



Session I

How Does God Lead Us to Our Calling?

Following John Suppe is one of God's little jokes for me. I was his student long ago at Princeton when I was studying geological engineering. At the time, he was on a spiritual quest and I was, too. John is quite a wizard of tectonics. When he looks at the ground, he sees with x-ray vision everything that is going on underneath. But when I look at the ground, I just see the ground. He used to take us on field trips to really lovely, interesting places.

I can remember going with his class to Lake Champlain where there's a famous fault—the Lake Champlain Fault. We had our backs to the beautiful lake with the sun shining on it, and we were supposed to be investigating this “gouge” and interesting stuff in the fault. I just couldn't stand it. I'd wander away from the class, face the lake, and think spiritual thoughts about my future calling. I always felt a little guilty about my behavior.

John also took us to these cliff-like outcrops. As he was lecturing on the detail in the crystal structure in the tectonic joints of selected outcrops, I started climbing the outcrop. I love rock climbing. This day the outcrop was wet and mossy. I fell down. My feet went right splat into a mud puddle, and the mud went flying all over the professor! I'm sorry, John, for my behavior. I never did properly apologize.

I'm going to pursue three themes. The first describes my particular context; why I see the need for professionally developed, sophisticated, and highly accomplished Christian minds in the sciences; and why this is a vital, important need corresponding to a great opportunity for engagement with our global culture. The second theme indulges in personal story and tells you

about my own calling. I hope that my testimony in relation to my calling will illustrate a spiritual point about the caregiving of God. For the third theme, I want to switch gears a little bit and speak as a strategist and talk about a variety of strategic opportunities for future Christian leadership within the sciences. I want that to follow the discussion of calling because I think calling is a great spiritual mystery, and ultimately where our careers go in the grace and providence of God is a mystery. However, that should not keep us from strategic thinking and strategic planning.



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The Need for Christians in Science to Engage with our Global Culture

The context of my work in the John Templeton Foundation is mostly focused on the aim of healing the deep and painful breach between the cultures of the great faiths, including Christianity but not exclusive to it, and the cultures of the sciences. This involves demonstrating not only a potential for consonance between a spiritual view of the world and the scientific view of the world, but also, wherever possible, a positive or constructive dynamic interaction between the life of faith and commit-

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ment and the life of science. This is a tremendous challenge in our modern western world, and increasingly it will be so in the whole world. A scientific world view is seen by many intelligent people as incompatible with a faith commitment. This is a serious issue that needs to be remedied and healed. Part of our Christian service to the kingdom is to work on demonstrating that this incompatibility is a caricature and an unnecessary one.

As an evangelical, I have a hope to recover the other side of the great two books tradition. Evangelicals are very good readers of the “book of Scripture” and are devoted to that tradition. However, I think we are very poor readers of the “book of nature.” We miss that God is revealed through the study of nature and that we can celebrate God’s greatness, his majesty, and his care through our view of nature and partly through modern scientific research.

My work encompasses a very broad range of different specific programs including cosmology and metaphysics on the one hand, to spirituality and health care on the other. My work largely is being a talent scout. I’m constantly looking for talented people to be involved in programs. This is a challenge! There is a paucity and dearth of really good people that have the right talent, the right training, the nuance, the sophistication, the desire, and the availability to engage in these kinds of tasks. I am very keen for the evangelical community to produce Christians in the world of science who can rise to this task and work creatively at this interface—healing deep wounds and breeches.

The Need for Excellence in Science

There’s a need for excellence in science. One can’t be a diplomat for faith in the world of science with the problem of ignorance or lack of sophistication or distinction in the sciences. There is a need for humility to speak across these very deeply distinctive boundaries, for an intellectual curiosity, and for the subtle ability to engage in a constructive diplomacy at the highest levels in the sciences.

