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### Special Issue on Extension Education and Teaching: Part 2

Guest Editors: Kynda Curtis, Amy Hagerman, and David Ripplinger

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*Applied Economics Teaching Resources (AETR)* is an online, open access, and peer-reviewed professional publication series published by the Agricultural and Applied Economics Association (AAEA).

The aim is to provide an inclusive outlet for research, teaching and Extension education scholarship encompassing but not limited to research articles, case studies, classroom games, commentaries, experiential learning, and pedagogy. The goal is to support and advance teaching and Extension education within the scholarly areas of agricultural and applied economics, and agribusiness economics and management. AETR seeks to publish articles that are diverse in both scope and authorship. It serves as a platform for addressing and contributing to our understanding of important societal issues, including inequality and discrimination, as well as how shifts in pedagogy (e.g., growing reliance on remote and hybrid learning modalities) may impact accessibility and inclusion.

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4. Teaching and education commentaries (e.g. notes on pedagogy, evaluations of teaching effectiveness, evaluation and review of applied economics textbooks, curriculum development and educational methodology).

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## Extension Education

# Building Up the Next Generation of Extension Specialists

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### Abstract

This paper is a retrospective summary of the varied ways agricultural economics and agribusiness programs have approached recruiting and training interested graduate students for a career in Extension. There is no one-size-fits-all solution for graduate student recruitment and training. Extension systems vary by state, and departments have different levels of Extension involvement. Aptitude in research and teaching, while critical, should be complemented by skills needed to establish successful Extension programs. We propose a customized approach to Extension career training for graduate students that is adaptable to the Extension presence in the department and college and flexible to meet graduation requirements. This flexible approach will enable faculty graduate advisors, graduate coordinators, and department and Extension leaders to better prepare graduate students for future careers in Extension, furthering the land-grant mission.

## 1 Introduction

In 2020, less than 2 percent of the U.S. population lived on farms and ranches (American Farm Bureau 2021). Non-metro populations have been trending downward since the 1990s (USDA ERS 2020). Consequently, fewer students with agricultural backgrounds are entering agricultural economics/agribusiness undergraduate and graduate programs. At the same time, there is growing interest in food and highly diverse agricultural issues from urban stakeholders. This creates opportunities to recruit graduate students from a wide variety of backgrounds (Taylor and Zhang 2019).

The growing disconnect between the majority of the U.S. population and basic knowledge of agriculture and food production makes the land-grant mission and specifically the outreach responsibilities of Extension more critical than ever. Land-grant universities have a responsibility to disseminate research-based information, yet funds for Extension programs in many states have been shrinking for several years. Extension faculty create a bridge between their department, county, or regional Extension educators, policy makers, and other stakeholders. When done well, an Extension faculty member's program can build the external reputation of the department and university, in turn garnering more resources and job opportunities. Further, a strong Extension presence creates additional opportunities for external funding, particularly for agencies like the United States Department of Agriculture National Institute for Food and Agriculture (USDA NIFA) integrated programs.

While the opportunities associated with building new relationships with diverse stakeholders and exploring practical applications for increasing diversity of food and agricultural topics are exciting, it also creates a challenge for graduate training programs. Interested students may not have had much if any, exposure to Extension as youth or undergraduates. Further, fewer faculty advising the graduate students in departments have practical Extension experience. Graduate programs wishing to successfully place graduates into Extension careers need to make a concerted effort to recruit interested students and provide the training and tools required to build a successful Extension program that is tied to a robust research agenda. The diversity of graduate students may create an opportunity to hire a more diverse Extension faculty. Taylor and Zhang (2019) point out that shaping the Extension workforce of the future will likely include hiring individuals who closely resemble consumers of agricultural goods and may

require hiring greater numbers of women, members of historically underrepresented groups, and international economists.

Today's Extension audiences are rapidly changing and evolving as more and more information is readily available from a variety of sources, reliable or not. It is imperative that early-career Extension professionals have the skills to meet audience demands and provide reliable information. Extension roles differentiate themselves from other roles in an agricultural economics department in key ways. Communication skills to disseminate research-based information to stakeholder, rather than academic, audiences need to be developed. Extension roles also require the individual to build relationships with key stakeholders in the state, network with people from many different backgrounds, and stay abreast of the latest topics and trends of interest. An Extension specialist needs to be nimble in responding to urgent information requests and media calls and be able to adjust priorities quickly. Without proper training or direction, graduates with limited Extension knowledge or experience may grow frustrated or overwhelmed when hired into positions that include an Extension split. They may also be advised by faculty without Extension appointments to focus solely on research at the expense of finding ways to develop meaningfully integrated research-Extension programs. While it is reasonable that a great deal will be learned in the early years of a faculty member's career, regardless of position split, a basic understanding of Extension and core tools to successfully navigate an Extension career only increases the likelihood of success and retention of individuals.

This paper will address the varied ways tenured faculty, department heads, and deans can engage graduate students in Extension. Approaches may include field experiences like internships and apprenticeships, classroom experiences like seminar classes and practicums, integration into externally funded projects, certificates, or degrees specifically targeting Extension careers, and mentoring. This article is intended to act as a toolkit, with a variety of options that can be flexibly adapted to the needs of the institution.

## **2 Benefits of Graduate Student Engagement in Extension**

It is not uncommon for graduate students in agricultural economics to have very little understanding of Extension when they enter graduate school. Many of them may come from countries or regions that did not have an Extension system, others may have simply not been involved with Extension during their lives, and many more will have received previous degrees from non-land-grant institutions where Extension faculty were not present. Extension engagement becomes important as the students can get a window into an Extension faculty member's role in the land-grant system. They are likely familiar with the scholarship of teaching, as they have been students for a significant share of their lives. Graduate programs are typically research-oriented, so students also receive considerable exposure to the scholarship of research. However, they are likely to be less familiar with developing educational programs for stakeholders, writing for audiences that are not trained economists, working with colleagues in other disciplines, and interacting with government agents, commodity groups, media members, and so on.

For departments, Extension engagement creates a broader pool of skills that can be applied to many different positions, including those in government or industry. Such well-rounded students reflect well on the program and are situated well for success in the future. Students gain an improved understanding of how to develop applied research applications based on practical problems and may find deep satisfaction in the service-oriented nature of Extension for their career. Regardless of whether a student pursues an Extension career, some level of engagement in Extension activities during graduate school enriches their educational experience.



