

Building Global Research Alliances: Compromises and Opportunities That Can be Used to Move Agricultural Sciences Forward

K.A. Dawson

**Vice President and Chief
Scientific Officer**

***Alltech Center for Animal
Nutrigenomics & Applied Animal
Nutrition, Nicholasville, KY***



Alltech[®]



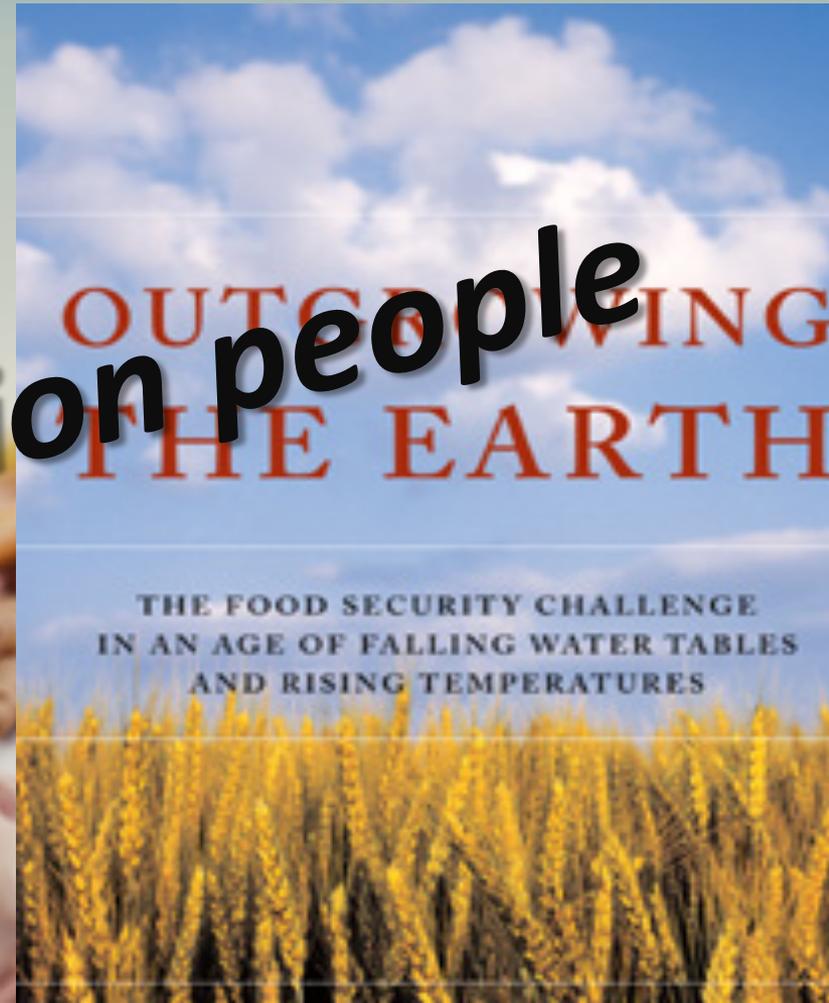


“The **times** they
are a **changing**”

- Bob Dylan

A future focused on food

- Food needed for a booming population – not just calories but quality nutrition



A future focused on food

- Land and water resources are increasingly limited
- Pollution and waste must be curbed
- The food chain is increasingly global and complex
- There is a greater need to minimize food chain-based threats to human health



A future of Agricultural Science: *The necessity*

***Science for productivity has
become science for
sustainability***



The results

- Agricultural research is evolving away from its initial roots
- New models for agricultural business development are coming forward
- Commercialization becoming a key to technology advancement
- Agricultural research is becoming global activity





Perspective

- **20 years of academic experience**
- **13 years in commercial research activities**
- **Understanding the contrast in cultures**
- **Define systems for better interactions**



Commercial agendas:

Moving to the Dark Side

Alltech as an Entrepreneurial Company

- Novel approaches for agriculture
- Many of the business models just don't work
- We survive on innovation
- Supports a team of creative scientists
- Dedicated to education and advancement of science
- We do not rely on governmental support



Alltech

Our Challenge

- Developing the innovations needed to move forward
- Building a research infrastructure to allow a 4-fold increase in growth
- Continue to contribute of scientific knowledge and education

Challenges to academic world

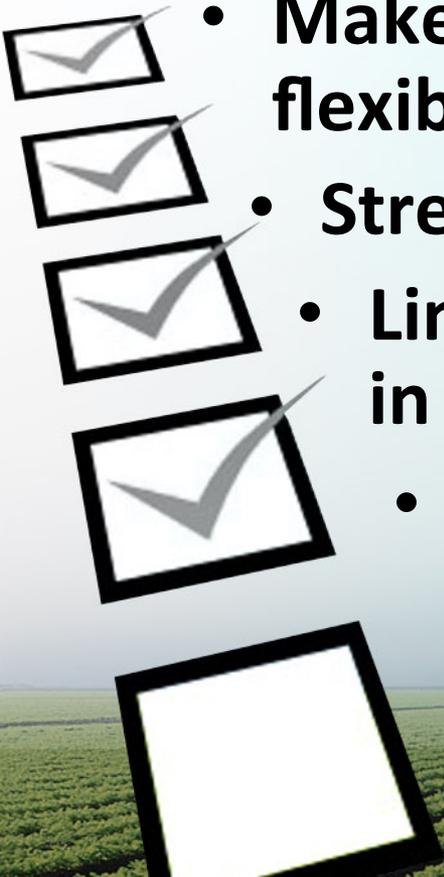


- **Less governmental support will be available**
- **More competition for funds**
- **More time generating research support than is spent on science**
- **More novel industrial interactions are developing**
- **There is a need to sell the science**

Agribusiness, government/regulatory and academia all have the same scientific goals

Use scientific knowledge to:

- Help produce safe, high quality food
- Make resource use more efficient, flexible and sustainable
- Strengthen food animal and human health
- Limit waste and pollution - keep nutrients in the food chain
 - Promote consumer confidence, knowledge and enjoyment of food





12 years of change

- **What do relationships need to look like?**
- **How do they need to evolve?**



Current challenges to industry/ university interactions: The Barriers

- **Costs**
 - Flat rate overheads regardless of universities contribution
- **Urgency**
- **IP protection**
- **Publication**
- **No clear definition of each partner's contribution**

Barriers/Opportunity: Understanding the Relationships (partnership)

- Does not need to look like a government grant- *Flexibility is the key*
- Not just a one sided process
- Recognize the contributions of all partners
 - Financial contributions
 - Intellectual contributions
 - Availability of physical facilities
- **COOPERATION** is critical



Commercial opportunities: There is competition for resources

- **Private research companies**
- **Other agribusinesses**
- **Other universities**
- **International institutes**



Educating investigators: Understanding the new reality

- **GET REAL!**
- **Provide a useful outcome**
- **Provide solutions to real problems**
- **Realize there is no stigma associated with genuine commercial relationships**
- **It is critical to develop relationships with key players in agribusiness**



**Evolving programs:
Developing Research and
Educational Alliances**





Partnership Programs

Master Agreements

Research Alliances



Master Agreements

- **Designed to speed up project approval projects**
- **Establishes the standards for cooperation**
 - IP issues
 - Allows sharing
 - Standards for material transfer
 - Publication issues
 - Nature of cooperation



Master Agreements

Research Project(s)

Testing and Service Agreement

Collaborative Co-Directed Project(s)

Unrestricted Gift(s)

Graduate Student Sponsorship

Post Doctorate Fellowship Support

Alliance Agreement(s)

Strategic Research Alliances

Based on common research interests

Standard level of base support

**Activities controlled by a joint
management committee**

Projects (customized goals)

Sponsored joint research projects

Student and post doc support

Seminar series

Maintenance of facilities

Administrative support

Developing research alliance

- Designed to stimulate teamwork
- Multi-discipline teams
- Joint management
- Access to joint funding
- Shared intellectual property
- Clear contributions to science



Structure of Alliances: A collaborative entity

- Set annual funding base
- Administered by a joint management committee with common goals
- Understanding of IP relationships
- Commitment to student support and publication
- Possibility for a variety of alliance activities
- Recognition of strengths of participants

What compromises will the university make?

