

Training the Next Generation of Extension Economists

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Since its inception in the Smith–Lever Act of 1914, Extension has been a hallmark of the tripartite mission of U.S. land grant universities. In fact, arguably, Extension is a globally unique feature of the U.S. public universities that provide practical higher education opportunities to the public (Rasmussen, 1989; Gould, Steele, and Woodrum, 2014). Through the Cooperative Extension System, a unique partnership among federal, state, and county governments allows “useful and practical” researched-based knowledge to be disseminated beyond the campuses of various land grant universities to farmers, ranchers, and consumers. However, this century-old cooperative system is at a critical inflection point, facing both challenges and opportunities.

The first challenge involves hiring and replacing Extension economists under dwindling Extension funding and declining rural populations. By law, 80% of the Smith–Lever funds are allocated in proportion to the state’s relative share of rural and farm population (Thomson, 1984). As a result, on an annual basis, the Smith–Lever Act provides more funds to states with a higher percentage of rural and farm population. While turnover in the workplace, due to retirements, is a common challenge faced by many universities, the replacement of Extension economists poses a unique challenge to agricultural and applied economics departments, which must consider both internal needs and those of the external constituent base. In particular, many Extension economist positions require extensive knowledge and firsthand experience in agricultural production and/or agribusiness. With farm and ranch numbers declining, so too are the numbers of people coming from the farm or rural America into academia. This poses numerous questions: Does this decrease in the number of people with experience in the agricultural sector mean that universities will have trouble serving their Extension constituents with qualified persons? Can universities look to other sources to fill these Extension positions? How can universities train people to fill those needs?

The second challenge is related to responding to increasing competition from private outlets and growing demand for new, responsive Extension programs from producers, policy makers, agribusiness, and consumers. Extension faces unprecedented competition in the information marketplace (King, 2018). The increasing competition comes not only from companies in the broader agriculture and food industry but also from information titans such as Google, Apple, Facebook, and Amazon. With competing information more readily available, what is the best strategy for Extension to compete and thrive in this new information age? At the same time, demand for Extension programming continues to expand in all areas, including many consumer-driven topics such as food safety and nutrition, the environmental impacts of agriculture, agricultural trade, and animal welfare. There is also great demand for Extension economists to provide well-reasoned but often rapid responses to proposed legislation, regulation, or policies. This calls for new expertise in the Extension workforce to cover these topics of growing interest.

This perspective piece analyzes the challenges and opportunities surrounding the recruitment, training, and evaluation of future Extension economists. We argue that a more modern, inclusive, and diversified workforce, responsive to the needs of producers, industry, and consumers, is key for the success of Extension for the next century. In particular, we advocate for the recruitment and hiring of more women, underrepresented groups, and international Extension economists, more creative training of graduate students for Extension positions, and better

integration of Extension economists within agricultural economics departments, colleges of agriculture, and county-based Extension systems.

Recruiting for the Future: A More Modern, Inclusive, and Diversified Workforce

Women landowners play significant and increasing roles in U.S. agriculture—almost half of the land across the United States is owned by women. The 2014 USDA Tenure, Ownership and Transition of Agricultural Land (TOTAL) survey shows that over 76% of land with a female nonoperator landowner is controlled by someone older than 65 (Bigelow, Borchers, and Hubbs, 2016). However, despite an increasing number of women in agriculture programs across the land grant universities, women producers, especially senior women landowners, represent a significantly overlooked group in federal and state data collection as well as in Extension programming. This is historically at odds with the original intent of the Smith–Lever Act, which included family and consumer sciences and had been referred to as the first piece of federal legislation with direct benefits for women.

A key obstacle is lack of representation of women Extension economists. According to the American Economic Association’s Committee on the Status of Women in the Economics Profession, only one in five tenure-track economics professors is a woman (Tankersley and Scheiber, 2018). Arguably, the lack of women Extension economists for both tenure-track faculty and field specialists is even more pronounced. This disconnect will be increasingly significant in the future. For example, Iowa data show that 14% of all land in Iowa is currently owned by a woman landowner who is at least 80 years old. Of these landowners, 82% currently do not farm, and 12% live out of state (Zhang, Plastina, and Sawadgo 2018), highlighting the urgent and growing need to serve women producers and women landowners. A particularly effective strategy would be more women Extension economists.

