

The Future of Agricultural Research

Event: Farm Foundation Roundtable: The Future of Land Grant Universities

Date: Thursday, June 11, 2015

Location: Columbus, Ohio

Time: 20 minutes plus 10 minutes for Q&A



INTRO

To effectively talk about the future of agriculture research, I need to first talk about the past.

In the 1930s, the Great Dust Bowl swept through the Southern Great Plains, spurred by generations of uninformed farming practices and 10 years of drought.

The loss of the agriculture foundation eroded the economy, disrupted the social order and threatened the long-term viability of the region. The Great Plains stood at a crossroads.

In the following decades, individuals and groups....industry and government.... were drawn together by a unified mission of creating a lasting solution. Farmers and ranchers embraced new practices and technology. Agricultural policy was reexamined and rewritten. And individuals, like my organization's founder Lloyd Noble, stepped to the forefront to spearhead land stewardship, soil health and sustainability by offering private resources.

The result was a remarkable recovery. The region's agricultural sector – and the states that depended on it – began to thrive again.

Today, we face a much more complex... agriculture dilemma... on a much larger scale. The issues are now commonly discussed: staggering population growth, environmental concerns, health obstacles, socio-economic issues, food security and resource availability.

Each of these issues are intersecting... in this generation.... to set the stage for a series of unparalleled global agriculture challenges.

These are not doomsday hypotheticals.... but foreseeable situations that require immediate attention and action. Much like what the Great Plains experienced more than 80 years ago,... today,...we find ourselves at another crossroads.

So what are we to do?

The agricultural foundation.... from which our entire world was built.... is to be fueled by research, technology and new innovation to produce more food from diminishing resources.

However, from what I've heard...and from what I've read...and I agree...we have two fundamental problems: 1) we don't have enough money to fund critical research and 2) our research infrastructure is need of repair. Now I'll say something that may shock you...or may

not...depending on your point of view. WE DON'T DESERVE MORE MONEY. We don't deserve more money. With that said, and I'll address this more in a moment.... I'd like to throw 2 more fundamental problems into the mix. The 3rd is...we're too complex. Most of which we can't help. Our country is so agriculturally diverse with the richness of vast natural resources unequalled anywhere in the world. But some of this, is self-induced...which has led to the fractious state we have seen for decades and has left us vulnerable to other special interest, who are (at this moment) successfully shaping our agenda and creating further divides within our own ranks. Which dovetails into the 4th problem...which is**we are horrible communicators**. I remember Colin Peterson, when he was the majority leader on the House Ag committee telling a group of us one day. "You make my life more difficult every day in communicating your needs to committee members without ag backgrounds." "It's never the same story and when one part of ag comes through the door with a proposal or an idea, another part comes in ready to shoot it down."

If I were on the appropriations committee reviewing a request to increase the federal ag research budget....I wouldn't give any more money. I wouldn't appropriate any more money until someone **effectively** explains (and not in this order) the how, who, what, when, where, why...along with expected outcomes and a system for implementation, review and follow up. I'd also like to know what the most pressing issues are, facing agriculture as a whole....both on a global and local level. For each issue, I'd like to see a research roadmap, clearly identifying how we intend to solve the problem, in addition to identifying potential unintended consequences.

With private industry investing heavily in research for the commodity and specialty crops that offer businesses the highest rate of return, who's going to continue to invest in the other areas? Who's going to invest in the much needed areas of basic and translational research in soil, plant, animal, economic, environmental and social sciences? Who's going to invest in technologies that continue to drive computing science skills and infrastructure? Who? The same folks who have always done it? ERS, ARS, NRCS, NIFA, AFRI, NASS, FS, NSF, CGIAR, SCRI, SARE, OREI, CPPM and then NIH, DOE, HHS, EPA USAID and DOD. In addition to this group, we now have FFAR (Foundation for Food and Ag Research) designed to leverage public/private funding for a variety of research areas. And then of course, there's the land grants, big and small and the state ag experiment stations. All of these of course support a massive grant system from which all the money flows with varying degrees of success, oversight and connectivity to solving our challenges.

But...back to the Land Grants. What role are they playing? But before we answer that question, this question raises another interesting question. Why is the PCAST report recommending the establishment of 6 new research institutes, across the country, at \$25 MM/year, for no less than 5 years. Or...\$150MM/year. For the business men in the audience, would you spend \$150MM/year, to create a research (I said research) institute with a 5 year horizon? The vision is only 5 years! This is a recommendation and in the report....they also state and I quote..” **some expert observers note opportunities for land grant universities and other research universities to form regional hubs and centers of excellence that can stimulate more activity from the lab to the marketplace.**” **YES!!** That's what we want to hear, but it's not recommended. So, why the mixed commentary and why are our Land Grants put on the

sideline? I'm a tax payer! Is this duplication? Is this creating synergies with a university system that is rivaled around the world? Why were the land grants created? We have a structure already in place. Use it! Don't defuse it!