I think that one of the most encouraging movements within evangelicalism is the movement for rediscovering the “Christian

mind.” The “Christian mind” is a counter to an unfortunate, anti-intellectual tendency that is common to American culture in general. Evangelical Christianity is a populist activity which unfortunately also carries aspects of anti-intellectualism. To speak as Christians in the academy, we have to overcome this perception. So that is a general challenge.

A more particular challenge is a counter to what Mark Noll of Wheaton College has described as the “catastrophe of fundamentalism.” In his book, *The Scandal of the Evangelical Mind*, Noll writes a very good chapter on the sciences. The whole book, however, is very important because it paints a historical picture in analysis of what he calls the “catastrophe of fundamentalism.” The sense or recognition of the scandal of the evangelical mind is well understood by the secular critics and those who despise the Christian faith. This is something Christians have to deal with—the scandal of the evangelical mind and its strong perception in the academy.

To be successful, the Christian mind requires a spiritual engagement. It’s not just a mind of purely intellectual matter. It’s also a spiritual mind. It has to engage in cross-disciplinary development to form a rich spiritual, intellectual, and scientific perspective. That’s a challenge for anybody. It’s a very significant challenge for training and preparation. It takes time, effort, and discipline. It doesn’t come naturally.

The Need for Broad Humane Learning

In the sciences, there’s a tendency to be extremely specialized. There is no particular reward within the sciences for broad humane learning. But to develop a Christian mind that is engaged with the sciences, I believe very firmly that we need this broad humane learning. We need to know and engage with the intellectual trends of our day. We need to read the journals of opinion that circulate the intellectual debates. We need to have a subtle understanding of humane learning across the disciplines that has the character of excellence. We need to demonstrate the effectiveness of the Christian mind for engaging difficult and strategically vital areas in the academy. So the Christian mind is an intellectual mind, a spiritual mind,

and an energetic and strategically-focused mind as well.

There's a dynamism—a huge energy that's characteristic of the greatest leaders of Christianity (you see it in the Apostle Paul). Sir William Grenfell was a famous medical doctor missionary in Labrador who wrote thirty-four books over his lifetime. He was a hugely energetic and dynamic Christian who described the Christian mind this way: "What Christ demands is a reasonable faith as he demands the service of our reason. We cannot drift to heaven like dead fish down a stream." The task of the Christian mind is one of huge energy.

Hearing God's Call

On the issue of calling and gifts, I'm certainly not an expert on the theology of calling nor do I want to suggest that I have anything particularly profound to say. But I recommend a very important book entitled *The Call* by Os Guinness. It gives a very thoughtful approach to the extremely serious issue of calling. William Temple, the great Archbishop of Canterbury, once wrote that to make the choice of career or profession on selfish grounds without a true sense of calling is "... probably the greatest single sin any young person can commit. For it is the deliberate withdrawal from allegiance to God of the greatest part of time and strength." The greatest part of the service that we can give to Christ is in our profession—what we do with our time and energy.

Theologically we have a tradition that our God is a God who calls. He called Noah. He called Abraham. He called Isaac and Jacob. He called the prophets. He called King David. He called John the Baptist, and he called all of humanity to himself in the personal call through his Son Jesus. And he called Mary to be the great vessel of his great salvation. He called the disciples and apostles individually. And so he calls each by name, even you and me. So calling carries a great mystery because it's personal. The great God of the cosmos, the Creator of the universe through the Incarnation personally meets us, and then our calling through the Spirit comes to each one of us.

Calling fulfills our fundamental restlessness. As Augustine said in his famous say-



ing, "God made us for Himself, and we'll be restless until we find ourselves in Him." It's vital that we find what God plans for us by his grace. We need to pursue it, to discover it, and to open ourselves to it. I think calling in many ways is part of a dance, a dance of freedom, a dance of development. I personally don't believe in ontological determinism—that the future is determined. I think that the dance of God's grace is a dance of freedom, that God works with changes and with faults that we make, that God works with new scenarios. In many ways, our will, our prayers, and our aspirations are places where God meets us and communicates with us. What we ask for, what we pray for, what we aspire for earnestly, God can fulfill, and in the fulfilling he meets us personally. Through our calling, God can give us a mysterious wisdom and faithfulness. Our necessity is not to balk or despair or give up in pursuing calling.

