

Extension Education Symposium: Extension and industry outreach for tomorrow's producers

55 Developing partnerships between academia and industry.

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Partnerships between academia and industry continue to be an important aspect of aiding in providing educational and research opportunities to advance the agriculture industry. Funding for applied research and extension continues to be difficult to both secure funds and develop long-term strategic partners. Understanding what industry partners are seeking in terms of strategic initiatives and corporate missions will be important in securing a long-term partner. In addition, extension needs to develop programs and other opportunities that will target a broad geography, deliver science-based outcomes, and aid in the implementation of these outcomes utilizing the latest technologies. Industry partners are actively seeking academic partners with a strong reputation in their field of interest who can deliver within a timely manner on tasks set forth by both parties. Academia would benefit by using more power of persuasion, salesmanship, and clearly illustrating to an industry partner the ROI for both parties. Once the right partner is chosen, articulation and documentation of terms, executing a contract that respects the integrity and commitment of all parties as well as timely delivery of outcomes is imperative to continued collaboration. Some significant roadblocks in negotiations between academia and industry occur during the processes of valuation, IP ownership, indemnification, royalties and conflict of interest. Often, academia representatives do not have enough information to understand the market factors during negotiations, however, industry has proprietary issues that restrict corporations from sharing information with regard to risk mitigation and value assessment for given products and markets. Lack of knowledge surrounding industry constraints coupled with the inability to share knowledge from industry can make negotiations and partnerships difficult. Enhanced appreciation for constraints, instead of focus on incentives, is required to share ideas and develop long-term partnerships.

Key Words: academia, industry, partnership

56 What I've seen and done on both sides: Academia and Industry.

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There has been a progressive change in the evolution of information transfer in animal agriculture over the past 70 years. During the era of 1930s to 1960s, information flow centered on university research >> > transferred to the local county agent >> > and then shared with the producer. Starting in the 1960s to 1970s, that process started to change. Numerous commercial companies started adding expertise to support product research, the advent of consultants occurred, universities started filling extension positions with greater research expertise and focus and a new era of information flow started as these industry specialist and consultants played a much more active role. Today we find an even greater role of industry in technology transfer as they explain new R&D findings which coupled with reduced funding and staff downsizing at many universities which has resulted in a more educated clientele looking for information in new ways. Where are we heading? There are numerous opportunities for both industry and academia which likely will lead to greater partnership opportunities driven by varying needs. From a university perspective funding needs will likely drive partnerships. From an industry perspective, many companies are starting to recognize the important and needed role universities play in educating undergraduates and graduate students who fill vital staffing industry needs. These

collaborations will also expand in areas of mutual research interests and how that research is transferred to clientele groups.

Key Words: technology transfer, academia, industry

57 Training of students: Real-world experience on farm, in extension, and industry.

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Significant challenges exist in training students to enter employment in the animal industry. Farm numbers continue to shrink while farm size and complexity has increased. Excellent opportunities exist for graduates with proficiency in communication and problem solving and are able to integrate sophisticated technical knowledge to practical problems on the farm. The challenges are many. Reductions in faculty, particularly in extension and more applied research and teaching positions, are common in our universities. Students are increasingly from urban and suburban backgrounds with little previous agriculture experience but considerable interest in food production. Declining state and federal support for undergraduate education and more applied graduate research are additional challenges. However, many new opportunities are available to provide needed training experiences. Summer internships are common for students at dairy farms and in industry positions in sales, market research and technical support. The North American Intercollegiate Dairy Challenge Contest and Academy has been successful in fostering better communication of students with dairy industry partners. Over 4,500 students have participated since its inception in 2002. Employment on campus dairy farms provides opportunities for non-traditional students to obtain farm experience. On farm research at the university and on commercial dairies expands student perspectives. Training graduate students presents similar challenges. In the past, formula funding permitted research to address timely research needs of our animal industries. However, these funds have been replaced with competitive grants directed toward specific narrow problems. Students begin their graduate studies with less input into research project design and have less time for exposure to our farms. Industry sponsored management research enables students to conduct on farm research on commercial farms. Farm sponsored check off programs such as the Virginia Set-aside program direct funds toward more applied research.