Now....no doubt, some of our land grants can use some refurbishing and more on this later. But with regards to the PCAST report, I think it does a great job identifying the ills of our research system, but falls short with regard to targeted solutions. I'm a business man. It wouldn't pass my board nor any board I currently sit on. But I wouldn't throw it out. I'd send them back until it projects....vision, a roadmap to success and clear accountability. AGree is in the process of convening several stakeholders and I trust this forum will be an opportunity to insert some much needed direction. By the way, the PCAST came out in 2012 and we're still discussing its contents in 2015.

There is a way to accomplish the necessary breakthroughs we need from research, but it requires unification, abandonment of old practices and change – three concepts that we humans readily...or not... embrace. The good news is, most of the cards are on the table. How we shuffle the deck and deal the hand will dictate our level of success.

But, allow me in my remaining time, to go back to the land grants.

As president of Noble Foundation, I have both an insider and outsider's perspective on the issues surrounding funding for agricultural research.

I've worked in industry for decades and I currently have the pleasure of leading one the largest private agriculture research organizations in the United States. The Noble Foundation has strong ties to many land grant universities, collaborating with them regularly on educational events and research projects and we participate on a number of federal research grants from the many different government agencies. But 95% of our funding comes directly from our endowment. So we're not dependent on federal grants. The will of one man in 1945 had the vision to endow a research institution for the advancement of agriculture. But Lloyd Noble clearly stated that our research foundation will not diminish nor compete with the land grant extension system. However, there exists, fundamental flaws in our land grant system that makes this pledge more difficult every day. You know what that is? Money! They need money to fulfill the expectations that were placed on this system by the Morrill Acts of 1862 and 1890. But, they need to earn it.

I understand the invaluable contribution land grants bring to the research spectrum, but the level of funding is killing the infrastructure that made us the great innovators in agriculture. Sorry USDA, you can do a lot...but we can't repeat the research success of the last century if the land grants are not functioning on all cylinders. And why aren't they functioning on all cylinders? Why do some land grants have a better reputation than others? Leadership? That's a big part of it.

But I would be a bit more provocative and say that one of the bigger reasons is because land grant universities have lost focus on the purpose for which they were established.

Let me be clear: I'm not talking about the colleges, schools and departments of agriculture within these land grants. I'm talking about the university presidents, chancellors, regents and politicians, who in many cases have traded in their original intent for broader accessibility.

Washington State University Extension wrote an article about land grant extension about five years ago that concluded by saying: "Millions of students are able to study every academic discipline and explore fields of inquiry far beyond the scope envisioned in the original land-grant mission." These words were written with a celebratory tone.... as to say, "Look how far we come. Look at our tremendous growth."

I am not disputing the need for options but this statement grieves me. This is not something to be proud of....this is not the evolution of an institution. It is the abandonment of intent, and is leading to troubling outcomes.

Do you know why institutions fail? In my opinion, it happens when they lose sight of their mission. Agriculture and engineering are in some degrees taking a back seat to the competitive forces of what's driving college enrollment and interest.

Their eyes have shifted to newer and more exciting ventures. Concern over access and options are diminishing the relevance of these university's agricultural colleges.

Agricultural schools, colleges and departments are now fighting for attention at a university that was founded specifically for them.

Agriculture should be touted and held as the crown jewel of these institutions, especially during a generation when we need the best and brightest minds to eagerly pursue agriculture as a life's calling.

This goes far beyond a simple governmental edict or a mission statement.

The United States – with our wealth of natural resources – has a moral imperative to advance agriculture in the world and provide solutions to these challenges. Land grant universities should be the mechanism to completing this task. According to a Washington Post story, "they conduct two-thirds of the nation's academic research."

Right now, however, we have watered down the elixir that was designed to solve our illness.

We have collectively failed at communicating the value (once again) about the importance of agriculture.

Fortunately, we are seeing a renewed student interest in all things ag. But, this too is coming with a different set of challenges for what I'll call "main stream agriculture". The latter two generations are shaping agriculture today and they are doing it with their pocketbooks. And...to a large extent, due to their political activism, shaping Ag policy and the programs at USDA; all of which... "robs Peter to pay Paul"... which in the end, creates a lack of focus on the critical issues affecting agriculture on a much broader and more important scale....like national security.

