in which we brought lawyers together. One was structure and finance: Should it be a

for-profit or a not-for-profit, or should it be a consortium of industry? Last was a series of meetings and consultations with people in the AIDS community. The AIDS community was against this. The rumor mill was that Rockefeller was going to take money away from prevention and treatment research and put it into vaccines. That is one of the reasons we started out looking for foundations that were not already involved in AIDS and HIV. Remember I said the first foundation that gave us support was one that did no AIDS, no health, and no international projects. We said to people in the AIDS community that we were not going to rob Peter to pay Paul. We were going to try to bring in new money. In fact when Gates came in, it was completely new money.

Moderator: Talk about the funding perspective of what you needed to get to take it to the scale you wanted.

Berkley: It was scary when I took over the leadership of IAVI. Ken Prewitt was president of the Social Science Research Council, and he sublet some space to me. We had virtually no money. I am not even sure we had a grant from Rockefeller yet, although there was the promise of some support coming from them. We had gotten this \$3 million grant, and we had gotten some money from a group of mothers who were selling bracelets to support this, and that was it. It was about a month later that we then received a \$4 million grant from the Starr Foundation, which was an atypical funder as they didn't fund international AIDS research. After that, things rapidly fell into place, and we have been able to grow between 100 and 150 percent per year since the start of IAVI.

Moderator: How critical was the more than \$8 million that Rockefeller gave you?

Berkley: It was incredibly important. It was a substantial proportion of the operating budget in the early years. The vision was to create a global funding effort from the beginning. As a result, I was surprised that internally at Rockefeller the recent conclusion was because we were so successful at fundraising, we didn't need Rockefeller funds any more.

That to me was exactly the wrong conclusion. The right conclusion would have been that this is one of the most important things we have launched; we are delighted that other people are coming in, but we need to keep a critical investment and critical involvement because we will learn from it, we will influence it, it will continue to be important, and we need to have a link to it.

Moderator: Did Rockefeller initially take a board seat?

Berkley: We made a decision early on that there should be no funders on the board. We decided to make a completely independent board composed of people with expertise in these areas.

Moderator: You mentioned that you were tracking against earlier projections. What kind of outcomes were you looking to achieve, and how do you track them?

Berkley: Part of it is fundraising as a goal. Obviously, fundraising in and of itself is not important, but it is to have adequate funds to support a substantial vaccine development program that grows in the way that it needs to grow. There is a logic to this in that if you start working on vaccines it initially is relatively cheap. As you begin to move into clinical testing and into manufacturing with these same products, it rapidly gets quite expensive. One could, therefore, measure our early growth based on fundraising and what we said we were going to raise, and we exceeded that. One could measure it on the detailed outcomes we listed for our first government donor, the British government, all of which we exceeded.

Moderator: What types of outcomes?

Berkley: How many vaccine products we were going to develop. We were going to do clinical trials, and we were going to go to trials within a certain period of time. We were going to build political leadership across countries.

Prewitt: One other footnote on Rockefeller. During this period—say 1993, 1994, 1995, and 1996—Rockefeller was out front on two or three other technical

On Leverage

“The other thing going on in Rockefeller at that time... was the question of whether this was a moment when private philanthropy should form partnerships with the for-profit sector... [Seth] was much more comfortable with the idea that you might have to work out deals with for-profit firms, especially if you are going to get any kind of huge research-and-development investment going with something like an AIDS vaccine...”

—Prewitt

“When the federal government is no longer the partner, you have to figure out who has money to leverage.”

—Prewitt

“So that automatically takes you to the private sector.”

—Berkley

fields, two in population and one in agriculture. The Rockefeller Foundation was willing to invest in major scientific enterprises and accepted the fact that technical failures would sometimes occur.