Paul Brand is a Christian writer who wrote a book with Philip Yancey called *Fearfully and Wonderfully Made*. You can read a nice biography of Brand's life by Dorothy Clark Wilson called *Ten Fingers for God*. He was raised by parents who were missionaries in India, and he wanted to give his life to being a medical doctor in India. In fact, later in life he became quite a distinguished medical doctor at Vellore Christian Medical College in South India. He developed some extremely simple but important

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treatments for lepers that helped them to use their fingers and toes and their eyesight. The reason that he was so successful in pioneering leprosy work was because of a frustration that God gave to him in what he perceived to be his calling. He had wanted to train as a medical doctor. Every direction to get into medical school for him was blocked, supernaturally blocked. As he kept aspiring to go to medical school, he had to work as an ordinary laborer, a bricklayer, and a carpenter in London. Finally he got into medical school and ended up going to India.

It turned out that the skills he had learned as a common laborer were precisely what he needed as a medical scientist to figure out the problem with people who had leprosy. Most researchers had been working on the treatment of the skin, on pharmacological treatments. But he realized that the loss of the pain response allowed people to hurt themselves. If you have a blister on your foot, you'll limp carefully to relieve your pain. But if you don't have pain, you won't limp because you don't know it's hurt. Or if you're in the kitchen and you put your hand on a hot surface, your hand will burn because the pain response doesn't work to stimulate you to remove your hand. Brand developed a whole variety of prophylactic tools to go on the hands, fingers, legs, and feet of people with leprosy to avoid the degenerations related to the loss of a pain response. All of his ability to do that was based on his experience as a workman. God gave him a deep and profoundly frustrating situation in his calling. It seemed that God was blocking his calling, but precisely through that painful experience, God was *preparing* his calling. I think that's important.

The Christian Culture in which I Was Raised

My story parallels that of Dr. Brand. I grew up in a suburb north of Chicago. My mother was saved in the early 1960s in the Billy Graham movement. When I was five years old, we started attending a Bible Church, which I think is still in existence. A now famous fundamentalist leader in America was our youth pastor and used to

give evangelistic chalk talks in my backyard to which my parents would invite their friends. This places me culturally within the spectrum of evangelicalism. But it gets more interesting. My parents became deeply engaged in radical fundamentalism of an extreme right wing variety. I went to their school and church. Growing up, I thought that that's what Christianity was all about—a rather extreme form of Christianity.

I'll give you one example. I have a sister Paisley named after the Rev. Dr. Ian Paisley of northern Ireland, who was considered by our church to be a noble and profound Christian leader. That was the model—to be like the Rev. Ian Paisley—to scream and yell and give death threats to your enemies in an inter-religious war such as in northern Ireland. Our church was involved in extreme tax dissent. Some people went to prison. There was even serious discussion of political assassination. There was survivalist activity in basements. There was engagement with the Theonomy movement—a very extreme form of Christian Americanism. You name it. I saw it.

In science, this form of Christianity supported Dwayne Gish and the Creation Research Society. As a young boy, I was taken to Moody Bible Institute and instructed in the teaching of the so-called creation science. I met Gish, and my mother made sure that I read the creationist literature very carefully. In politics it was Carl MacIntyre blaring on the radio. In education the paradigm was Bob Jones University. When I went to Princeton, my mother wept. That is the context of my youth. As you might imagine, this led to some confusion when I entered the gates of sophisticated academe and tried to begin to think Christianly.