So we need to figure out how we are going to embrace the cultural changes, restate our priorities and focus as a whole, to ensure our research infrastructure is repaired and functioning properly and... work in harmony.

Solutions

As I said earlier we are at a critical juncture in our world's history. We do not have time, resources or the manpower to waste on missed opportunities and unorganized efforts.

With the PCAST report and the AGree assessments, we can clearly and confidently say that we have shown the current model is not effective in producing the results that we need.

We must create a new model for how agriculture research is conducted and funded.

First, we must prioritize the national challenges facing agriculture. This transcends land grant universities and includes all levels and types of researchers in the agriculture sector.

This would be a tremendous undertaking, an unparalleled task that would define our lives.

But imagine having all these brilliant minds working from one playbook, pulling together, striving toward a singular focus of solving the highest priority problems.

Establishing our priorities would ensure that critical issues facing our world in the next 40 years are addressed first and that public funds are used to create the greatest amount of outcomes per dollar.

This is another form of stewardship and agriculture has always claimed to be the best steward of our resources. Let us show it.

Once a priority list is developed, then we must connect like-minded researchers from across the country. They may work at different universities and in different time zones but the capacity to build collaboration is the linchpin to success.

Instead of dozens of scientists conducting redundant research on the same problem, each scientist could attack a segment of problem.

The amount of research that could be achieved, the new ideas formulated and the efficiency of this model is almost unimaginable.

It is at this point, after we have fixed our own sector, that we then go back and ask for more funding.

After we have demonstrated our ability to self-regulate and organize, we can justify more resources, because we can show a streamlined mechanism for finding solutions.

More so, we must extend our funding efforts beyond the federal government.

It is absolutely necessary to infuse the agriculture research sector with private funds.

Additionally we must find new ways to bring additional wealth into the sector. Many would argue that this can't be done.... but.... according to the Rural Policy Research Institute, in the coming generation more than 75 trillion dollars are going to transfer from one generation to the next between 2010 and 2060... much originating in rural America.

There is a way to provide a new vehicle for allowing a portion of this funding to flow into new private entities that would generate more potential funding for agriculture research as a whole.



Charitable Agricultural Research Act

University Support:

- Association of Public and Land-grant Universities (APLU)
- California Polytechnic State University, San Luis Obispo
- California State University, Fresno
- Clemson University
- Cornell University
- Iowa State University
- Michigan State University
- North Dakota State University
- Oklahoma State University
- Oregon State University
- South Dakota State University
- Texas A&M University
- The Ohio State University
- University of Arizona
- University of California System
- University of Florida
- University of Kentucky
- University of Maryland
- University of Minnesota
- University of Wisconsin
- Washington State University

Charitable Agricultural Research Act

Sector Support:

- American Farm Bureau Federation
- American Farmers & Ranchers
- American Honey Producers Association
- American Seed Trade Association
- American Sheep Industry Association
- American Society of Agronomy
- American Society for Horticulture Science
- American Soybean Association
- American Veterinary Medical Association
- Biotechnology Industry Organization
- California Blueberry Commission
- California Cattlemen's Association
- California Citrus Industry
- Crops of America
- Crop Science Society of America
- National Association of Wheat Growers
- National Cattlemen's Beef Association
- National Chicken Council
- National Coalition for Food and Agricultural Research (NCFAR)
- National Corn Growers Association
- National Cotton Council
- National Council of Farmers Cooperatives
- National Farmers Union
- National Grain and Feed Association
- National Greenhouse Manufacturers Association
- National Milk Producers Federation
- National Turkey Federation
- Oklahoma Farm Bureau Federation
- Olive Growers Council of California
- Poultry Science Association
- Soil Science Society of America
- Texas Farm Bureau Federation
- Tuare County Farm Bureau Federation
- United Egg Producers
- United Fresh Fruit and Vegetable Association
- U.S. Apple Association
- U.S. Eggmen Association
- USA Rice Federation
- Western Growers Association
- Western United Dairymen

Conclusion

Today as I wrap up, I want to address some of the thoughts that I'm sure some of you have had during my talk.

I'm sure some of you have cringed at my frank assessment on many fronts.

I'm sure some have disagreed with my proposed solutions for agriculture research, thinking they are over simplified, impossible or naïve.

But I will close today with this one thought. Success in life – none the less agriculture research – has never been found by going it alone.

We like those stories of lone rangers achieving greatness, but this is fiction and folly.

Organized, focused collaboration, as well as innovative funding, is the only way we can overcome the enormous challenges before us.

So if you ask me our overarching question: What is the future of agricultural research? I will answer by simply saying, "It is bright....if we're willing to change."



Thank you.