Alternatively, Norplant was primarily being done through the Population Council, but the Rockefeller Foundation was active in its development. Norplant was a technical success, but it wasn't quite a political or moral success, and there was a lot of nervousness inside the foundation about coming across with a certain type of arrogance, appearing as if they believed if you just get the technology right, everything else will fall into place. In the foundation, people are aware that sooner or later you have to do field trials for an AIDS vaccine. There was some anxiety about how well we would handle the political and moral culture. We were right up against a quite unhappy experience with Norplant. We took the board to a health clinic in Indonesia and watched women get it implanted and talked to them about taking it out. They did not

know it could be withdrawn. Clearly they thought, we are in a police state and the police state is using this to control population. I mention that because that is part of the conversation that is going on that also explains some of Rockefeller Foundation's trepidation.

Moderator: So looking forward, it sounds like you clearly have the foundation's long-term commitment?

Berkley: Well, no. The foundation's resources dropped off, and it made the decision not to give IAVI funding for this year. The message I got was not that it wasn't fully supportive of what we were doing and not that it did not want to help us, but what difference did Rockefeller's resources make since IAVI was being so successful.

In my opinion, if IAVI were to fail, it would take down with it the model and a lot of other things that are going to have an even harder time moving forward. If IAVI succeeds, it then becomes an important lesson. It may not be the right model for other things, but it is not necessarily irrelevant to other work that is going on. I actually think it is a very, very important thing for Rockefeller to be engaged in, and so I am continuing to make a case for that.

Gardner: This is interesting as all the steps you have described in setting up IAVI, with the exception that it was actually within the foundation, were repeated with four other organizations that had a portfolio approach to developing products.

Moderator: Do you think Rockefeller saw IAVI as a successful model that should be replicated as a way to forward ideas without assuming quite the risk?

Gardner: I'm coming at this from the outside since I've just joined the foundation, so to me it seems obvious that, yes, they would see IAVI as a clear model and a great success story; and the foundation's literature still trumpets IAVI as a big success. But there is a disconnect. When I talk to Ariel Pablos-Mendez, who is the acting director of the health office at Rockefeller, and he tells me what was behind his pushing this model with four other organizations—the Medicines for Malaria Venture, the Global Alliance for TB Drug Development, the International Partnership for Microbicides, and The Pediatric Dengue Vaccine Initiative—is his experience with watching the creation of the Medicines for the Malaria Venture that inspired his support of the model. Now it sounds like Rockefeller put some money into the Malaria Venture project and pushed them to have a business plan—probably based on the IAVI experience.

Because Ariel didn't overlap with Ken or Seth and he didn't experience the birth of IAVI and its nurturing within the foundation to have gained a lot of direct experience, he probably got indirect experience from people who were involved in it.

Berkley: Right. There has always been a history at the Rockefeller Foundation of learning from previous officers. I got all these books when I came in, history books, even a book on good foundation practices and how a good foundation

officer operates. That has somewhat fallen apart, and at least my experience has been that the recent generations of people come in and they're not learning enough about how things were done in the past and do not build upon the backbone. Now maybe that's a little unfair. If you talk to the president, he understands IAVI. Early on when these other initiatives happened, I had conversations with each one of the CEOs of the new organizations. We would share materials. We would go to the same meetings, and there was no question that there was a shared learning environment, but it wasn't a direct Rockefeller transition of everything learned from previous generations to new generations of officers and then using that knowledge to drive things forward.

Gardner: The success of these organizations is driving an interesting cultural shift within the foundation. The current president is saying, "This tier in the public/private arena is an area where the foundation might have a niche where it could expand. Rockefeller could look at the applications of public/private partnerships in other areas like community development and micro-lending or micro-insurance. So where else could we learn from the private sector? What other things have been honed to perfection in the cutthroat world of the private sector that we could apply to a public good?" So this is a new story, I think, that IAVI helped to start.

Moderator: How would you describe the economic model of a public/private partnership?

