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# Revitalizing Land Grant Universities

## It's Time To Regain Relevance

by G. Edward Schuh

**T**he land grant universities have lost their way. Faculties have become introverted in their disciplines. Other institutions have emulated the land grant concept, and many in some respects do a better job of serving society than do our traditional land grant universities. And while society has changed very greatly, land grant universities have found it difficult to relate to new and changed social conditions.

For these institutions to be relevant to the problems of society, they need major changes in their programs. But, for a variety of reasons many land grant universities find themselves paralyzed. Somewhat surprisingly each university considers its particular problems unique. This is not the case. The important problems are systemic.

### **A Great 19th Century Innovation**

The concept of the land grant university was one of the great institutional innovations of the 19th Century. As an instrument of economic development, the land grant universities have served this country exceedingly well. Moreover, they are widely respected abroad, and in many countries there have been, and continue to be, attempts to emulate them.

The land grants were created in response to the elitism and limited rele-

vance of the private universities in this country. They were to provide upper-level education for the masses—especially in agriculture and the mechanical arts. In addition, land grant universities were to generate new knowledge, apply it to problems of society, and extend that knowledge to others beyond academia. It was a tripartite mission: teaching, research, and extension.

Every area of activity was to be a legitimate subject of intellectual inquiry. The land grant concept was not limited to agriculture and the mechanical arts. From medicine to music, the resources of the land grant universities were to make significant contributions to knowledge—and to its practical application.

To the extent the basic concept of the land grant university continues in U.S. universities, it is found largely in the colleges and schools of agriculture and in their counterparts in forestry and home economics. However, even in these areas a strong bent to a disciplinary orientation seems to be eroding allegiance to the land grant concept. For large parts of the university the land grant concept is completely alien.

### **A Malaise and Its Symptoms**

Several symptoms tell me that there is a serious malaise. Most prominent is the pervasive attitude in our land grant universities that applied work is not important; publishing for professional peers and consulting for the highest paying firm or government agency are the priority tasks.

These conditions are inconsistent with the historical essence of the land grant university and its tripartite mission

of teaching, research, and extension. The institution had a mission and the staff was expected to contribute to the accomplishment of the mission. Staff members were rewarded as they contributed to the solution of society's problems.

In contrast, today the criteria for promotion is publishing in scholarly journals. In turn people are self- and peer-oriented. They do not feel a responsibility to contribute to the institutional mission of solving society's problems. They do research to advance knowledge, publish for peers, and earn consultancies. Generating and applying knowledge to solve today's social and economic problems are not given sufficient priority.

A second symptom of our malaise is the rapid emergence of substitute or alternative research and educational organizations in the private sector. A large number of alternative research organizations now do much of the applied research that the land grant institutions once did. And they garner much of the public money that might have been directed to these universities.

Closely related to this malaise is the displacement of much of the educational functions. Clifton Wharton, Chancellor of the State University of New York (SUNY), points out that as early as 1979, AT&T was providing some kind of formalized and educational experience for more than half of its 825,000 personnel each year. The annual operating budget of SUNY, the largest university system in the world, first hit a billion dollars in 1981-82. The Bell system train-

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*G. Edward Schuh is Director, Agriculture and Rural Development, The World Bank, Washington, D.C. This article is adapted from one given in September 1984 at Colloquium, Strategic Management Research Center of the University of Minnesota.*

ing budget beat SUNY to that level by several years.

Much of the development of human capital in this country has long been done in on-the-job training. But educational programs offered by corporations are necessarily more narrow and job-related than those of even technical and vocational schools and colleges. Wharton says corporate training operates "... essentially without reference to liberal, comprehensive, and humane learning—the traditional goals of schools, colleges and universities."

The overall quality of our education and training has declined as more and more of it has been spun off to work-related institutions. Training people for a job is very different than training their minds. It is in training minds that we in the universities have a comparative advantage. And training minds may be a more efficient means of building the human capital for our nation than training people for jobs, which tends to have a high rate of obsolescence.