### 3 Approaches for Graduate Student Engagement in Extension

Approaches for graduate student engagement range from individual relationships to classroom activities, from an engagement that likely requires no additional support from the department or university to approved graduate degrees. For this paper, these approaches are organized into three broad categories: university or departmental initiatives, hands-on training, and one-on-one mentoring. All approaches have pros and cons, and the feasibility of implementation will depend on the individual department.

#### 3.1 University or Departmental Initiatives

Some efforts to engage graduate students in Extension are broadly implemented at the department or college level. This includes departmental seminars and classroom activities or even formal degree programs. The first two initiatives are generally limited in nature, providing general information to all graduate students. These engagement areas are particularly beneficial for those who may want to know more about Extension, but may not necessarily be targeting Extension careers. They can also be a useful recruiting tool for those who may not have considered an Extension career before. Students may develop an interest in engaging more deeply in experiences alongside an Extension mentor. In contrast, a formal degree program or certificate provides a deep focus on Extension skill development through classroom experiences but is rare in agricultural economics programs.

##### 3.1.1 Seminars to Engage Graduate Students in Extension

Departmental seminars are relatively common across agricultural economics departments as a way for faculty, staff, and graduate students to share their work with colleagues and get feedback. Seminars typically offer some flexibility in terms of what can be presented or discussed, which can allow an opportunity for graduate students to become engaged with Extension by attending and participating in the seminars. Through a series of seminars, graduate students can be exposed to Extension faculty, see applied research that includes an Extension component, develop an appreciation for the scholarship of teaching economic concepts to lay audiences, and can potentially present Extension programs they have developed as part of their graduate work. However, if one goal of a seminar series is to expose graduate students to Extension, seminar planners must be deliberate in their planning to achieve this.

In departments where seminars are held regularly, graduate students are often frequent participants. Seminar attendance is typically an expectation for graduate students, and the majority of them are very interested in learning more about the work of the faculty and staff in the department. For this reason, graduate students are largely a “captive audience,” which provides an opportunity to use a seminar series as a vital element of their graduate education. For that reason, it seems prudent to incorporate Extension as part of those seminars if exposing graduate students to Extension and preparing graduate students for Extension faculty positions is a goal of the graduate program.

A basic seminar on the Extension element of a land-grant institution may be the first exposure to Extension for many graduate students. A basic introductory seminar can be pretty high level and can be delivered by an individual or a team of Extension faculty, but it simply needs to convey that Extension is the outreach arm of the institution. Graduate students likely want to see their work have application in meaningful ways for real businesses and households. Planting this seed early will likely pay dividends as they move through their programs. While a high-level overview of Extension is necessary, seminars can also provide an opportunity for a deeper dive into an individual Extension faculty member’s program. A seminar of this type has the potential to expose the broad scope of work that Extension faculty are engaged in within their department.

Additionally, seminars offer the opportunity for graduate students to be exposed to faculty whose primary job is to take what is learned through research and explain it in a way that can be understood by individuals from a wide range of backgrounds. Agricultural economics research tends to reward methodological rigor, often at the expense of practical application. However, Extension faculty must focus

on implications and applicability as they work with clientele. Elements of this can be incorporated in almost any seminar by spending some time discussing practical findings and potential Extension applications. However, this likely occurs most efficiently when research and Extension colleagues collaborate on work, as they both bring strengths to the table. It is also important that graduate students see the type of programs that are delivered directly in Extension settings. There is certainly nothing wrong with using seminars for this very purpose, but the same could also be accomplished by mentoring and/or field experiences, which are also discussed as part of this paper.

A clear advantage of utilizing seminars as an Extension engagement method is that it can be a relatively low-cost strategy to implement as part of a graduate program. Most land-grant institutions that would potentially be preparing graduate students for Extension careers have faculty that can present seminars on their Extension programs or deliver the same type of program that they would deliver in the field. In addition to being a relatively low-cost approach, utilizing Extension team members within the department also increases the likelihood of Extension faculty being involved with these graduate students throughout their programs. These same faculty also have the potential to serve on graduate committees, work with students to incorporate Extension elements into their theses and dissertations, and provide valuable input into the delivery and presentation of research findings to maximize their impact outside of academia.

While there are many reasons to have departmental Extension faculty very involved in seminars, there are also reasons to involve faculty from other institutions. First, as Extension faculties become smaller over time, faculty are increasingly relying on expertise from other institutions to serve the clientele. Graduate students need to understand this dynamic and know that there is a network of professionals doing similar work that can be a professional resource for them when they move into faculty positions. Secondly, Extension is defined and implemented very differently across states and institutions. Graduate students who are primarily exposed to Extension in the state of their educational institutions may be surprised when entering the job market and realizing how different Extension expectations may be in other states. By providing graduate students with the base knowledge of Extension programming and differing expectations across universities, students are likely to be more competitive in the job market, and the likelihood of success in their accepted Extension roles increases.

### **3.1.2 Graduate Student Extension Engagement in the Classroom**

The structure of land-grant colleges, and their respective Extension or cooperative Extension program, varies widely across the United States. The complex and diverse nature of Extension makes summarizing and characterizing the graduate student Extension experience difficult. In general, graduate students most often encounter Extension indirectly through the classroom and other outreach opportunities, such as a conferences or workshops. Occasionally, an Extension economist has a split appointment, which includes a formal teaching role. In that way, faculty may be more inclined to bring Extension concepts into the classroom. But more often than not, graduate students do not directly learn of Extension in an agricultural economics classroom setting.

While programs such as Agricultural Education and Agricultural Leadership often incorporate Extension education formally into their curriculum, many agricultural economics programs do not have a formal course, an issue discussed more fully in the next section. Incorporating Extension education and information in the graduate student classroom setting is a cost-effective and “low hanging fruit” approach to expose students to Extension during their studies. Faculty can present a brief introduction of Extension or can utilize Extension faculty to provide a guest lecture to introduce basic concepts and share how they integrate their research and Extension program.

Skills needed for a career in Extension may however be built into many common and required economics courses. Policy communication and written communication skills are often common requirements for graduate-level courses. Class projects and public speaking, while not explicitly or singularly for careers in Extension, are classroom experiences that can prepare a graduate student for

Extension. Additionally, many graduate courses require students to complete a research project and paper.