On Outcomes

"The clearest, biggest challenge is the science...Once we have a product that works, even if it only works 50 percent of the time, the development afterward is quite easy...But until you have that, the entry costs are enormous. It's \$150, \$200, \$250 million because you have to take a product from its inception all the way into efficacy testing to show that it works..." —**Berkley**

"One of the issues is, how does a funder take having no hits, even though you may be making enormous progress. The answer is to measure interim success

such as getting products tested and moving them through as well as continuing to build the political sphere for this." —**Berkley**

"But the product failures have got to imbed in them a lesson for moving forward about the probabilities of product success...There may not be a profit. There may not be a vaccine...So it seems to me IAVI's strategy is to have its failures always be forward steps. They have to learn from their failures..." —**Prewitt**

Berkley: Initially, the idea was that there's a research engine called the public sector that produces basic science. There are, at the end, companies taking products and driving them all the way through. The gap that we looked at—this was the “Aha” at the Bellagio meeting—was taking products from the bench and through the pipeline enough that companies would say, “These are exciting enough or promising enough that we'll now pick them up and take them forward.” There just isn't a compelling enough market, and the science challenges are tough enough that we are not going to invest large amounts of shareholder capital to move them through high-risk early development. So it's that gap that we have to fill. All we then have to do is take a bunch of products, scour the world for the best ideas, pick ones that are different than the ones already going, take them through enough clinical development to show that they're promising or not, and then industry will pick up the promising ones and move them forward. That's the economic model, and we've set in it provisions that stipulate that if it happens, the company should be able to sell it in their primary market for whatever the market will bear; but they need to make it available in the developing world under conditions that would allow access and make sure that the developing world isn't bearing the brunt of this cost since it's public funds.

Now what's changing about this is the assumption that if you just take a promising product far enough, the companies will pick it up. It's not clear that that's true. Even for the companies that now have programs, it's not clear how committed they are to their programs given the tough economic and political environment. So it's not clear that even if we have the eureka product that a company is always going to step forward and take it all the way. The question at hand is, have we shifted from maybe only having to take it to phase one to maybe having to take it to phase two or phase three and prove it works. Might we even have to create a new model that says we're going to transfer it to a developing country to manufacture, or are we going to create a production facility or anything

else in the interim? We don't know yet.

Gardner: Companies are nervous about vaccines, and they're very, very nervous about HIV vaccines.

Berkley: So the model then is to pick ideas, and those are usually from academia or biotech because big companies aren't taking the risk of a large portfolio. But you have good ideas out there in the biotech industry that are not getting funding because venture capitalists say: “Vaccines are bad. AIDS vaccines are horrible. Run the other way.” They can get money out of the public sector research mechanisms like NIH, but that money takes a long time to come. It doesn't come with any of the expertise, like clinical trials expertise or regulatory expertise or the other things that IAVI has. We bring flexible money, quick money, and we bring the expertise that goes with it. At the same time we're also trying to build a political climate that makes it acceptable or even “noble” to work on an AIDS vaccine.

Moderator: What have been the biggest challenges since launching IAVI?

Berkley: The clearest, biggest challenge is the science because we can take things up to a certain point in monkeys, but we don't know if the monkey model is the same as the human model. We're going to have to take things all the way through in humans to prove the model, that the monkey model is right. Once we have a product that works, even if it only works 50 percent of the time, the development afterward is quite easy. Not easy, but it's easier. But until you have that, the entry costs are enormous. It's \$150, \$200, \$250 million because you have to take a product from its inception all the way into efficacy testing to show that it works, so then you can see that you have the predictive working model. So science is the number one problem. Then the fundraising issue is a hard one because how do you sustain this over time, realizing that this is a marathon, not a sprint, a 20- to 30-year effort? Again, I can't speak for Rockefeller, but if the growth continued and Rockefeller was continuing to have pots and pots of money, I don't

think there's any question they would not have dropped IAVI. They might have lowered their commitment, but I think at the end what we're going to see is as money gets tight people might say, “Well, you know, we did AIDS vaccines a while ago,” and not stick with it. This is despite the fact that this epidemic has already infected or killed over 70 million people, and it is the worst infectious disease epidemic since the 14th century. And, even though the world has just coughed up a commitment of \$22 billion to deal with AIDS, none of that is directed at vaccines. It's all treatment-related, and so there's still as much of a crying need to support this global public good as there was in the past.