I don't want to be snide. I am deeply grateful for the gift of the Gospel and the deep impression of its eternal and all-encompassing seriousness. Fundamentalists are serious Christians and that's a virtue. I'm also deeply grateful for a sense of militancy with respect to the ebb and flow of the secular *Zeitgeist*. One aspect of being a fundamentalist that I think is very important is precisely this militancy. Fundamentalists free themselves from slavish

conformism to conform to the world. And despite its flaws, that militancy and seriousness of disposition can be very precious and important for a Christian.

My Calling

But for me a very serious transformation was in order if I was to learn to think Christianly. I was led into considerable turmoil spiritually and intellectually. Fortunately when I was an undergraduate at Princeton, a wonderful Scots theologian, Earnest Gordon, from the great Princeton evangelical Presbyterian tradition, introduced me to Christian humanism, particularly through the Russian Christian writers, like Dostoyevski, Tolstoy, Berdyaev, and several others. God also assisted me in direct ways during this tumultuous time of my life. I remember falling away from faith and entering an eastern spiritual quest—a Zen Buddhist quest. It led to a very important despair in my life that God answered with a vision of the cross and a healing, not a serious amazing healing such as from a broken leg or something like that, but a real one and a profound transformation of grace that changed my life in a big way. It set me on a different course. In that experience, just a year after taking John's course in college, I promised to follow God and put Jesus and his Lordship first wherever that might lead.

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The first test for me in this mystical exploration of calling had to do with prudence and money. I had followed my father's advice to become a geological engineer because there was good money in it. He thought that if I went to a good college and if I took a reasonable, practical degree in engineering and geology, then the combination of prudence and money would lead to a fulfilled life. That's a pretty ordinary, reasonable, and sensible perspective for a parent to have.

When I graduated, I had a great job offer equivalent to vast sums of money in today's dollars. In fact, it's taken me decades to come close to it. But God provided a strange thing. There was a crisis in Cambodia that brought many refugees across the Thai border. An enterprising freshman at Princeton went to New York, talked to the International Rescue Committee, and persuaded them to take about forty undergraduates over for a summer to work in the refugee camps. As soon as we were dumped in Thailand, the newspapers announced reports that the Vietnamese army was marching on Bangkok and that Thailand was about to fall. All of the parents went into total screaming alarm. Now this is an organization trying to deal with refugees and orphans—not little,

spoiled brats whose parents are concerned about their problems. But anyway, what God gave me as a volunteer in this situation of profound human misery and need is a real experience of the goodness of grace, the goodness of a different kind of life, the goodness of working in a kind of Christian service in a context which wasn't normal, which wasn't prudent, which wasn't pursuing money, which was just very, very different. For a young person in that kind of experience, I just tasted the goodness of the Gospel. That was very transforming for me; that gave me a taste that I never will forget. I needed that taste for a long time for the more difficult challenges in pursuing my calling.

God Blocked My Way

The interesting thing is that I wanted to stay there working in disaster and refugee affairs and working in these emergencies. But God blocked me like he blocked Paul Brand and made me return to the United States for a previous commitment I had made to a Christian ministry in the National Parks. I don't know if this ministry still exists, but it used to exist for seminary students. If you were a seminary student, you would go to a place like Yosemite for the summer, and you'd be responsible with a team of people for leading worship services. There was one in the wintertime at a place called Timberline Lodge in Oregon. And because of Dean Gordon, a great Presbyterian theologian, I was given this responsibility. He said, "You go and do this" even though I wasn't in seminary. So I ended up with this awful responsibility of leading worship services.

Trained as a fundamentalist, I thought that leading a worship service meant that you stand up in front of people and yell at them for 45 minutes, sing a hymn, and then you go home. I really did. I mean, the yelling was supposed to be good yelling, but it was basically yelling, so I had to figure out how to yell good. I didn't know what to do so I just started reading the New Testament to understand what they were yelling about because they were always yelling about the Bible and pounding it on the table in my church tradition. I'd start at seven o'clock in the morning and finish at midnight. I read the whole New Testament through weekly because it was sort of an emergency situation for me. This led to a very deep confusion.