To better prepare students for Extension, course requirements could be expanded to include a fact sheet or public communication piece on research findings. Programs could also simply encourage (or require) students to take an Extension education course often offered by the Agricultural Education Department or the Education College. The challenge, however, with this approach is that it may neglect to incorporate methods and tools that are distinctly used by agricultural economists.

### 3.1.3 Graduate Student Extension Certificates and Degree Programs

Degree programs focusing on Extension education are often part of the Agricultural Education and Communication Departments. These programs often include coursework focused on pedagogy, program evaluation, marketing educational programming, and the scholarship of teaching and learning with adult students. Agricultural Education programs across the United States offer graduate degrees with a focus in Extension Education like those of Iowa State University<sup>1</sup> and Ohio State University.<sup>2</sup> Some schools offer specific master's degrees in Extension education like those of Maryland,<sup>3</sup> North Carolina State University<sup>4</sup> (NC State), and Colorado State University<sup>5</sup> (CSU).

Certificates in Extension education can also be earned at various universities throughout the United States. CSU offers a certificate in Extension Education; the certificate can be earned online and requires 13 credit hours. The certificate program allows students to explore the ages and stages of learning, and gain specific skills in content delivery methods, including one-on-one meetings, the classroom, online, seminars, and conferences. NC State's certificate program requires participants to complete 15 credits, or five of the following classes: Program Planning in Agricultural and Extension Education, Adult Education in Agriculture, Leadership and Management of Volunteers in Agricultural and Extension Education, Organizational Behavior and Administrative Leadership in Agricultural and Human Science, Evaluation in Agricultural and Extension Education, International Agricultural Development, and Practicum in Agricultural and Extension Education.

Earning a certificate in Extension education is not the goal of this discussion, but what is notably missing in agricultural economics graduate programs is any formal incorporation of such classes into programs. Given the importance of teaching and communication in Extension, as well as teaching, educational courses in Extension could provide students opportunities to prepare for a career in Extension.

## 3.2 Hands-On Extension Training for Graduate Students

Students who are interested in developing the skills necessary to become Extension faculty or staff may choose to explore practical training and experiences, including internships as undergraduate or graduate students, practicums or field training, or apprenticeships through Extension associate or postdoctoral programs that are externally funded.

### 3.2.1 Internships

There is significant evidence pointing to the benefits of experiential learning in supporting improved learning outcomes for students (e.g., Burch et al. 2019). Accordingly, several land-grant universities

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<sup>1</sup> <https://www.ageds.iastate.edu/graduate/agricultural-extension-education-specialization>

<sup>2</sup> <https://acel.osu.edu/graduate>

<sup>3</sup> <https://psla.umd.edu/master-extension-education>

<sup>4</sup> <http://catalog.ncsu.edu/graduate/agriculture-life-sciences/agricultural-extension-education/#degreestext>

<sup>5</sup> <https://www.online.colostate.edu/certificates/teaching-extension/>



across the United States have Extension internship programs, in which undergraduate or graduate students are paired with mentors in Extension to complete an engaged project.

As one example, Oklahoma State University (OSU) students across disciplines are placed in county Extension offices for the summer and experience a wide variety of activities from farm visits to 4-H camps. In addition, students can design and implement their own Extension programs in that county. Other programs focus more on the link between county and state offices. For example, CSU started its Extension Internship Program in 2018, following a request from Extension leadership to (a) find opportunities to facilitate enhanced connections between campus and field, as well as students and Extension, (b) ensure that applied research conducted by CSU faculty better met the needs of Colorado stakeholders and that Extension conveyed research opportunities to campus, and (c) find opportunities to train graduate students to become the next generation of Extension employees. Interns, who can come from any college/discipline at CSU, glean an understanding of the complexities of working across state, county, and university constructs in addition to specific internship goals. An important dimension of the program is that it is overseen by a committee made up of campus-based faculty, Extension specialists, and Extension agents. One benefit of this approach is that students are forced to communicate across campus and the field, identifying opportunities to bridge research with Extension programming. Often the student has a preexisting relationship with a faculty member in their discipline but lacks connection to the communities that understand the complexity and importance of the issue. Working with the faculty member, graduate students also grasp how research results can be most effectively disseminated to appropriate audiences.

With the interest of CSU's Office of the Vice President for Research in the program, the entire CSU faculty received the call for faculty/staff Extension internship proposals. This direct messaging from a senior university official expanded information about the program to faculty less involved in and aware of Extension who then were able to potentially forward to graduate students. Now faculty and staff with and without official Extension appointments can help to advertise the internship opportunity to a wider breadth of students. Perhaps as a result, in 2020, only 17 percent of the interns reported that they were extremely familiar or very familiar with Extension before their internship. Many students (41 percent) reported that the internship opportunity was their first introduction to Extension.

Many graduate students have reported using information from their CSU Extension internship in master's theses and dissertations. Further, almost all past interns report in postevaluation surveys that they are likely to consider a career or recommend a career in Extension to a friend. With programs such as this, universities may have opportunities to attract a more diverse audience to careers in Extension.

### 3.2.2 Practicums and Field Experiences

In the 1980s, both Cooper (1980) and White (1982) argued that doctoral graduate students had little opportunity to acquire effective teaching skills given that many programs in the realm of agricultural economics focus on the understanding and application of the subject matter. Since this discussion, teaching practicums have become an integral part of agricultural economics graduate programs. Forty years later, the same argument can now be given about the lack of opportunities for experience and skills desired by the Extension component of land-grant universities. One way that graduate students with an interest in entering the Extension field can build their skills and knowledge is through practicums and field experiences. More common are internships and practicums in agricultural economics programs for undergraduates, while fewer universities offer formal Extension practicums for graduate students entering into Extension faculty positions from agricultural economics programs.

A practicum would be considered a graduate-level course that is designed to provide students with opportunities for practical Extension applications of their concurrently studied field of agricultural economics. The primary task during a student's practicum would be observation and documentation. A practicum in Extension can be designed for both students knowledgeable in the area as well as those who are new to the concept. A practicum developed with this audience in mind can provide students the

opportunity to learn about the elements of base Extension programming and the effective skills needed to implement a successful Extension program.