Moderator: What are the markers you need to hit to demonstrate to other funders that you're moving toward making an impact?

Berkley: You want to have a working vaccine, but, given this field, you know that you're going to have a lot of losses. So one of the issues is, how does a funder take having no hits, even though you may be making enormous progress. The answer is to measure interim success such as getting products tested and moving them through as well as continuing to build the political sphere for this.

Prewitt: But the product failures have got to imbed in them a lesson for moving forward about the probabilities of product success. These vaccine approaches have to be plausible. There's an assumption that somehow an AIDS vaccine will just happen, and then when the bottom drops out, the whole field goes dead because these promises and expectations fail to materialize.

There may not be a profit. There may not be a vaccine. When will you know that? You'll never know it. So it seems to me IAVI's strategy is to have its failures always be forward steps. They have to learn from their failures. Otherwise the funding will just dry up.

Berkley: The other interesting thing is that when the virus was identified 20 years ago, the activists basically said to

On Other Funders

“The Rockefeller Foundation’s resources were a match for its ambitions in the 1920s in public health. The Rockefeller and Ford foundations’ resources were a match for their ambitions in agriculture in the 1950s. By the time we get to the 1980s and the 1990s, the foundations’ resources no longer matched their ambitions. Today, the only foundation in the country whose resources match their ambitions is Gates. Nobody else is even close.” —Prewitt

“My worry is that Rockefeller is going to give up the health space, despite the fact that it has the unbelievable history, the convening power, the leadership...I think there’s a danger that people say, ‘Gates is there. They’ve got the franchise now, it’s time for everybody else to go home because they’re really big and they really can make a difference...’” —Berkley

“If Rockefeller gets out, Gates is the only big foundation doing health. There used to be MacArthur. There used to be McConnell Clark. There used to be Carnegie. But those are all out of health.” —Berkley

the science community, “We need treatment.” The science community said, “We don’t know how to make a treatment for viruses.” The activists said, “We don’t care,” and they throw money at it. So all of a sudden there are all these treatments. We now have treatment. Eureka. We’re going to cure everybody; the virus is going to be gone. But lo and behold, it doesn’t end the epidemic. The treatment keeps people alive, but the epidemic continues to spread. In the US there are 40,000 new infections a year and 15,000 new infections a day worldwide.

What happens, though, is all of a sudden we discover international AIDS. I went to a meeting at the White House at the end of the Clinton administration with all these high-level Cabinet people and they went around the table and said, “AIDS is killing people in Africa. It’s a thing of biblical proportions,” and I’m waiting for the punch line, but that was what the meeting was about. They had discovered that there was AIDS in Africa in 2000, after 20 million people had died. So all of a sudden there was a discovery and then there was this huge movement for treatment. The activists are throwing things out there: “If we just treat these people, the world is going to be all right.” But we know that it doesn’t end the epidemic and eventually viruses get resistant or people can’t tolerate the treatment. So now we have this \$22 billion huge effort going on and that also can push the vaccine effort out because they say, “Well, nobody’s interested anymore.”

I just came from the AIDS in Africa meeting and 12 people spoke on the opening day panel. They did not mention the word condom. They did not mention the word vaccine. It was about treatment. That was it, and so the world is missing the boat. From my perspective, what we need is the type of leadership that says, yes, treatment is important but don’t forget that we’re trying to end this epidemic. This is a long-term goal. Getting people to stick to that, even foundations, is very hard. You know, a new foundation board comes in and is interested in other things.

Moderator: Charles, you talked about Rockefeller’s culture changing.