I didn't know quite what a calling was like. Was it irrational? Was it mapping this experience that I had now, or was it more like intellectual sophistication that I had experienced in college with the culture of Princeton University? Was it an accommodation to the intellectual rules and the doubts of that culture? Was it sophisticated accommodation to a kind of liberal spirituality that really didn't take things seriously but mapped the cultural forms in a more culturally sophisticated way? I was on the



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proverbial horns of the dilemma so I prayed fervently that God would provide some clarity and wisdom and some means of progress.

God Provides Direction

There was a bookstore in Portland, Oregon, where I often went and bought boxes of books. I discovered this funny writer called C. S. Lewis which, of course, was an answer to prayer. I started reading his books and I thought, “You know, there are some answers here.” I had known about C. S. Lewis before—maybe somebody had written to me suggesting that I read his books. I read all of his essays, which was very helpful.

God’s other provision of grace was through InterVarsity. Another Christian counselor of mine said, “You know, you should really go to this thing called the Urbana Convention.”

I said, “Urbana Convention, what’s that?”

He said, “Well, there’s this group called InterVarsity and they do this great convention, it’s a real good thing and you should go.”

That conference totally changed my life, one hundred percent. While there I picked up a little brochure that described John Stott’s London Institute for Contemporary Christianity which had a theme on how to develop a Christian mind. I read that brochure and thought, “That’s for me.”

But my yearning through all of that time was to find a way to return to places like Thailand or Somalia or some other disaster relief area and to work in a direct Christian ministry, not to engage so much with the intellectual life, but to work for an organization like World Vision. I applied to them, and they said, “Thanks very much, but we don’t need your services.”

So I thought, “Hmm. How can I work this one out?” Well, they needed technically skilled people. I had been learning about Oxford University because I had been reading C. S. Lewis and I thought it sounded like an interesting place. I discovered that they offered a one year masters course in hydrology. I thought this would be super. I’d study hydrology for a year, I’d have the skills I’d need, and World Vision would

take me back into the field. I also took language courses, first aide, EMT courses, and other things to do with emergency logistics, and I learned to fly an airplane. I wanted to make sure that World Vision would take me. I was pursuing my calling, or so I thought. But that very pursuing of what I thought was my calling is what God eventually used, though first he blocked my way and had me do other things. Oxford University wrote and said: “We’ve canceled this course in hydrology. But we actually like your undergraduate thesis on planetary-scale tectonic processes using isotopes.”

My thesis initially had to do with struggling over fundamentalist issues concerned with the age of the earth. I wanted to figure out once and for all the question about the age of the earth. Was Dwayne Gish right or wrong? So I said, “Fine, I’ll study isotopes and I’ll use my thesis as a way to work through this problem.” I got into all sorts of interesting things that had to do with isotopes, and I quickly learned that the methods were reliable. Actually you can date the earth as a planet, and you can date rocks in five or ten different ways. It’s pretty clear and straightforward. So I answered the question posed by the fundamentalist experience.

God used that answer to prepare me for my profession. In fact, the main thinker I worked with to do my undergraduate thesis was the same guy I ended up doing research with at Harvard for five years. Amazing! In any case, I was invited by Oxford to come in and do highly theoretical thesis work in planetary sciences. They even got me a nice scholarship. But I thought of it as an absolute catastrophe. I was incredibly unhappy. After working in a place like Thailand on the Cambodian border, I didn’t want to go and sit in the library for five years. But I did feel that this was a sort of strange mystery—a strange thing that God was working out. He kept blocking all other options. It was amazing. It was grace because God could have opened other options. However, I don’t think I would have followed my calling without God blocking other options.