With experienced Extension specialists serving as instructors for this practicum, graduate students have opportunities to start with a broad overview of the field and as the practicum progresses through the semester, dig deeper into specific matters directly associated with Extension. Subject matter for a practicum can include but is not limited to, developing programs for stakeholders, writing for audiences not trained in economics, interdisciplinary work, working and communicating with media, and program marketing and evaluation. Implementation of such a method would require the commitment of Extension faculty in the department willing to teach and mentor enrolled graduate students. Although the ultimate goal of an Extension practicum is to provide students with a base knowledge of Extension and the opportunity to observe seasoned Extension specialists in their roles, an end goal of such a practicum would also be preparing graduate students for Extension faculty positions by honing Extension skills through field experiences.

Field experiences, or hands-on training, allow students interested in an Extension career to receive firsthand experience of working in an Extension specialist role. Similar to faculty who oversee teaching practicums where a graduate student serves as the primary lecturer, Extension faculty would assist graduate students and provide opportunities for them to present in front of stakeholder audiences. By providing field experience, such as presenting a market outlook, students can learn how to design Extension presentations, gather market data from various sources, and then how to disseminate that information to stakeholders. Extension faculty would assist students in the preparation of presentations as well as answer questions or concerns students may have about presenting to Extension audiences versus academic audiences. By providing graduate students opportunities to gain field experience, not only are departments helping prepare students for careers but also assisting those who may be on the fence about career paths to determine if this is the proper direction.

Field experience allows graduate students to participate in the work of an Extension specialist in a limited way under supervision. This experience can be included in the practicum or after completion of the course to allow students to gain firsthand experience of working in an Extension specialist role. Integrating field experiences into a practicum or continuing through a student's graduate career can help students not only develop their research skills but also explain the same research to audiences with various backgrounds. The goal of such opportunities is to assist graduate students in producing applicable research, which is typically desired in the land-grant mission, and understandably disseminating their work to stakeholders. By utilizing field experiences that can be associated with a graduate student's current dissertation work, they can build their strengths in both research and Extension simultaneously. Another benefit of creating field experiences as part of a practicum is the ability to receive not only experience but also credit for their dissertation.

The goal of practicums and field experiences is to allow students to observe Extension and to gain valuable experience in Extension applications. Although practicums would have to stay broad in some aspects given that Extension is defined and implemented very differently across states, the basic skills will be applicable for all Extension programs and when gaining field experiences. By integrating field experiences into practicums and developing well-rounded scholars, graduate students with this experience will be more competitive in the job market and more likely to see success in their beginning Extension careers.

### **3.2.3 Apprenticeships and Externally Funded Projects**

An apprenticeship is a common requirement in many trade-based fields, consisting of full-time employment doing hands-on work under the supervision of a "master" in that craft. In the context of this paper, apprenticeships take the ideas of practicums and field experiences one step further for a more extended or in-depth experience. Although rarely referred to formally as an apprenticeship, there are a few ways in which apprenticeships are incorporated into agricultural economics programs and state

Extension systems. This section will mainly focus on Extension associates and postdoctoral Extension positions. In both cases, positions may be funded by external money or on a nonpermanent basis and would likely have a focused set of priorities. This targeted position scope helps the “apprentice” focus tightly on one program, and can help the individual gain critical skills under the tutelage of an experienced supervisor. The benefit of an apprenticeship approach to Extension education is that graduate students have the opportunity to work under the supervision of one or more state specialists while contributing toward building or continuing an Extension program, conducting evaluation, and even being involved in applying for external funding or funding agency reporting. These intensive roles can combine various aspects of the previously described areas of engagement.

Graduate students can be hired as “Extension associates” or “research associates” supporting Extension programs to gain practical experience that could be applied to a future Extension specialist position. There is a great deal of diversity of Extension associate roles across the country, ranging from graduate students working full-time while completing an advanced degree to seasoned professionals in nontenure track positions that are solely responsible for critical state programs. However, the focus here is on the potential to use Extension associate positions for training. Similarly, after a Doctoral degree is completed, a student can be hired into a temporary postdoctoral position. Like many, postdoctoral positions are designed to enhance skills for research and encourage publication, a postdoctoral role with an Extension function builds credentials and skills as well as a body of programs and products for future Extension faculty positions.

The development of Extension associate and postdoctoral positions can be challenging and often require both external funding and support from the broader college and university level.

Graduate students participating in apprenticeship positions may also have opportunities to gain skills by participating in externally funded projects. Many USDA NIFA grants have opportunities for “integrated” applications, including research and Extension components. These integrated projects represent a significant opportunity to train graduate students to serve as the next generation of research Extension faculty.

First, most integrated projects include an Advisory team, which is usually made up of relevant governmental, nongovernmental, and agricultural producer partners. Graduate students funded on these projects can be put in charge of managing the Advisory teams. In this way, students get a richer understanding of why researchers are answering particular questions, what are the data available to address them, and how stakeholders intend to use the research results.

As an example, as part of an ongoing USDA NIFA funded project, a CSU graduate student overseeing an Advisory team on a “farm-to-school” project has built strong relationships with partners in state Departments of Agriculture, Education, and nonprofit organizations. In managing the Advisory team, the graduate student has learned to understand the importance of the research question—including why it is relevant, timely, and important to different stakeholders including policy makers. They have also been able to leverage the committee to procure novel data sets, and then understand nuances of the data that only practitioners would understand. The stakeholder engagement has also supported an enhanced understanding of context, which in turn leads to the incorporation of explanatory variables that might otherwise have been omitted. Finally, the graduate student has gained a richer understanding of how the stakeholders intend to use the results, including how the data need to be presented for incorporation into outreach materials and programs.

A benefit of student involvement in integrated projects is that outputs from integrated products include peer-reviewed research articles along with alternative mechanisms for results dissemination and programming. This can include deliverables such as incorporation into existing programs, creation of web-based materials, which can include infographics and fact sheets, and presentations to diverse stakeholders. Presenting results to different audiences forces students to be able to frame and communicate the relevance of their work in adaptable ways—great training for research Extension faculty.