The 2012 Census of Agriculture shows that 95% and 86% of U.S. farms are currently operated by a white or male principal producer, respectively (USDA, 2014), suggesting that U.S. agriculture is still a white- and male-dominated industry. In spite of this, the recent U.S.–China trade war serves as a perfect reminder of the importance of international markets for U.S. agriculture (Balistreri et al., 2018). USDA Foreign Agriculture Service data show that more than 20% of U.S. agricultural products are sold to foreign countries (USDA FAS, 2017). The Brookings Institution also forecasted an unprecedented expansion of the global middle class, with Asians representing 88% of the next billion entrants into the middle class (Kharas, 2017). In sum, U.S. agriculture will continue to rely heavily on international demand, which suggests greater demand for Extension programming to help producers and consumers better understand these international markets.

The diversified workforce also calls for more representation of other underrepresented groups, including people with disabilities, African Americans, Hispanics, American Indians, and socially and economically disadvantaged groups such as beginning farmers and ranchers. For example, in many states, a growing share of agricultural laborers, producers, Master Gardeners, and consumers are Hispanics, but they remain underrepresented in science and economics education and the Extension workforce. According to the latest Census Bureau projections, minorities will account for 56% of the U.S. population by 2060. The largest growth is projected in the numbers of Hispanics, Asians, and persons of multiple races. The Extension workforce for the future needs to be responsive to these long-term trends.

Furthermore, many economics and agricultural economics graduate programs are populated by a majority of international students. As these graduates look for employment opportunities upon completion of their graduate work, they are finding many Extension positions open but have little understanding of or training in how to compete for these jobs. Encouraging international students to consider Extension positions is key to increasing their interest and willingness to be trained. International students also bring unique skills to the table that may enhance their effectiveness as Extension economists. As trade grows in importance in agriculture, their understanding of foreign markets is useful. In addition, despite their limited knowledge of U.S. production agriculture, many international students have expertise in topics of growing interest, including environmental impacts of agricultural production, animal welfare, food safety and nutrition, and adoption of new technologies. Of course, the largest challenge to international students when it comes to Extension is the language barrier. Good

communication skills, both written and oral, are key to a successful Extension program. International students with these skills will be especially competitive in other job markets.

University departments have been diversifying for decades. As we look around, we see colleagues of both genders coming from many different backgrounds, both domestic and international. However, the Extension portion of our faculty is only just beginning to diversify. Within the last 10 years, diverse applicants have been hired into the traditional Extension fields of farm management, policy, and marketing. Continuing this trend, through recruitment and training, is vital to the continued success of Extension economists throughout the country.

Currently, when a new Extension economist is hired, the priority is often to find a person whose area of expertise resembles that of individual retiring. While this can help smooth the transition, a rigid hiring strategy focused on the past could miss opportunities to shape the Extension workforce for the future, which arguably requires greater representation of women, underrepresented groups, and international Extension economists. In other words, if the previous and current image of Extension looks like producers, the future Extension workforce increasingly resembles consumers.

Can Extension Still Make a Difference amid Growing Private Competition?

Extension faces unprecedented competition in the information marketplace. Although this is not a new concern, today's Extension competitors are no longer an abstract potential. The competition is at least twofold: First, private agricultural companies increasingly leverage big data and artificial intelligence to provide competing resources and information for producers. Second, new players such as Google, Apple, Amazon, and Facebook provide a more readily available and disruptive platform for information that exerts growing influence on Extension's current and underserved clients. With the development of better remote sensing technology, artificial intelligence, robotics, drone technology, and sensors, many nonagricultural firms are expanding their footprint in agricultural sectors. Arguably, some of the information featured on these newer platforms is produced by Extension systems, but producers and consumers are increasingly less aware of this linkage. Too often, Extension faculty and leadership myopically focus on specific information technologies themselves rather than the impact those technologies might have (King, 2018). In particular, many focus on the time and monetary constraint in adopting new technologies as opposed to the potential learning gains for clients and the opportunity to reach underserved clients. The public's growing concerns about food quality issues such as GMO technology as well as the water quality impacts of agricultural production are two examples that require innovative approaches in Extension programming.