What ought to make us arise from complacency is that U.S. universities—especially our large land grant universities—have massively retrenched in recent years. At the same time the educating and training by these other organizations continues its unabated growth.

The almost total failure to educate students for the international economy and society illustrates the difficulties land grants have in adjusting to new conditions. Some 25 percent of our GNP now comes from international trade. The international capital market now drives our economy. We borrow large amounts from abroad.

In turn, our overall economic performance is determined in large part by our ability to compete in the international economy. But this ability is determined in no small part by our knowledge about the rest of the world.

That knowledge is extremely limited. For example, what do we know in an operational sense about the individual economies of Latin America, of Africa, of Asia? What do we know about the causes of the stagnation in the agriculture of the Soviet Union, or about the recent resurgence in the agriculture of Mainland China? What do we know about the underlying causes of the outflow of migrants from Mexico, or about the political system of Canada?

Unfortunately, the answer to each of these questions is, "very little." And what are our universities doing about these

deficiencies? Not enough. In fact, these universities do very little about language training and learning about cultures, religions, and geography.

Finally, this lack of attention to the rest of the world leads to increasing irrelevance to the problems of our society. Let me be more specific. We do not understand, nor do we address, the very large economic dislocations associated with opening our economy to the international economy. Only limited attention is given to the extreme imbalance in economic wealth on the international scene. Attention to the design of institutional arrangements for a rapidly changing international economy is even more limited.

What is even more troublesome is that we don't even worry about the lack of relevance of our institutions to these problems. It isn't that the land grants are aggressively trying to solve these problems and can't obtain the resources to do so. Instead, land grants deny they have responsibility to do anything about these problems. We insist that our task is to do basic research—to think big thoughts. We fail to tailor educational programs to our involvement in a rapidly changing economy.

#### **Challenge for a Modern Land Grant**

The basic challenge of today's land grant university is to bridge the gap between society's current problems and the frontiers of knowledge. Knowledge

has increased rapidly since World War II. Consequently, the frontiers of basic knowledge are far removed from many of the problems of society. While we must be involved in the frontier of knowledge, we must not abandon today's problems.

To meet this challenge presidents, deans, and faculty must reinstate a mission orientation into our land grant universities. They must revitalize the tripartite mission of teaching, research, and extension. This needs to be done across the university in both teaching and research. Everyone needs to recover a sense of institutional mission, to mobilize their considerable on-board resources to devise solutions for the pressing problems of our society.

Some people say, "Don't try. Specialize in basic research. Stick to graduate training." This response overlooks the importance of dealing with today's problems and the benefits that derive from doing that. As Vernon Ruttan of the University of Minnesota points out, basic and applied research must be integrated under the same organization.

Similarly, a wide range of educational services need to be available. For example, people need a richer variety of educational services. Shutting the doors at 5 p.m. shuts out opportunities to offer a variety of courses at unconventional hours to unconventional clients in unconventional packages. Land grants do

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## *The land grants were created in response to the elitism and limited relevance of the private universities in this country.*

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OHIO STATE UNIVERSITY

*The main campus of The Ohio State University—a land grant university at Columbus, Ohio.*

some of this but not nearly enough.

Finally, universities do not discharge their service responsibilities to society simply by allowing faculty members to consult with the private sector for pay. The university needs to have a strong mission orientation. The university needs to decide that it is going to mobilize its resources to attack society's problems. The university should reward faculty at least in part for their success in solving these problems, and not measure them entirely by the ability to publish successfully for their disciplinary peer group.

None of this is to say that everybody in the university should do applied research, nor that everybody should participate in outreach activities. I say, however, that the university as a whole should be sensitive to these multiple missions, and that it should see to it that the responsibilities implied by those missions are discharged effectively. Only in this way will the gap between society's current problems and the frontiers of knowledge be bridged.