It was a fourteen-year odyssey of tremendous, agonizing pain. Post docs and

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scientists know exactly what I mean. You do a Ph.D. and then you do a Post Doc. Then you work for grants and then you work in institutes. You're part of that rat race. You work in places where at three o'clock in the morning half the cars are still in the parking lot. Right? When you're part of that rat race, with the tough standards of peer review and the often unethical behavior in the process of the adjudication of grant proposals and you are living grant to grant—when you do all that stuff as a Christian, it's tough. It is seriously demanding of your time. It's all-absorbing. It's very easy to accommodate, to make compromises of those things that have to do with spiritual nurture and cultivation of your spiritual life, just to get along, to make that next grant, and then the next grant, and then another one. It's just very, very difficult, very challenging. God has to see us through this if we're to become serious research scientists.

That very pursuing of what I thought was my calling is what God eventually used, though first he blocked my way and had me do other things.

We've become professionals. We're part of that culture and we know it. We become possible interlocutors between the kingdom, the evangelical world, and the world of sciences. But it's tough to get there. It's painful. For me it was incredibly painful. It involved working typically from 8 a.m. until 2 a.m., six or seven days a week for a decade. And it just kept getting worse and not better. I went from the challenge of writing a thesis to another challenge of writing a research paper, and then got into writing for highly competitive grants. Many of you know this. Many of you are right in the middle of it right now.

For me, it led to very serious despair. I thought that it was a total waste at the end. I thought that I had made a mistake in my calling, that I had been stubborn and foolish and stupid, and that God had just decided to let it crash for me. I had worked at NASA for some years and I worked at Harvard for five years, and my wife and I were starting to have kids. You know that on academic salaries, it becomes very difficult. Grants can get sketchy for times. You can get involved in projects and then it can become controversial. You're trying to get a grant and you may go for two, four, or six months without a grant. As you hustle to propose another program, you also have the angst, the risk, the worry about making your mortgage bill, staying in the profession, getting a job. You apply for jobs all over the place, and you paste up rejections all over the wall.

So I started to hedge my bets. I thought, well, you know there's a great other world out there in business. I'll take some business courses at the night school at Harvard and I'll see if I can make it maybe as a business consultant. I really liked business training, and I'm deeply grateful. In fact, God taught me a lot from studying business. It's incredibly helpful to me in my current position. But that led to more torment because I kept applying for these consulting jobs which I would almost get, and then get a letter saying, "We wish you well, but we don't think the fit is right." But God was preparing me for the next step. God provided the perfect calling for me.

My Current Calling

I don't know if it will be my final calling, but my current calling is working in religion and science. God took this varied preparation with all of the frustrations and used it just perfectly. I work in cross disciplinary work. I used to have to work for months and months pounding my head in areas that I knew nothing about such as astrophysics, cosmology, or fundamental physics. My training was in planetary material science. I learned to jump from field to field and access fields very quickly. And that's what I have to do now. I have to do it constantly. It was extremely painful when I learned to do that. But now I have to access things in biology and health care and in fundamental physics and astronomy—things in which I have no training. But I feel very comfortable running around and getting the gist of what's going on in a field as I talent scout for the top people. So, one of the most frustrating aspects of science for me was actually a blessing of training that the Lord provided.

My business training, which was an emergency parachute for a career that I thought was going down the tubes very badly in terms of risk for my family, turned out to be absolutely what I needed to fulfill my calling in working in an administrative role developing academic programs. There's an important aspect to being an entrepreneur and to know the standards of cost effectiveness, management, organizational dynamics, accounting, law—all the things for which I had no preparation. But it was God's grace in taking what seemed to be a disaster and using it as his preparation for my calling.

That's been a long, shaggy dog story about my life, but it's a testimony to say that God works with people in profoundly mysterious ways to work out a person's calling. Often it seems devastating or painful, or it seems as though it's a waste. But God has this mystery of grace to work our calling through what we cannot see. Often the most painful blockages in our careers are precisely God's training for the utilization of his grace in other contexts, contexts that we do not see.