A key strength of Extension is the strong connection with research in land grant universities and unbiased, research-based information. Producers and consumers now often see multiple sources of sometimes conflicting information on the same topic and struggle to discern and distill information. A way forward for Extension economists is to serve as the "screener" or "gatekeeper" of information and news without commercial or political bias. Sticking to the research-based, unbiased nature of Extension programming will also help producers and consumers make informed decisions by advancing the applications of research. The mission of Extension to serve the entire public rather than a select few has significant implications right now, when more resourceful producers and multinational agricultural firms can invest in newer technologies, creating greater challenges for beginning farmers and underprivileged producers in competing with their peers. However, this requires Extension leadership, faculty, and specialists to be more agile in adapting to newer technologies, systems, and paradigms.

Effective Extension education is built on trust and relationships. Even in the social media age, reputation and trust are important to followers. It takes time and sound, research-based analysis to build trust and earn respect from the clientele. As competition from the private sector or NGOs grows, a role for Extension is still research-based education. How can Extension make our clients better consumers of the information that we and others provide? Extension is often producers' primary source of a second opinion.

Another key is to encourage and incentivize Extension faculty and area specialists to work across state lines and share information and programming. This is already occurring within certain multistate research and Extension

projects, but Extension economists are in a good position to foster more multistate collaborations with other Extension colleagues. Applied research and Extension—particularly in agriculture and rural development—is often place-based. Although region-specific factors such as weather, soil, and culture need to be recognized, they arguably play a greater role in state-specific experiments or trials for agronomy or range management. Instead, market outlook, risk management, and farm management economists could and do work across state lines. If the delivery method is limited to in-person presentation, then sharing is limited. If industry specialization and effective educator skills are paramount, then sharing makes more sense. The more widespread use of online delivery techniques such as webinars, web-portals, and online tools should enable cross-state sharing and collaborations within Extension.

Funding and Training Undergraduate and Graduate Students for Extension Positions

Many of our best applied economists do not have an agricultural background. However, with sufficient training and personal motivation, they can be successful Extension economists. Graduate programs in agricultural and applied economics are very good at training students to do research and, to a lesser extent, teach in traditional classrooms. Many universities are not, however, effective at training people for Extension careers. As such, many of the most successful Extension economists have relied on their agricultural backgrounds and understanding of farmers' needs to jump-start their outreach programs. This strategy may not work if we recruit people without agricultural backgrounds into Extension positions.

Extension used to have a steady pool of people entering and moving up the system. Many people with agricultural background first engage with Extension via 4-H programs and then become county agents. Others obtained master's degrees in agriculture-related areas and continued on as area specialists. However, many key agricultural states have recently seen significant reorganization of the Extension system involving a reduction or even elimination of area specialists. This creates unique and urgent challenges for us to replenish and expand the pool for future Extension economists.

Recruitment, training, and mentoring of the future Extension workforce needs to start early, at the undergraduate level. Often many of the best and brightest undergraduates in land grant universities and agricultural colleges are attracted to the private sector without considering the rewarding lifestyle of Extension or even academics. Administrators, economics departments, and Extension faculty need to work more closely and early on to identify students of all walks of life who feel a calling for public service and steer them toward Extension. One way is to engage first-year freshman students to consider academia or work within the land grant universities as Extension professionals as career options to get at least some on a graduate school track.

How do we best prepare undergraduate and graduate students to be Extension economists? What are the key skills that are needed in the profession? We begin by recognizing that Extension programs are essentially teaching programs in a different setting. We teach nontraditional students and usually do not have the luxury of the repeated contact with students that we would over the course of a semester-long class. As such, highly effective communication skills are needed for both oral presentations and written products posted online. Personal communication is also needed since many Extension programs are based on strong networks of producers, county Extension staff, and others in the sector. Finally, potential Extension economists need to understand their audiences and be willing to ask questions of them as much as they are expected to have answers to producers' questions.

One possible way to train students in these skills is start an Extension working group of graduate students. A working group may consist of a monthly seminar with guest speakers from industry who can communicate to students the needs of external audiences. The seminars could also consist of Extension faculty in the economics departments sharing their philosophy of Extension and tips for communicating information to Extension audiences. Finally, the seminar format could allow students to work on materials to support an Extension program (i.e., bulletins, presentation slides, tools, webinars) and present these materials during the seminar for practice. Events like this could also potentially give exposure to interested international graduate students to understand and appreciate Extension as future career opportunities.