#### **Some Tasks To Do**

To move towards this redefinition and

revitalization of the land grant university requires working on six major tasks:

*Capitalize on and revitalize what we have learned about agricultural development.* Agriculture is one of our few industries that is competitive in international markets. For example, we supply over 40 percent of world cereal exports and enjoy diets at home that are the envy of the world. Many U.S. industries that were once competitive—automobile, steel, textiles, and shoe—have long since fallen by the wayside. Why have we been so successful in agriculture? We need to ask that question, answer it and then apply the lesson to the rest of the economy.

The key answer is investment in human capital. Knowledge and skills are the key to our agricultural competitiveness. Investments (both public and private) in the creation and diffusion of new production technology, and in the education and training of rural people—research and education—have been the basis for our sustained and dramatic increases in agricultural productivity.

But it isn't just the investment in research and education that made for that

success. The felicitous linkage of teaching, research, and extension with the prevailing mission of serving agriculture is an essential feature.

In the face of this record it is ironic that our colleagues in other disciplines criticize agricultural sciences as not being sufficiently scientific. The agricultural faculty are often considered to be second rate. They solve problems of society and this takes time away from publishing for professional colleagues.

Given the successful agricultural experience it is even more ironic that top land grant university administrators now force their agricultural faculty to emulate other parts of the university, rather than vice versa.

Much of the agricultural model is relevant to other sectors and should be applied. The engineering schools need to reemphasize research on ways to improve production efficiency—process technology. This type of research is the backbone of our agricultural technology generating system. In addition the agricultural research-teaching-extension organization needs to be emulated.

New ground needs to be plowed as well in creating new products. Product technology is of great significance to nonagricultural sectors even though, to date, it has not been significant for agriculture. This is especially the case in terms of product production opportunities for small firms and the fostering of entrepreneurship in our country.

New institutional arrangements are needed since product technology is patentable. Joint venture operations might be useful. The private sector might put up venture capital; the university would put up selected members of its faculty. A way to share the benefits from successful ventures would need to be devised.

Agriculture again offers an important example. The Crop Improvement Associations may be a model. These arrangements provide incentives to the university researchers to press ahead with their work without at the same time distributing valuable new seeds on the side to their friends in industry.

*Respond to the changed economics of education.* Land grant universities are being displaced as deliverers of educational services. This problem has a plausible explanation. As wages have increased the income students forego as full-time students, the opportunity cost of education, goes up. The land grants have not adapted sufficiently to this change in the economics of education.

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### ***Shutting the doors at 5 p.m. shuts the doors on opportunities to offer a variety of courses at unconventional hours to unconventional clients in unconventional packages.***

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IOWA STATE UNIVERSITY

*Morrill Hall on the Iowa State University campus is named for Sen. Morrill, the "father" of land grant legislation.*

Other institutions in society, including private corporations, have found ways to deliver those services at times when the opportunity costs of the student's time are low, and in packages which enable them to take advantage of them. That means at night and on weekends, and in specialized programs, and for non-conventional groups such as employed women and the elderly.

*Train and educate students for the international economy.* Because of a communication and transportation revolution the United States is increasingly a member of an international community. We are a competitor in an international economy. Most of us at one time or another will either work abroad or work for a company or government agency that has a strong international involvement. We'll either be exporting or trying to compete with imports from abroad.

But yet we know very little about other countries and how international trade and business are conducted. For the United States to compete effectively in that world we need many more people knowledgeable about the world. That knowledge is also important to the United States to deal with international political and security issues.

One important step for land grants will be to stop viewing international programs as something separate and distinct from the rest of their educational and research programs. By making this change, our universities will also be able to respond more effectively in a service sense to demands for international programs from both the private and public sectors. The related curricula reforms will undoubtedly require consolidation of much of the rest of the curriculum. But in most cases that needs to be done any way.

There is another point to keep in mind. Our land grant universities are potential earners of significant foreign exchange. They will need to make some change, however, to realize this potential.

There is a natural complement between exporting more educational services and the strengthening of the international component of our general educational and research activities. Steps in this direction will mean more foreign students on our campuses. This means more opportunities for American students to interact with students from other countries. The presence of these students can also help build institutional links for greater collaboration on re-

search as well as commercial arrangements.