### 3.3 One-on-One Relationships Through Mentoring of Graduate Students

Perhaps one of the most accessible and powerful means by which a graduate student prepares for an Extension career is to mentor under an Extension faculty member. A mentoring program can be integrated into every one of the engagement activities previously described, or it can also be as simple as a series of conversations with an Extension faculty member on what Extension is and how it serves the land-grant mission. Mentoring is, at its core, the process of advising or training another person. Mentoring is less financially demanding than some of the other engagement types described, but to be successful, mentoring requires a time commitment by both the mentor and mentee. The mentor doesn't need to be the student's graduate advisor, although a faculty member may serve both roles. However, it is important that a graduate advisor and graduate student develop rapport through active listening and frequent engagement. The goals of the mentee should be clear at the onset as well as the commitment of both.

Extension mentoring relationships often are allowed to develop organically, at the behest of the graduate student, rather than being actively nurtured by faculty or department leadership. A challenge agricultural economics departments face in the organic development of those relationships is that Extension faculty tend to have fewer contact points with graduate students since they teach fewer graduate courses than those with teaching/research splits. These mentoring relationships can be encouraged through activities like classroom engagement of Extension faculty for guest lectures, dedicated seminars that include Extension topics, and active engagement of Extension faculty in helping graduate students create Extension publication applications of relevant, applied research (all activities which are mentioned above as Extension education opportunities).

Extension faculty can enhance students' education through practical and "ride-along" experiences that create opportunities for deep conversations going down the road as well as practical experience with the stakeholders and audiences Extension serves. At the end of the day, graduate students may be recruited and retained in Extension roles through the networking and positive experiences associated with dedicated mentors.

## 4 Challenges to Graduate Student Engagement in Extension

Each of the methods described above requires time and monetary resources on the part of the university and department for implementation, to varying degrees. Administratively, Extension has faced a trend of declining audiences in the agriculture space that agricultural and natural resources economists most often engage with. This is associated with declines in the number of individuals engaged in agriculture, which is less than 1 percent of the population (Census 2010) as compared to more than a quarter of the population a century ago. Deans and department heads are securing resources and support from university and state leaders who may not have personal value for Extension or may not understand the value of training students in Extension skills.

The development of any of the engagement activities requires administrators at all levels of the university to actively understand the value of Extension and the support that it can build for their units. This can begin by emphasizing the critical importance of developing excellent Extension professionals as a fulfillment of the land-grant mission and the difficulty of hiring qualified faculty to fill Extension roles. The engagement activities listed in this article provide benefits to students and faculty and incentivize student participation by offering experiences, publications, assistantships, and in some cases, class credit for their effort. It also creates a feedback loop whereby the land-grant university system as a whole is strengthened by training students before they become faculty with joint appointments.

New faculty holding joint Extension and research/teaching appointments, but with no training in Extension prior to taking a position, may struggle to establish successful programs in their state. The faculty member with limited to no Extension training must (1) learn through trial and error creating a highly stressful situation and potentially spending less time on teaching and research or (2) face pressure



to spend time and money on activities that are more favorably viewed by senior faculty on tenure and promotion committees—research and publications. Teaching faculty face similar challenges as they develop new classes, yet fewer resources are available to support Extension skills development, than teaching skills development, in new faculty. This can leave those faculty with joint appointments with incentives to expend greater time, effort, and resources training students in research or teaching without incorporating Extension elements. Investing in Extension workforce development benefits the university as a whole when those students become the next generation of faculty.

Incentivizing faculty time and effort in graduate student engagement can be both tangible and intangible. Tangibly, providing fellowships and scholarships for graduate students eases the burden on faculty and highlights the value of Extension training for incoming graduate students. Seeking additional funds within the university systems is difficult under tightening higher education budgets. External funding agencies are encouraging more integrated projects that combine research with Extension or teaching. However, funding Extension graduate student activities through competitive grants does not always solve the problem of improving visibility in the university and among the graduate students.

Intangibly, Extension faculty engagement with graduate students should be held in similar regard as research. Mentoring graduate student research is viewed positively in tenure and promotion reviews, as well as the publication of journal articles with students. Mentoring graduate students in Extension programming and the publication of Extension materials should be similarly rewarded in that process. These activities should be clearly spelled out in Evidences of Scholarly Activity, and other documents that are intended to describe valuable outputs for promotion and tenure reviews. Colleges could also provide awards for excellence in Extension, like those provided by professional associations.

## 5 Conclusion

The number of Extension positions across the United States may not be steadily increasing, but the audiences demanding Extension programs are growing and evolving daily. Extension still has a vital role in departments today, sharing research information with diverse audiences and bringing research application ideas and timely problems back to the department. The next generation of Extension specialists will reflect the changing population as departments recruit graduate students with diverse backgrounds. Yet, challenges exist to graduate student training in Extension. Namely, funding and administration support for those activities. This paper provides options to engage and recruit students from both traditional agriculture and nontraditional backgrounds to address the demand for Extension faculty. Departments can utilize a variety of tools to train interested students to become successful Extension professionals. There is no singular way to implement formal Extension education into a graduate program, but by bringing the long awaited conversation of needed Extension education in agricultural economics programs to the table, programs may be able to develop and define programs best suited for their departments.

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**Extension Education**

# The Role of Mentoring in Increasing New Extension Faculty Success Rates

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**Abstract**

Mentoring is a key element in the success and retention of Extension faculty, but one that has not often been explored in the literature and in practice. This paper uses a semi-structured interview process to obtain feedback from early career Extension faculty about their experiences with mentoring, how mentoring could be improved to make them more successful, and specific challenges for which mentoring would be especially helpful early in their careers. While a great deal of variation existed among participants concerning formal mentoring programs within their departments, almost all indicated they used and valued mentors as part of their professional development. Departmental mentoring programs seemed to be largely focused on helping faculty members navigate the promotion and tenure process. Interviews revealed several areas where mentoring would be especially valuable to new Extension faculty as they developed their Extension programs. These areas included evaluating Extension programs, obtaining grants and program funding, building stakeholder networks, balancing appointments, feeling valued, incorporating ongoing personal development, and improving time management. Almost all interview participants indicated a willingness to serve as mentors for new faculty as they progress in their careers.

## 1 Introduction

As a wave of Extension economists across the United States retire (Broder, White, and Taylor 1991), land-grant universities face the challenge of filling vital Extension positions. Although applicant pools are typically large for these heavily sought-after positions, identifying and hiring applicants with a background and interest in Extension can be challenging. Further, recruiting and retaining individuals capable of such demanding roles has been a long-standing concern (Sorcinelli 1994; Place and Bailey 2001; Taylor and Zhang 2019).