So what are the spiritual lessons from this and many other similar experiences that Christians have had? One, I



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The task, as [Malek] put it, of the Gospel, the Christian life, and the Christian mind in the academy is to produce scientists of great distinctions who can demonstrate the relevance of a theistic point of view.

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think, is leaving father and mother and following Christ. This is one of the painful lessons of the Gospel. It's not that we don't love our father and our mother, but our parents represent that prudence, that good sense, that "normalness" that the kingdom of God just doesn't live with. So we have to leave that prudent world behind.

Living life for the kingdom is a wild and crazy adventure. Look at the life of the apostle Paul, or all the apostles and the early missionaries of the Church. It's a wild and crazy adventure. It's not a normal prudent, solid life. It's a different life. And it doesn't conform too easily to what people expect us to do if we're responsible, thoughtful, good citizens. To some degree, it involves a certain frenetic fanaticism—being a lunatic. (In fact, the most famous lab in my field—at Cal Tech—was called the "Lunatic Asylum"!)

God cannot steer a parked car. If we're vigorous in pursuing the kingdom, then God can use these blockages, these opportunities, these experiences. But following vigorously is vital. So Christian calling is a mystery. And the choice of a research direction to some degree must include this aspect of spiritual mystery. We can't figure it out, plan it in advance, write it down, analyze it. It is a spiritual mystery, and God works in different people in different ways.

The Need for Strategic Thinking

Now I want to switch to this issue of strategic thinking. We have to use strategic prudent thinking. But the spiritual mystery is the deeper thing. Charles Malek wrote on the subject of engagement with the modern university. He published a book with InterVarsity called *A Christian Critique of the University*. He has some comments on the problem of the failure of creationism. The creationism movement has not produced great distinguished scientists who would be most persuasive in our culture—people of the Nobel level, and others approaching that. The task, as he put it, of the Gospel, the Christian life, and the Christian mind in the academy is to produce scientists of great distinction who can demonstrate the relevance of a theistic point of view. Now I do not think that what the Christian movement needs to do is to create cadres of

distinguished partisans pursuing hugely controversial agendas as in the great conflict of Darwinism, as if the task of the Christian intellectual is to kill Darwin. I think this is a deep and profound mistake. Rather, I think that our task is a more difficult one, and that's to develop cadres of great and distinguished highly accomplished scientists who have the respect of their colleagues on the basis of their scientific distinction and can speak from that authority, and can speak from that distinction. I think if we encourage young people to leap into battle, as it were to kill philosophical dragons within the sciences, we disgrace the cause of the Gospel. I think this is important and should be faced straightforwardly because it's a big issue within the evangelical world.

What are some of the distinctive opportunities that we might look at strategically for engagement as Christians in the sciences? One I think is obvious from looking at the state of the world. There's a statistic which is quite shocking. Half of the population of today's world, three billion people, live on less than \$2.00 a day! There's tremendous need out there. The power of science, of technology, and the enterprise that it undergirds, the progress of civilization in terms of wealth-creating techniques and devices and ways of organizing life has brought wealth to some parts of the world, but has left massive parts of the world behind. Because the concern for the poor and others—that *agape* (demonstrative love) vision—is central to our Christian mission. I think it's unavoidable that we should think about our calling as scientists. We are people involved in the undergirding of the creation of wealth. We should be pointing some of our activity and some of our calling, our commitment, toward changing this circumstance. That would be a distinctive Christian contribution. I think that some of our distinctiveness could focus on very grave crises. I was deeply motivated in January 1999 by the cover of *Newsweek* and an Op Ed by George Will. Due to the AIDS epidemic in Africa, it's projected, by the year 2010, that there will be between ten and possibly forty million orphans in Africa! This is a huge crisis. And I think it's distinctively part of the Christian vision, the

Wilberforcean vision of evangelicalism, to think about addressing some of these great issues.