*Contribute to the design of institutions.* If land grant universities are to recapture their role as agents of economic and social development, they need to once again play a greater role in the design of institutions for an ever-changing society. At one time they played significant roles in such activities.

The technological revolutions in telecommunications and computers, together with the breakup of AT&T, present society with enormous organizational questions. Individual faculty are already consulting with groups in society who are actually bringing about the changes. But more is required.

Can the major land grant universities mobilize talent and capability to more effectively address these important questions? As long as they retain their strong disciplinary orientation and lack the ability to bring together competencies from various disciplines, the answer is probably "no."

Challenges related to international institutions are as great as those facing domestic institutions. Economic integration on the international scene has far outpaced our political integration. Many of the international institutions which we helped to design at the end of World War II have either broken down, disappeared, or grown increasingly irrelevant. Hence, we find ourselves in each other's way economically, with little or no means to resolve conflicts and make policy choices in a systematic way.

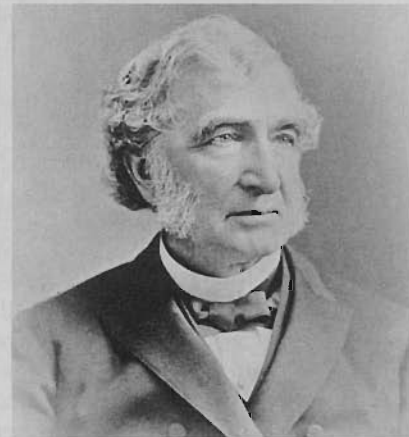
In some respects we are like the original 13 colonies at the time of the Articles of Confederation. We need a new world constitution to reflect the changed realities of the world. Who is to design it? Will we let these issues drift on—possibly until we suffer an international collapse on the order of the 1930's?

*Span the ever-widening gap between the frontier of knowledge and the problems of society.* We need to give direct attention also to what I described earlier as the basic challenge to the land grant universities.

Advancement of knowledge has caused the work on the frontiers of the sciences and the arts to be conducted at increasingly abstract levels. This has pushed the frontiers further from the contemporary problems of society. Those who work on the cutting edge are thus increasingly removed from the problems of society.

One might argue that what has hap-

## Land Grants Won Hard Battle at Birth



U.S. SENATE HISTORICAL OFFICE

*Justin S. Morrill, U.S. Representative from Vermont 1855 to 1867; U.S. Senator from Vermont 1867 to 1898.*

We often take the land grant university system for granted. We shouldn't. While its merits seem so obvious today, the campaign for federal grants of land to states to finance the establishment of these universities was hard-fought and nearly lost. Led by agricultural societies, supporters urged congressional action for 20 years before Congressman Justin Morrill of Vermont introduced the first bill in 1857.

Opponents alleged unconstitutionality and worried about depriving the Treasury of revenue. Finally, on December 16, 1861, after long, arduous efforts—especially by Congressman Morrill—another bill was introduced. The House voted 105 to 100 for the legislation. The Senate vote was 32 to 7, and President Lincoln signed the legislation on July 2, 1862.

—Vivian Wiser

pened is a logical specialization of function. Major research universities concentrate on basic research and graduate training. Other institutions in society do the more applied research and the applied or vocational training.

But it would be an error to think this way on at least three counts. First, such specialization is surely the road to irrelevance. The whole purpose of research and the quest for knowledge—if we want society to reward us—is to produce knowledge needed to solve soci-

ety's problems and make a better life for our citizens.

Second, there is little evidence to support the notion that specialization of the basic research activity is the most effective way to do research. Major breakthroughs have tended to arise out of attempts to solve practical problems for society.

Finally, if the land grant universities really want to specialize in basic research and graduate training, then they need to recognize that they need to scale down their size dramatically. As Daniel Alpert perceptively points out in his 1984 book, published by the Center for Advanced Study at the University of Illinois, there are only a few people who really work on the frontier of knowledge. Moreover, graduate training programs are much the smaller part of overall educational efforts. Thus, if our universities are to specialize in basic research and graduate training they will be much smaller than they are today.