Today's Extension personnel have complex roles with an ever-evolving clientele base, often requiring at least a basic knowledge of multiple disciplines. They are expected to stay relevant and timely (Place and Jacob 2001) and communicate their knowledge effectively across various media to broad audiences. Furthermore, Extension faculty in the role of state or area specialists are increasingly asked to take on research, teaching, and administrative roles at their institutions. Such position splits require creativity and dedicated time, which can hamper the effort truly allocated to Extension activities. Similarly, departments must develop and review Extension positions that will attract individuals who will be qualified to hold such diverse and complicated positions.

With the ever-changing environment in academia overall, it is becoming more difficult for newly hired individuals to receive invested support and guidance during the early stages of their careers (Carmel and Paul 2015). Given these challenges, the profession must recruit and continue to support qualified, engaged individuals working in Extension as they build their careers and as Extension continues to evolve and change at local, state, regional, and national levels.

The goal of mentoring is to aid and inspire graduate students and early career professionals as they enter new roles and establish their careers. As such, mentoring can be described as a relationship for growth (Rolfe 2006). Descriptors of mentors range from taskmaster, coach, confidant, teacher, counselor, and ultimately, friend (Perry 1996). During the start of a new job, new hires must first unpack and understand the administrative structure at their new institutions, as well as the expectations and responsibilities in their newly appointed positions. In a “sink-or-swim” pre-tenure setting, this time can be stressful and may lead to frustration or less than favorable job performance. Mentoring provides an opportunity to take some, but likely not all, of the frustration out of that transition. However, for mentoring to be a success, a commitment is required on the part of both mentors and mentees, along with an understanding of what the mentee is truly looking for in the mentoring relationship.

Previous work has suggested that mentees achieve greater job satisfaction when they can spend more time with their mentors (Perry 1996). By utilizing a formal mentor program, mentees have an opportunity to identify resources available in their state and at their university, understand the foundational aspects of Extension and the land-grant mission, and gain knowledge from one or more experienced and successful Extension professionals (Saunders and Reese, 2011). Such a program increases the probability of an easier transition into an Extension career and accelerates the productivity of the new hire on their way to tenure. In a 2017 study by Schroeter and Anders, 18 percent of respondents listed mentors as the top factor in successfully attaining tenure. In the same study, 49 percent listed colleagues as the top factor, implying that informal mentoring may also be a contributor to achieving tenure.

Targeted mentoring programs and professional development for new Extension hires can also improve the new hire’s likelihood of success, as well as the department’s ability to retain faculty and receive a return on their investment. Safrit and Owen (2010) discovered that by providing new faculty with the basic tools and expectations of their roles, universities are more likely to see confidence and success in their new hires. The mentors also benefit from more structured mentoring and advising as it allows them to review and reflect on their performance and skill sets.

Although not the focus of this paper, it is also likely that developing mentor programs during graduate education can provide the foundation for any Extension position and allow graduate students to develop skills they can use in various Extension settings. One way departments can prepare individuals for Extension careers is by incorporating more field-based Extension training into graduate programs. With such experience and training, the transition between graduate school and a tenure-track position that includes Extension may become smoother for the recent graduate. As Barge and Shockley-Zalabak (2008) discuss, there is a vast difference between studying what one should be doing and successfully carrying out and implementing those responsibilities. Similar to teaching or research assistantships, support for Extension assistantships may bridge the gap in experience for newly hired Extension faculty.

Although the benefits for mentors, mentees, and universities appear to be mutual and extensive, what does a formal mentoring program look like for an agricultural economics<sup>1</sup> department and affiliated Extension faculty? Most university-level mentoring programs have focused on teaching faculty, but few have delved specifically into the needs of Extension faculty. The purpose of this paper is to explore the experiences of early-career Extension faculty using semi-structured interviews to capture perceptions and experiences related to mentoring. There is no “one-size-fits-all” Extension mentoring program, but by developing mentoring programs for early-career professionals, tenured faculty have an opportunity to pass on knowledge and experience that enables young professionals to thrive in their predecessors’ roles.

This study is intended to serve as a conversation starter in individual state Extension programs

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<sup>1</sup> Throughout this paper, “agricultural economics” will be used in reference to departments composed of agricultural and applied economics faculty in colleges of agriculture and/or natural resources at land-grant universities. We recognize the diversity of departments across the country that are reflected in departmental names but chose “agricultural economics” for ease of reference.

and individual academic departments regarding the use of mentoring or other targeted training programs to enhance the recruitment and retention of new Extension faculty. The findings of this work will serve as a resource for agricultural economics departments and Extension directors as they consider developing or modifying Extension faculty mentoring programs. The authors also hope that tenured Extension faculty will be motivated to work with early-career Extension faculty to improve professional development and retention. Mentoring programs offer Extension faculty and departments the opportunity to experience significant short- and long-term benefits across faculty members.

## 2 Study Methodology

To understand and evaluate the influence that mentoring may have on developing Extension competencies for early-career faculty in agricultural economics departments, the authors developed the following research framework. First, the study population was defined as early career, tenure-track faculty with Extension appointments, who had less than 10 years of professional experience, post terminal degree, in an agricultural economics department. Second, it was determined that a small sample of respondents subject to a directed line of questioning would be most appropriate for gaining deeper insight into the presence and effectiveness of mentoring programs for Extension faculty. To capture this sample and to ensure representation from different geographic regions and Extension program types, purposive sampling (Hibberts, Burke Johnson, and Hudson 2012) was used to develop a list of 20 early career Extension faculty from land-grant universities across the United States. Potential respondents were then recruited using personal communication via email or telephone.

Third, the authors developed an interview questionnaire with five sections. Each section contained primary questions to be posed to each respondent, followed by secondary prompts where the interviewer could expand on the topic where needed. A semi-structured interview process with a combination of closed- and open-ended questions was selected to allow the interviewer to probe into topics revealed during the interview (Adams 2015). The sections were designed to gain an understanding of the respondent's appointment, academic department, field responsibilities, and professional support received from within and outside the university. The specific sections included: (1) respondent's job characteristics, including Extension responsibilities; (2) description of the Extension program in the respondent's state and its relationship to the respondent's academic department, as well as any mentoring programs for Extension faculty; (3) description of the respondent's job satisfaction, challenges, and the role of mentoring in supporting the respondent's Extension appointment; (4) evaluation of how the respondent's skills in key Extension roles had changed from first starting in their position, to-date; and (5) considerations about future professional development and the potential role of mentoring. The study framework was subject to and approved by the Oklahoma State University Internal Review Board with the appropriate disclosures and consent in place.