Gardner: The experience with both the agricultural work that the foundation has done for decades and with IAVI and these other four entities that they’ve created over the past few years is very positive and very visible. It’s the most visible thing that comes to people’s heads when they think about the foundation now.

Moderator: How is that getting into the Rockefeller culture? Are you out looking for the right ideas? Do you have ideas where you’re looking for entrepreneurs?

Gardner: There are different parts to this. The foundation is big and it’s doing work in community development and culture and other things I don’t even know about. So I can only speak to the health side. The health side, which is one of four big themes, gets only \$20 million a year. We’re going through our own internal evaluation and an external evaluation. We’re doing a lot of soul searching about where we should go next. So there’s a constant tension within the foundation between the implementation side of things and the innovation side of things. What’s really driven this in the foundation is that they’re looking at innovation that will improve implementation. There’s no vaccine, so any vaccine, even if it doesn’t get to the poorest of the poor is better than no vaccine. But you still have to think about how to get it to the poorest of the poor.

For example, there’s a huge problem with implementation of the DOTS treatment, or Directly Observed Treatment, which is the standard TB treatment, because it takes so damn long. You have to have daily drug dosage and people fall off. Without close supervision, up to half do not complete treatment, fostering the development of drug resistance. If you had a shorter course or time period to take the drugs, you would reach a lot more people with the same cost. So you improve implementation literally by innovating. Then there are bigger issues of comparative advantage, and Gates really looms over the whole arena now, so it’s a mixed blessing.

Berkley: That’s a really big issue. My worry is that Rockefeller is going to give up the health space, despite the fact that it has the unbelievable history, the convening power, the leadership and can be potentially very entrepreneurial. There was a short period where Gates had none of that, and so Rockefeller could have been the kind of real leader and Gates could have been the financier. Of course, Gates now has a very strong staff. I think there’s a danger that people say, “Gates is there. They’ve got the franchise now, it’s time for everybody else to go home because they’re really big and they really can make a difference,” and I think that’s dangerous.

Moderator: Would it be a secondary win to help focus Rockefeller on entrepreneurs like yourself?

Prewitt: When you're talking about venture financing, high-engagement philanthropy, or whatever you want to call it, the conversation around products is fundamentally different than the conversation around everything else—getting rid of poverty, or training the next generation, or doing arts and culture, whatever. Products are different and the foundation world hasn't understood that they're fundamentally different than getting the right public policies. What's interesting to me is not that Rockefeller is looking at public/private partnerships but they're looking at products again.

Berkley: The problem with some products, if you look at the venture capital timeline for AIDS vaccines, is it's probably too long. It's not that anybody argues that someday if you have an AIDS vaccine, you're going to make a hell of a lot of money. Everybody agrees with that. The issue is that it's not going to be in the timeline that's good for venture capitalists. Whereas a place like Rockefeller can commit for 20 years, it does not do that well, and that's the point. So here's IAVI, six or eight years out. Rockefeller Foundation doesn't know whether it's going to support it or not. Rice biotechnology is 15 to 18 years out. They get nervous. INCLIN (the International Clinical

Epidemiology Network) is 12 years out. They get nervous. Now, you can argue that those programs don't deserve support anymore; they're stale or whatever. But there is another argument that says that one way Rockefeller should do it is to just stick with things long enough. There are some very good examples where Rockefeller has failed because they got out too quickly. Boards change and people change. That's one of the critical issues for venture philanthropy in a generation that has the time horizon of a nanosecond. Will venture philanthropy take those longer horizons? For a vaccine product development initiative, it's got to be 15 years, minimum.

Prewitt: So much of these decisions within a foundation are driven by personalities rather than just the idea, and people turn over.

Berkley: The other thing that happens is the board turns over. So if you go back to who on the board was there when IAVI began, who really understood the arguments for it and why it was important, they might still stick with it, but for new board members there's some sense that it's done now.