Land grants need to recapture an *institutional* mission orientation. They must organize themselves to bridge *within* the university the growing gap between the frontier of knowledge and the contemporary problems of society. This can be accomplished if we are willing to consider a new layer of institutions within the university, and possibly a redirection of some units now in place. Even with these changes we still need a change in the criteria we use for academic excellence. One possibility is to create more problem-oriented Centers within our disciplinary departments. Such Centers can draw on existing faculty and mobilize existing talent to focus on contemporary problems.

Another possible institutional innovation is to create new Colleges and Schools, with their own staff and faculty, but well-articulated with the basic disciplines. Over a decade ago Purdue University created a new School of Technology to do essentially what the Schools of Engineering did in their early days. Within a few years, that School was the largest on campus! Moreover, in creating the School and its strong outreach programs, Purdue tremendously increased its relevance to society.

Still another alternative is to change the mission of some of our existing disciplinary departments. Some years ago the Department of Agricultural Economics of the University of Minnesota became the Department of Agricultural and Applied Economics. That change

came about in part because of a Congressional mandate for the agricultural research-teaching-extension complex to take a greater responsibility for community and economic development. In other words, it was to broaden its mission away from production agriculture. This principle could be applied to other agriculture departments.

*Give university administrators more authority.* Individual faculty members have become more discipline oriented. They are increasingly beyond the leadership and direction of university administrators.

This independence of faculty is related to funding procedures. Less and less comes to the university. More and more money goes to individual faculty members with university administrators performing public relations and serving as keepers of the heating plant and parking lot.

University administrators thus have a very difficult time developing a strong mission orientation, even if they want to. They can recruit funding from the private sector to develop mission-oriented programs, but that money generally comes with strings attached, as do resources from major foundations. Even endowed positions increasingly come with strong programmatic directions tied to them.

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***More and more money goes to individual faculty members with university administrators performing public relations and serving as keepers of the heating plant and parking lot.***

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My point, of course, is not to quarrel with the drive for quality and excellence. Instead, it is to challenge the notion that only one criterion, publication for professional peers, should be used to measure quality and excellence. For surely that, as much as anything else, is causing us to lose our sense of institutional mission and become increasingly introverted within our particular discipline.

**There Is A Choice**

Having spent most of my professional lifetime within a land grant university, I

have come to believe that our sense of institutional mission must be revitalized. To do that, we need to broaden our concepts of academic excellence and give university administrators more responsibility and more discretion in their allocation of resources. To choose otherwise means a down-scaling of the land grant universities and a shift of resources to other institutions more responsive to the needs of society.

Changes can be made without making dictators out of administrators. Faculty members can still attain their disciplinary rewards. I appeal for us to take greater advantage of the diverse resources present in universities, to mobilize them more effectively, and to help them be more productive in terms of society's goals. That is still done in colleges of agriculture across the country, but much less so than once was the case.

To accomplish these goals requires moving away from the single criterion of publication for professional peers. The sense of mission needs to be elevated and university administrators need to have discretionary funds, freedom, and responsibility to manage and administer a mission-oriented institution—not a collection of individuals, oriented primarily to their national peers, and who only by chance happen to be at a particular institution. Contrary to the notion that this will denigrate the value of individual faculty members, it will do just the opposite.

In this context I need to address the academic freedom question. Many professional colleagues argue that giving administrators more discretion over resources is not what academic freedom is all about!

There is nothing in my suggestions that erodes academic freedom. More importantly, the choice really lies with the faculty. My appeal is that we rediscover our intellectual roots and redefine and revitalize the land grant concept in terms of today's society. It is unrealistic to expect that society will reward us to do just what we want to do.

The choice is not between the disciplinary orientation or a mission orientation directed only to solving society's problems. We obviously must do both. It is a question of balance.

If we fail to reestablish the importance of solving society's problems, the resources will go to other institutions in society where people are so motivated—as they have been doing at an ever-increasing rate this past decade. **□**