Before beginning each remotely administered interview using the questionnaire, the interviewer obtained consent to conduct the interview, as well as consent to record it via Zoom. The recorded interviews were captured for the interviewer's reference purposes only and were not published. Each interviewer also collected notes while administering the questionnaire.

## 3 Analysis

The results of these interviews were analyzed using descriptive statistics for those variables with numeric values (demographic information and changes in respondents' job skills over time). Open-ended questions were categorized and themed based on content analysis (Patton 2015; Leavey 2017). This method allowed the authors to delineate recurring themes across all interviews, based on descriptively coded notes that were then linked to respondent or institutional characteristics.

The respondent's length of service in their current role, number of years in Extension, and percentage of their position split across Extension, research, teaching, and service/administration were

collected as continuous variables (see Table 1). Information on having Extension as a career goal, the existence of a formal mentoring program at the respondent’s institution, and perspectives on seeking out future mentors or becoming a mentor were designed and analyzed as categorical variables. Assessment of participant proficiency over time was based on Likert-scale variables for six specific program areas, with a rating for their proficiency when hired and their proficiency at the time of the survey, to ascertain how their skill levels may have changed.

Last, themes were derived from the open-ended questions by grouping and coding common responses to questions about the strengths and weaknesses of their current position and the role that mentoring did play, or could have played, in building successes and addressing challenges. Several subthemes were derived from other variables, including the uniqueness of the respondent’s role and description of their university’s mentoring program. Individual comments made by respondents and recorded at the end of the interview reinforced the importance of these subthemes.

**Table 1. Descriptive Statistics for Interview Participants**

	Mean	Maximum	Minimum
Number of Years in Extension	4.36	10.0	1.5
Number of Years in Current Position	2.96	5.0	1.5
Extension Appointment (DOE)	73.4%	100%	35%
Research Appointment (DOE)	18.75%	50%	0%
Teaching Appointment (DOE)	9.8%	30%	0%
Service Appointment (DOE)	1.5%	10%	0%

A total of 14 early career Extension professionals participated in the semi-structured interviews in December 2021. To keep participants’ identities undisclosed, the institutions at which they were employed were not recorded. However, an effort was made to reach a broad and diverse group of Extension faculty from across the United States. On average, participants had been in their current roles for just under 3 years but had been in previous Extension positions such that the average time in Extension was 4.4 years. Interestingly, 36 percent of participants indicated that an Extension career was not their goal from the start. One participant suggested that Extension should be part of any faculty position regardless of the appointment.

Concerning appointments, the average distribution of effort (DOE) for Extension was 73 percent. It was clear from the interviews that Extension appointments can differ greatly across institutions. While 79 percent of participants were in what could be considered majority Extension appointments, few were exclusively Extension such that 79 percent also held split appointments beyond Extension. The average research, teaching, and service DOE was 19 percent, 10 percent, and 1.5 percent, respectively. While there were participants with 100 percent Extension DOEs, the minimum Extension DOE in the study group was 35 percent. Descriptive statistics for the study group can be seen in Table 1.

## 4 Results

Overall, participants responded openly to the questionnaire and the parts of their roles that were enjoyable as well as the challenges they encountered. Most expressed satisfaction in making a difference in the lives of their stakeholders and clients. They enjoyed the networks developed and the trust established with stakeholders and colleagues. However, challenges were also present in their roles. Five major challenges were identified by the study group: evaluating Extension programs; obtaining grants and funding; building stakeholder networks; balancing academic appointments and feeling valued; and improving time management and incorporating ongoing professional development. Some of the above themes surfaced in the open-ended questions and were reinforced by comparative proficiency ranking



questions. Participants were asked to rank their proficiency in key areas on the first day of their Extension position, and those results were compared to their assessment of proficiency on the day of the interview. The six proficiency skill areas—research and scholarship, program development and delivery, program marketing, program funding, program evaluation, and developing Extension materials—were ranked on a scale of 1 to 5, with 1 being “knew little about it” and 5 being “very proficient.” The two greatest increases in proficiency among early career professionals were in program evaluation and grants and funding, which will be discussed in detail first.

### 4.1 Evaluation of Extension Programs

An area identified as a clear challenge for Extension professionals was the evaluation of Extension programs. As can be seen in Table 2, when asked to evaluate their proficiency in this area, participants rated their proficiency as a 1.5 on the 5-point Likert scale when they began their careers. Of the areas participants were asked to evaluate, it was noteworthy that evaluation was the area that participants ranked lowest initially. When asked to evaluate their proficiency at present, the average rating was 3.4. This 129 percent increase was the largest gain among the proficiencies evaluated; however, along with program marketing, this was the lowest-rated category based on *current* proficiency. Further, 14 percent of participants specifically referenced program evaluation when asked about additional training areas that would be useful as their careers advanced. These results suggest that this is an area where mentoring has the potential to be of benefit to new Extension professionals but may also be of benefit to mid-career Extension professionals.

**Table 2. Participant Proficiency in Key Areas, when Hired and Currently** (5-point Likert Scale, with 5 being the highest)

Skills/Competency	When Hired	Currently
Research and Scholarship	2.79	3.96
Extension Program Development and Delivery	2.29	4.00
Extension Program Marketing	1.93	3.43
Extension Program Evaluation	1.50	3.43
Extension Program Funding	2.14	4.29
Developing Educational Materials	2.43	3.89

Program evaluation is a way to communicate the quality and effectiveness of Extension programs, but it is complicated by the array of audiences, colleagues, stakeholders, and funding sources that are engaged in programs (Braverman and Engle 2009). Mentoring is one avenue to provide case-by-case advice on program evaluation design and implementation. Thus, it was insightful to look at the formal mentoring programs discussed in the interviews and how they operated. While 64 percent of participants said their institution had a formal mentoring program, none indicated that there was a formal evaluation component to the mentoring program. This is not to say that formal evaluation is the only way to provide solid feedback and guidance to early-career professionals, but this may speak to a general challenge being encountered by participants. Structured evaluation may be a challenge faced at multiple points along the Extension system—at the macro-level through the crucial input given to early-career professionals and at more of a micro-level as one attempts to evaluate individual Extension programs.