Science and technology can be an important part of this because education is part of the core of what we do as scientists and technologists. We're involved in education. When a society prospers, when it creates wealth, it has behind it depth of education. And so our commitment to education is very important. There are other great heroes in our world, for example, Norman Borlaug, who won the Nobel Peace Prize in 1970 for his work on the Green Revolution. There are amazing things that can be done through science and technology in these areas that directly interface with great human suffering. A 1997 article in *The Atlantic Monthly* about Borlaug claims that his work probably saved the lives of several hundred million people.

A dedicated Christian scientist can go into fields that have the kind of impact that address huge human problems and save hundreds of millions of lives. We can do that today, not the same as Borlaug's Green revolution, but in other ways. There's very important work in parasitology, for example. There aren't vaccinations for some of the diseases that affect billions of people around the world. In the area of environmentalism, I think of the Mediterranean littoral where there has been severe deforestation over thousands of years. How could we reforest gigantic tracks of the world and make such a challenge economically viable, and scientifically workable? This might be a task even for agricultural genetic engineering. Will Christians take on massive, world-changing projects and use the power of science and technology in innovative ways to massively solve environmental problems?

Develop a "Faith of Fools" Attitude

Frederick T. Gates was an advisor to John G. Rockefeller. Gates was involved in generating what became Rockefeller University through the philanthropy of John D. Rockefeller. At that time, in the beginning of Rockefeller's formal philanthropic activity, it was felt that if you gave money for basic research, you were probably doing something a little ethically tainted since there were hospitals full of people on iron lung machines and full of desperately ill people. It was thought that if you were a philanthropist you needed to respond to that direct human need. It did not seem right to put a lot of money into laboratories and scientists and libraries and basic research. Why support "egg heads" when such immense immediate needs were calling out for attention?

Gates responded to this by saying "we have the faith of fools." He believed that basic research over a long period of time would fundamentally change the nature of the world. And he was right. We believe that now. We know that medical research changes the world profoundly. Nobody knew that in the day and age of polio when Gates

commended massive long-term investments in basic scientific and medical research. But who of us is worried about polio now? It's not part of our world. But a generation before mine, polio killed children quite commonly. Every person knew somebody that died of polio and they knew people who were crippled by the disease. The development of vaccines against polio was profoundly transformative. The idea of deep medical research that transformed the world was an important aspect of "the faith of fools." The "faith of fools" is the idea that the future can and should be profoundly different through the fruits of research. I think Christians have to think this way. We have to listen to the wisdom of Frederick T. Gates and think outside of our usual box. We have to research and invent ways that profoundly transform the world. This is part of our challenge of the "Christian mind."

We need a cadre of subtle interlocutors ... who can speak profoundly [as scientists] from a religious tradition.

It is our responsibility and task to think through these things. It could be via research in forgiveness and reconciliation, understanding conflict resolution, or changing the world through making forgiveness a normal part of life for everyone. It may be something to do with biotechnology or nano-technology or the humane aspects of medicine. It may be by researching *agape* behavior. To have this "faith of fools" about what scientific research could do to transform the world is part of our task.

We also need a cadre of subtle interlocutors. We need more interlocutors in the sciences and in many other areas, who can speak profoundly from a religious tradition. In our case, we need people from the evangelical tradition who can speak profoundly as scientists. My dream is that this kind of activity would connect with Christians like you coming out of places like MIT to bring great ideas that will transform the world in beneficial ways but may not necessarily be profitable. What can we do? What can come out of our work? We need a new generation of people deeply devoted and innovative in the sciences, and deeply devoted and engaged in spiritual life. What can people like that do working with Christian organizations, with Christian capitalizers, to transform the situation of ten-million AIDS orphans in Africa; or to combat deforestation problems in Haiti? What could we do in a profoundly transformative way to change our world with the kind of dynamism that you see in the economic sector? Could we ever have that kind of dynamism between the life of faith and the Christian mind and the sciences and technology? ☆