Moderator: Do you have other funders that have a longer-term horizon?

Berkley: I think Gates ultimately has a pretty long time horizon but it's untested;

it's completely new. It's a family foundation, and they've spent a lot of money and they don't have a track record yet. So how is that going to play out? What's really going to be seen as a success or not and how that's going to change the way they invest is not really clear. But certainly they are talking about that long-term view.

Prewitt: The Gates Foundation understands the development of products. It's the only big product foundation. And product is a thing where if you do it right, you get it into every school, you get it into every arm, you get it into everything, and something is really going to change. But it's the only big foundation in the country that's a product foundation.

And venture capitalism comes out of the product world. It comes out of a world in which you made something and sold it, and lo and behold somebody made a lot of money. Then you have a success.

Berkley: The other thing is that most of our funding now comes not from foundations. Seventy to 80 percent of this year's funding comes from government. Talk about fickleness. I mean governments can go on forever, but governments also change on a dime based on politics. Our budget now is about \$60 million a year, and about 80 percent of that comes from eight different governments. That was a transition that

On the Impact of the Model

“There are now 70 health-based public/private initiatives of which IAVI was the first. Rockefeller has done maybe five to ten of them. This genre has become a big part of what Rockefeller has done.”

—Berkley

“All the steps you have described in setting up IAVI, with the exception that it was actually within the foundation, were repeated with four other organizations that had a portfolio approach to developing products.”

—Gardner

“The success of these organizations is driving an interesting cultural shift within the foundation. The current president is saying, ‘This tier in the public/private arena is an area where the foundation might have a

niche where it could expand. Rockefeller could look at the applications of public/private partnerships in other areas like community development and micro-lending or micro-insurance.’... this is a new story, I think, that IAVI helped to start.”

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“The conversation around products is fundamentally different than the conversation around everything else—getting rid of poverty, or training the next generation, or doing arts and culture... Products are different and the foundation world hasn't understood that they're fundamentally different than getting the right public policies. What's interesting to me is not that Rockefeller is looking at public/private partnerships but they're looking at products again.”

—Prewitt

we had planned originally because we asked, how much money is there in philanthropy. There's a lot, but how many foundations are interested in product development or science or international health? The answer is very few and it's very hard to get new ones engaged. If Rockefeller gets out, Gates is the only big foundation doing health. There used to be MacArthur. There used to be McConnell Clark. There used to be Carnegie. But those are all out of health.

Moderator: Once you have a product, is that the end of IAVI?

Berkley: We used to end each board meeting by saying, "Is it time to go out of business?" We stopped doing that because it's a long time horizon. Our plan is not to morph into something else; it is to be AIDS vaccines. But our success is not a product. Our success is an AIDS vaccine that is accessible and used by people who need it. IAVI is probably not going to get

into the distribution business, but it will probably morph into something that will then move the product to an organization. It would be logical to do that, whether it be a global fund or a UNICEF or a whatever. That's the mission and that is the plan.

The Participants

Seth Berkley, president, chief executive officer, and founder of IAVI, is a medical doctor specializing in infectious disease epidemiology and international health. Prior to founding IAVI, Dr. Berkley was associate director of the Health Sciences Division at the Rockefeller Foundation. He is adjunct professor of public health at Columbia University and adjunct professor of medicine at Brown University and has held academic appointments at Harvard University, New York University, and Makerere University in Uganda.

Previously, Dr. Berkley worked for the Center for Infectious Diseases of the US Centers for Disease Control and Prevention, the Massachusetts Department of Public Health, and the Carter Center, where he was assigned as an epidemiologist at the Ministry of Health in Uganda.