- Perceived damage to reputation
- Evaluate real costs of research work
- Recognize contributions of outside collaborators
- Share IP
- Share control of research initiatives
- New level of flexibility
- Contribute time and facility use

What opportunities will the university have?

- Clear road to solution driven research
- Share in the application of research
- Opportunity to work in rapidly growing innovations
- Unique sources of funding
- Practical applications of science
- A new educational process for students



What these alliance are not:

- Not a philanthropic effort
- Not designed to provide large amounts of unrestrained grant support



Why should agribusiness work with agricultural schools?

- Source of technical expertise
- Perceived reputation
- Site for developing future scientists
- Established facilities





Case study: Alltech and the University of Kentucky Nutrition Research Alliance



Measure of success: Alliance accomplishments

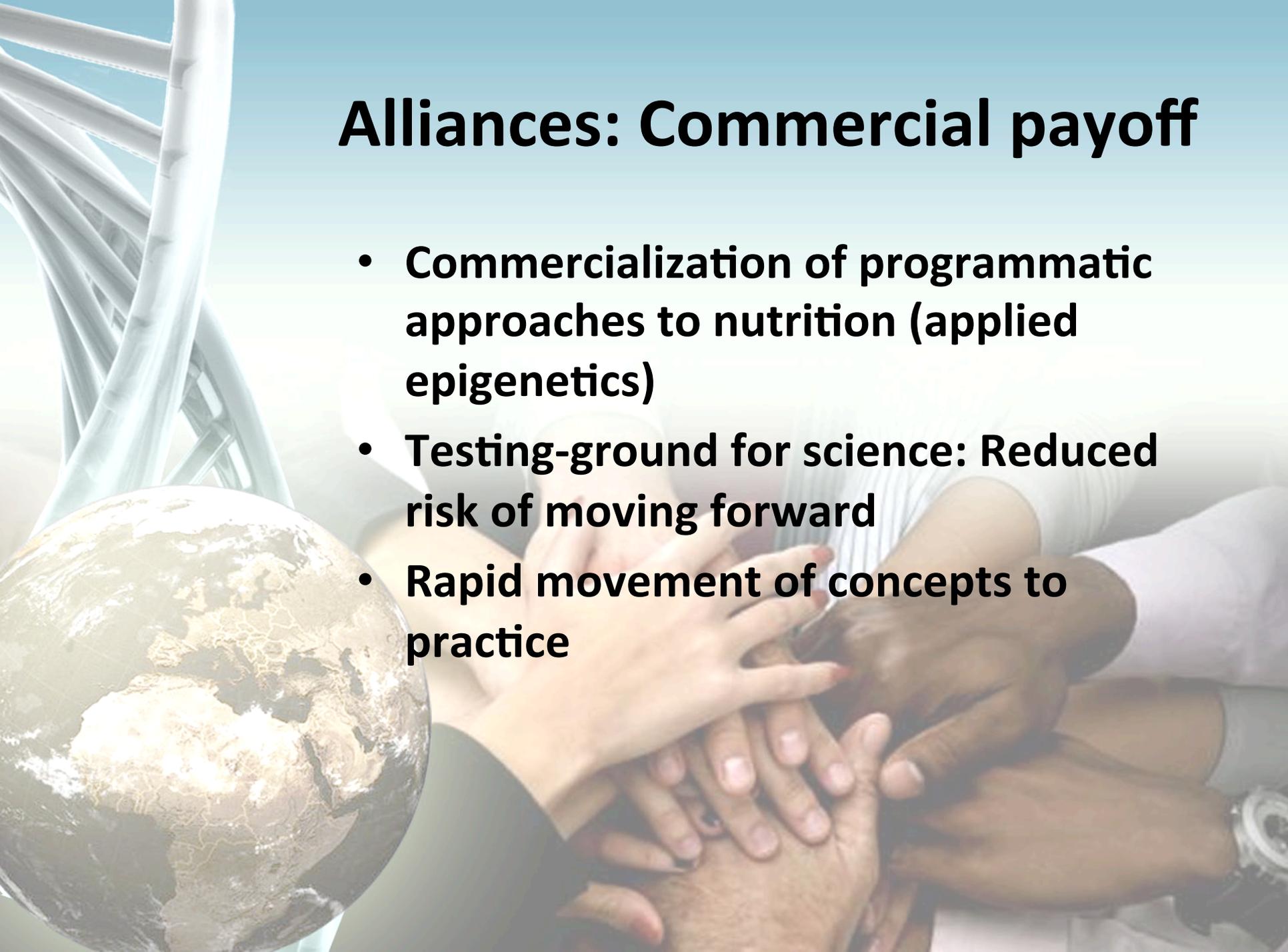
- 13 Peer reviewed publications
- 50 abstracts at international meetings
- Over 100 presentations
- 5 Ph.D. Students
- 4 Post-Doctoral Fellowships
- 2 visiting scientist
- 6 year seminar/workshop series