Key Words: students, extension, industry

58 Retaining qualified extension faculty: An administrator's perspective.

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Retaining qualified faculty for extension positions is an important factor in the success of animal, dairy, and poultry science departments. To be successful in an extension appointment requires a unique combination of skills. I believe the following skills are critical: (1) sound technical training, (2) excellent written and oral communication skills, (3) a thorough understanding of the industry one is hired to serve and a desire to serve that industry, (4) excellent time management skills, (5) ability to translate scientific knowledge to practical applications in a systems approach, and (6) the ability to develop and maintain relationships with clientele. Candidates with these skills have an improved probability of being successful. Retaining highly qualified faculty requires support

from multiple levels of the institution. Factors affecting retention include (1) a positive departmental culture, (2) a competitive salary and benefits package, (3) clear job expectations and provision of resources required to effectively carry out the job duties including an institutional culture that supports and values extension programming, (4) a stimulating and challenging work environment, and (5) a departmental, college, and institutional culture that helps the faculty member balance the demands of work and family life and fosters professional development. In my experience, having a positive departmental culture is the most important. Department heads and chairs have a very direct effect on departmental culture (both positive and negative). Administrators and promotion and tenure committees at the departmental and college level must place a high value on extension programming in order for faculty with extension appointments to feel valued. Promotion and tenure documents at the department, college, and institutional level should reflect the scholarship of extension programming. Recruitment and retention of extension faculty is a multi-faceted challenge and one that requires commitments at the departmental, college, and institutional level to be successful. In my experience, hiring candidates with the right combination of skills and developing a positive departmental culture are the most important means to improving success.

Key Words: extension, faculty, recruitment

59 Development of mobile applications in extension. R. Lawton Stewart, Jr.*¹ and G. Cliff Lamb², ¹*The University of Georgia, Athens, GA*, ²*The University of Florida, Marianna, FL*.

Mobile computing devices such as smartphones and tablets are quickly becoming the principal means of communication in the United States. The adoption of smartphone and tablet technology among adults over the age of 18 has increased from 35 and 8%, respectively, in 2011 to 55 and 42%, respectively, in 2014. This growth is visible in the agricultural field as well. A search of currently available mobile computing applications (apps) for agriculture revealed 42, 28, 19, and 11 apps are available for crops, livestock, spraying, and pests, respectively. Given that the role of extension is to extend lifelong learning opportunities through unbiased, research-based education, the utilization of apps provides an excellent opportunity to serve clientele. This technology can improve the power to disseminate information, make informed science-based decisions, and collect data. However, when considering the use of this technology for an Extension program, several aspects of implementing this technology should be addressed. Most attempts at Extension-based apps are based on currently available informative publications for dissemination of information, or spreadsheet-based decision aids for decision-aid tools. This development is initiated by the need of information in the field, however, the challenge often becomes getting information transferred to an app-accessible format. The most common form is an app available through application distribution platforms specific to a smartphone mobile operating system (e.g., Apple iTunes and Google Play). These require app-specific programming and approval through the distributor; however, once downloaded to a mobile device,

are accessible independent of a data connection. Another avenue is to develop a mobile-friendly website. This makes the information or decision aid available on any operating platform, however requires a data connection by the device. Finally, the impact of this technology should be quantifiable to allow extension personnel to measure the effect of their program. This can be performed through download statistics for mobile apps, or through website analytics for mobile-friendly websites. With the increased availability of information through mobile devices, mobile device applications are an excellent tool for extension personnel.

Key Words: mobile app, extension, decision-aid tools

60 Social media to deliver extension. Alison Van Eenennaam*, *University of California, Davis, CA*.

The use of social media in public engagement and extension is a relatively new phenomenon, and many scientists are cautious about using it professionally. A recent survey of 4,000 researchers carried out by the Pew Research Center found less than half of the researchers ever used social media, 24% use it to blog about science, and only 12% said they currently use it to follow experts in their field. Depending upon the target audience, social media may or may not be a useful tool to deliver extension information. Social media gives opportunities to reach a much wider public audience than traditional extension meetings, but it may not always be the best approach to reach more traditional agricultural clientele who typically are an older demographic. One issue with the professional use of social media is the difficulty of objectively documenting impact. Although the number of followers or page views is an easy metric to report, it does not really evaluate impact. Merit and promotion evaluation systems will need to evolve to reflect the increased use of social media in extension programs, and appropriately reward academics for time spent effectively using these forms of communication. The UC Davis Animal Biotechnology and Genomics Extension program incorporates the use of social media including websites, YouTube educational videos, and the use of Twitter. For extension work in controversial areas, educators need to be prepared for the unpredictable nature of social media audiences. Several high-profile “public shamings” following an ill-advised tweet provide cautionary case studies of one of the risks of using social media, especially when discussing controversial topics. Although Twitter is useful for directing interested followers to a website or alerting them to an upcoming meeting, it is difficult to explain the nuances of complex topics in 140 characters, and maintaining a civil and respectful dialog can sometimes be challenging. Extension educators can certainly benefit from the expansive reach of social media and magnify the reach of their programs, and the next generation of educators will likely increasingly do so in the future. As with all extension communication, great care should be given to wording to ensure the professional dissemination of science-based information using social media.

Key Words: social media, Twitter, YouTube