Dr. Berkley is currently active as a board member of Village Reach, the Alan Guttmacher Institute, Canadian Network for Vaccines and Immunotherapeutics, Oxfam America, and the American Bureau for Medical Advancement in China. He also participates in steering committees for the HIV Vaccine Trials Network at the US National Institutes of Health, the Horizons AIDS Prevention Project, Family Health International, and the New York Academy of Sciences. Dr. Berkley is a fellow at the Infectious Disease Society of America, the American College of Physicians, and the Massachusetts Medical Society. He is a founding member of the Network of AIDS Researchers of Eastern and Southern Africa and a member of the International Epidemiology Association.

Dr. Berkley received his undergraduate and medical degrees from Brown University and was trained in internal medicine at Harvard University.

Charles Gardner is the associate director for health equity at the Rockefeller Foundation, where he manages the Harnessing the New Sciences (HNS) program. HNS has assisted in the creation of a number of public/private partnerships to develop drugs and vaccines against neglected diseases of the poor.

From 1998 to 2002, Dr. Gardner served as the US Department of Health and Human Services' Regional Representative to South Asia, with the title of Science Attaché at the US Embassy, New Delhi. From 1995 to 1998, Dr. Gardner was the program officer for Africa, the Middle East, and South Asia at the Fogarty International Center (FIC) of the US National Institutes of Health. Before that, Dr. Gardner was a science policy analyst with the FIC's Office of International Science Policy and Analysis and an assistant professor at Howard University.

Dr. Gardner began his career in science policy with a Congressional Science Fellowship from the American Society for Microbiology. During his fellowship year (1991-1992), he served as a subcommittee staff member of the Government Operations Committee in the US House of Representatives. During 1992 and 1993, Dr. Gardner was an in-house consultant to the US Congress' Office of Technology Assessment. Dr. Gardner has a PhD from the University of Michigan in cell, developmental, and neurobiology.

Paul Klingenstein has been a venture capital investor for most of his professional career, beginning at Warburg, Pincus in the early 1980s. He joined Accel Partners in 1986 and through the next decade helped build a leading venture capital firm. After a brief period as an advisor to the Rockefeller Foundation, he formed Aberdare Ventures in 1999. During this period he has invested in more than 50 companies, the majority of which are now public or have been merged into public companies. These investments comprise mostly early-stage domestic businesses, but also include later-stage, public, and non-US companies, as well as management buyouts.

He serves or has served on the boards of Alibris, Ample Medical, Anacor Pharmaceuticals, Aviron, CapitalThinking, Circline, Glycomed, Idun Pharmaceuticals, Isis Pharmaceuticals, Pharmion, US Behavioral Health, and Xomed Surgical Products. He has served on the boards of various educational and nonprofit institutions including the African Wildlife Foundation, the International AIDS Vaccine Initiative, Juma Ventures, the Marin Country Day School, and the Taft School. He received an AB from Harvard and an MBA from Stanford.

Kenneth Prewitt is the Carnegie Professor of Public Affairs at the School of International and Public Affairs at Columbia University. Prior to that he was dean of the graduate faculty at the New School University in New York, and from 1998 until January 2001 he was Director of the United States Census Bureau. He joined government service following a career in higher education and private philanthropy. From 1995 to 1998, he served as president of the Social Science Research Council, a position he also held from 1979 to 1985. For ten years he was senior vice president of the Rockefeller Foundation, where he directed the international science-based development program involving activities in Asia, Africa, and Latin America. He served for five years as the director of the National Opinion Research Center, based at the University of Chicago. He taught for fifteen years at the University of Chicago, and for shorter periods, taught at Stanford University (where he received his PhD), Washington University (where he received his MA), the University of Nairobi, and Makerere University (Uganda).

Dr. Prewitt is the author or co-author of a dozen books and more than 50 contributions to professional journals and edited collections. He has been elected a fellow of the American Academy of Arts & Sciences, the Center for Advanced Study in the Behavioral Sciences, the Academy of Political and Social Science, and the American Association for the Advancement of Science. He has served on the boards of numerous professional and nonprofit organizations and on advisory boards to the World Bank, the World Health Organization, UNESCO, the National Science Foundation, as well as universities and private foundations.