Distinguished
Lecture Series
in Nutrigenomics



Alliances: Commercial payoff

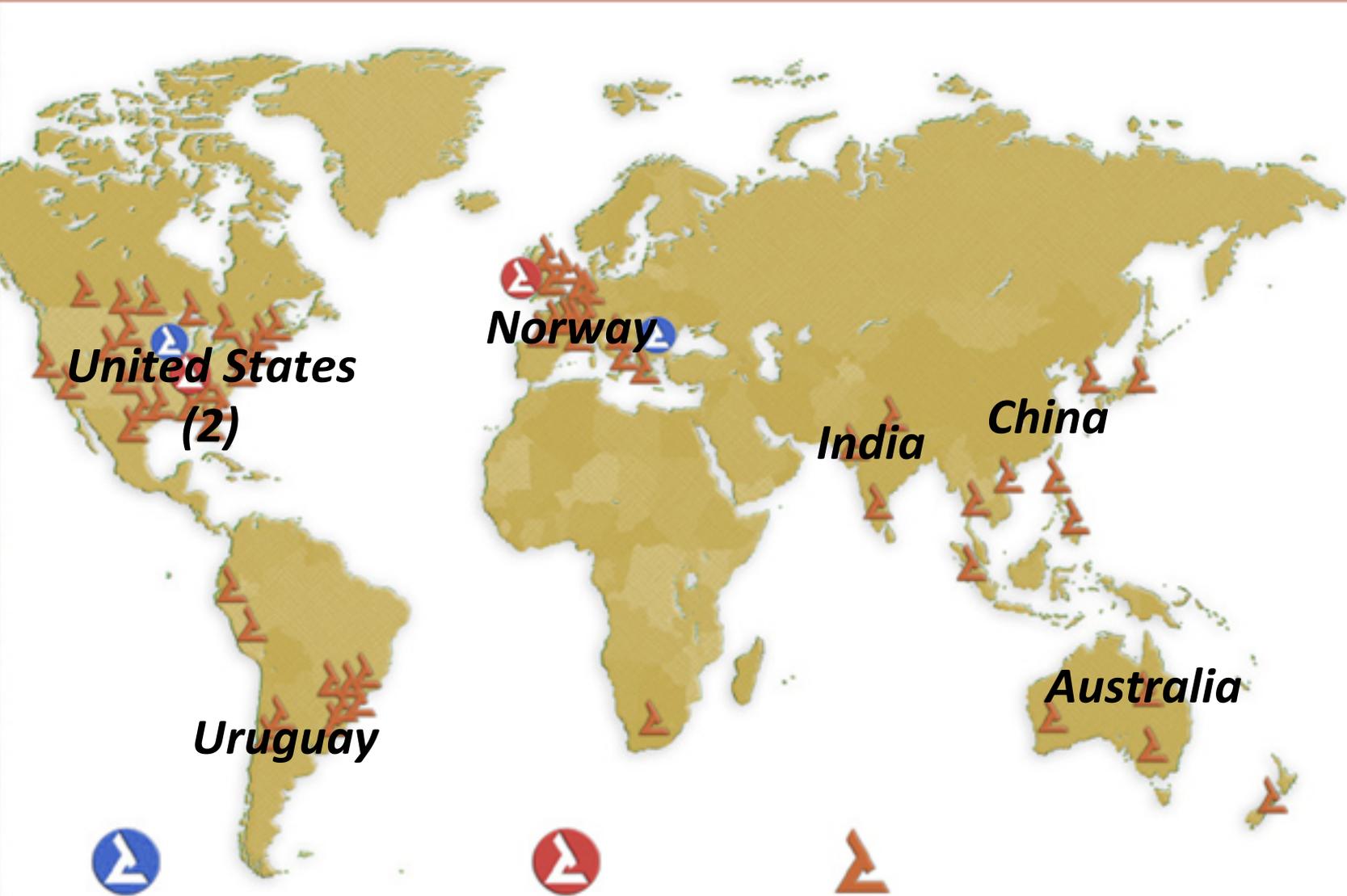
- **Commercialization of programmatic approaches to nutrition (applied epigenetics)**
- **Testing-ground for science: Reduced risk of moving forward**
- **Rapid movement of concepts to practice**