This is not the only way to train students, but it would give them a better understanding of what preparing for Extension meetings and generating online content requires. Finally, students could shadow Extension faculty to meetings across the state and, when ready, give their own presentations to an external audience.

These ideas for training require the engagement of Extension faculty and a willingness on their part to invest in the future of Extension economists. This willingness is likely there as many of our best Extension economists are nearing the end of their careers and would like to see their work continued. In another form of engagement, the AAEA Extension Section could actively collaborate with the Graduate Student and Undergraduate Student sections to bring more faculty and graduate students to judge and participate in graduate student competitions.

We have research and teaching assistantships, but an Extension assistantship is unheard of in our field. This could be changed with the realignment of priorities for external funding. Grants continue to be our best source of external funds, and many grants today have a diversified output requirement. That is, there is often both a research and outreach component to the deliverables required for the grant. Can this trend toward Extension and outreach deliverables be leveraged to fund activities by students to learn how to bring applied research full circle to the audience(s) most interested in their work? It seems that, if properly motivated, our faculty could create plans of work for students on grants that would include producing Extension materials in the form of bulletins, decision tools, or presentations.

Targeted funding sources such as National Needs Fellowships and commodity board funding could also provide students with resources to work on outreach activities. Many industry and government employers have noticed the dearth of students trained in both applied research and the delivery of that research to external audiences. As such, proposals to these groups for funding to train students have been and will likely continue to be well-received.

Evaluating Extension Economists within the Economics Profession

Extension connects the research done at land grant universities with the public. In this age of social media, public engagement does not just fall upon the Extension faculty with majority Extension appointments. Rather, many applied economists are actively engaging in public outreach via blog posts, webcasts, tweets, media interviews, and popular press articles. As a result, public outreach and engagement should not be treated as Extension silos but as shared responsibilities increasingly demanded of all applied economists.

At the same time, today's agricultural Extension economists often have research or teaching appointments and, sometimes, teaching and research appointments. University-based Extension faculty and field specialists must interact with research scientists and relay scientific learning and other knowledge to farmers and other users. They also serve as the university's link to the county Extension agents and the USDA's Extension Service (NRC, 1995). This is consistent with USDA's focus on funding integrated projects that explicitly incorporate Extension and research activities as well as interdisciplinary projects focusing on the linkages with related fields such as veterinary medicine, animal science, food science, agronomy, environmental science and engineering, and agricultural engineering. As a result, incentives need to be well established and communicated to encourage Extension economists, especially tenure-track faculty with Extension appointments, to conduct policy-relevant research and pursue interdisciplinary collaboration opportunities.

We argue for more clarity in the expectations for both research and Extension to help Extension faculty and specialists succeed in the current land grant university environment, with its heavier focus on research. Clearer expectations for promotion and tenure of Extension-driven faculty are particularly necessary, both in terms of departmental understanding on how to value and weigh Extension efforts and the balance and trade-off between Extension and research outputs. Extension faculty should also not be treated separately from other applied and theoretical economists. Debunking the erroneous disconnect between research and Extension will also help restore and strengthen the image of Extension faculty for graduate students, non-Extension faculty, and departmental and college leadership.

As discussed previously, another trend has been the reduction in area specialists in the Extension workforce. This also coincides with the changing emphasis in county Extension programming from production agriculture to programs such as 4-H and Master Gardener. It also remains an unanswered challenge regarding how to recruit, train, and improve area specialists so that they have the necessary education, experience, and financial support to grow in the Extension and land grant university system. Often the knowledge and local connections of these area specialists remain untapped and undervalued resources for agricultural economics departments. More effort is needed to ensure that the voices and inputs from the area specialists are heard and incorporated into the long-term planning process of agricultural economics departments, which will help identify key issues with policy and industry relevance.

Conclusion

It is in the best interest of land grant universities to invest in Extension faculty to continue the tradition of educational outreach to constituents. It guarantees the provision of resources from federal and state sources and maintains a connection with people in their state who look to the University for unbiased, research-based information. We offer some strategies on recruiting, training, and evaluating Extension economists to guide agricultural economics departments facing the challenges of hiring people to fill Extension roles. Looking to traditionally underrepresented groups of people, including international students, to serve as Extension economists will bring both opportunities and challenges, but the profession must be up to the task if the Extension portion of the land grant mission is to be fulfilled.

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