Established Alliances

Alliance	Focus area
Alltech /University of Kentucky Nutrition Research Alliance at Coldstream	Poultry Nutrition Research
Nutrigenomic Alliance	Nutrigenomics and Epigenetic Research (Seminar series and Professor Support)
Alltech/Bangalore University Research Alliance	Ruminant Nutrition/Feed evaluation
Alltech/Nofima Strategic Research Alliance	Aquaculture and Fish Nutrition
Alltech/Rivalea Nutrition Alliance	Swine Nutrition
Alltech/Chinese National Feed Quality Control Center Alliance in Beijing	Feed contamination and analytical testing

Defined research alliances: Global distribution



Partnerships under negotiation

Alliance	Focus
Northwest A&F University, China	Ruminant Nutrition
Zhejiang University, China	Swine Nutrition
South China University, China	Poultry Nutrition
Jiangnan University, China	Meat Science and Food Processing
UDELAR, Uruguay	Range Science
North Carolina University	Masters of Science training program
University of Dijon/ENESAD	Equine Nutrition
Harper Adams University	Ruminant Nutrition
University of the Philippines/ UNAHCO	Monogastric Nutrition



Collaboration replacing ivory towers

- **Research funding tight**
- **Equipment expensive but key to scientific progress**
- **Multi-discipline approaches needed**
 - **Accelerating science into practical use is critical!**



It is time for a cultural shift: Breakdown the barriers

- We will not be doing things the way they were done in the past**
- The new environment will have a different set of cultural values**
- May not be appropriate for all partners**
- Future scientist will need to feel comfortable in both the academic and commercial environments**

Conclusions

- It is time to look for new models for agribusiness and academic interactions
- The evolution of these relationships will be critical for agribusiness success in the future
- Alliances and/or partnerships have been shown to provided an effective tool for increasing the relevance of our research efforts
- It will be important to understand how successfully we use these tools in the future