In addition to respondents indicating that structured mentoring programs were largely informal, they also suggested that they primarily use their mentors to understand and gauge their progress toward promotion and tenure. Certainly, this is an important role for a mentoring committee, but it is also important to note that more than one respondent stated that “there is often a disconnect between what is perceived as necessary to become tenured and what is most needed by Extension clientele.” This speaks

to the need for mentors who can provide constructive feedback for tenure and promotion, but also develop quality Extension programs that benefit the clientele. Part of developing and delivering good Extension programming is having a mechanism by which to evaluate and modify those programs. While this is an extremely challenging task in any regard, it is impossible without a suitable evaluation mechanism. This is related to the second-highest proficiency increase reported by survey respondents—program funding.

## 4.2 Grants and Funding

Across the proficiencies analyzed, the greatest magnitude increase in on-the-job growth reported was in program funding. Participants had a slightly higher initial grasp on this proficiency as compared to program evaluation. At the start of their time as an Extension economist, the average proficiency ranking for program funding was 2.14, although individually, some reported their program funding proficiency was as high as 4. When asked to rate their current program funding proficiency, most reported 4 and 5 with an average of 4.28. This high current rating indicates that young Extension professionals had to actively participate in program funding and become proficient in it quickly. In fact, 30 percent of the participants went on to list specific aspects of grant writing and grant management among the other skills Extension faculty need to have when starting their new roles. A few very clearly outlined expectations their leadership has on pursuing grants to fund their programs or expressed concern about budgets.

Others indicated the value of grants went beyond the direct support of a program. Grants also aided in developing applied research and building relationships across disciplines or with specialists in their area. Regional or multi-institutional grants enhance networking and collaboration. One interviewee said, “I am concerned that we are duplicating a lot of work across universities when we should be leveraging each other, given fewer specialists are being hired in Extension. When we get a call to report on something, we need to get it into the hands of the right people who are working on that topic. Collaboration happens organically when you are aware of similar programs in other universities, being aware of topics that people are working on.”

Further, many listed “how to communicate the value of Extension” as a critical training area or challenge going forward, and “putting a value on Extension work” was listed several times when asked about program evaluation. Extension faculty are often the ones who develop key relationships with stakeholders in the state and have the greatest potential to link applied research with real application—something that funding agencies highly value. Most participants listed their favorite aspects of the job as some variation on developing relationships: having a real impact on clients and stakeholders; communicating with people and listening to their needs; and linking those needs to applied research. Yet, there was a struggle to express or quantify the value of those relationships to departmental or university leadership and funding agencies, which can stand in the way of successful funding. Stakeholder network development, while reported as important and satisfying, was also listed as one of the participants’ major challenges.

## 4.3 Building Stakeholder Networks

When asked about their primary clientele, respondents noted a broad and diverse set of stakeholders. Responses included producers, Extension agents/educators, government organizations, commodity groups, lenders, agribusinesses, and so on. The number of individuals and organizations that an Extension professional can serve is daunting in size. To develop a solid and long-lasting Extension program, it is necessary for the Extension professional to create a diverse and broad network of relationships. When participants were asked about other skills needed to be successful, 29 percent specifically mentioned skills such as relationship-building, networking, and interpersonal interaction. These skills are necessary to develop those crucial stakeholder networks. Without a strong network of stakeholders and the ability to place a value on an Extension program in a state, it becomes much easier

for Extension positions to be eliminated, or converted into other types of positions when someone leaves an institution. By creating a well-rounded Extension program supported by various stakeholders, it is easier to maintain the program beyond the retirement or departure of the program creator.

When participants were asked how they planned to build their professional networks, most responses gravitated toward opportunities within the agricultural economics profession. A couple of respondents mentioned in-state stakeholder or commodity groups, but most responses referenced organizations like the Agricultural and Applied Economics Association (AAEA) and the Southern Agricultural Economics Association (SAEA), or gatherings such as meetings, conferences, and committees. AAEA has an Extension section that can be used for networking; the Western Agricultural Economics Association (WAEA) has a track at the annual meeting specifically for Extension education. Further, these networks can be engaged while those considering Extension careers are still graduate students, either through participation in presentations or participation in competitions.

While these professional networks are extremely valuable, they are unlikely to be fruitful in developing in-state stakeholder networks organically. It would be necessary for the individual to purposely seek advice from Extension professionals in similar positions at other institutions as to how they went about building their networks, as was suggested by one study participant. Given the importance of building these networks, this would seem another logical area for which mentoring could provide valuable guidance.

#### **4.4 Balancing Appointments and Feeling Valued**

While participants felt a great deal of satisfaction in the difference they were making, one of the most daunting challenges was in balancing the many priorities associated with split appointments while feeling valued in their departments and the profession at large. Among participants with a split appointment, the percentage of Extension ranged from 35 percent to 87.5 percent and was complemented by responsibilities in research, teaching, and/or administration/service. The most common split cited included two responsibility areas (43 percent of participants), followed by those having 3 responsibility areas (29 percent of participants). In addition to having a diverse set of responsibilities in their faculty appointments, many reported having diversity inherent to their Extension work. This was reported either in terms of the types of work they did (travel, presentation, applied research, engagement with stakeholders, writing Extension publications, interdisciplinary work with other departments) or the types of stakeholders they supported as agricultural economists as previously mentioned. It is also important to note that, although this paper is directed toward the mentorship of early-career Extension faculty, it can be considered vital that agricultural economics programs are providing all graduate students and new hires with guidance on handling split positions and the demands of their new roles.

Participants often cited the complicated institutional structures within which they worked, as their appointments differed and they faced varying degrees of integration of Extension within their home departments. In addition, respondents also noted that budget cuts and the COVID-19 pandemic had impacted their ability to work successfully in Extension. They cited their Extension roles as being demanding, and formal mentoring through their departments was more frequently targeted at the promotion and tenure (P&T) path rather than helping them meet the demands of developing a career in Extension.

Several respondents noted that being a faculty member with an Extension appointment entailed a different role compared to their departmental counterparts and that this role is often not well-understood within their academic department. As previously noted, participants expressed concern over a disconnect between the work required for tenure and what was most helpful to their Extension clients. Ideally, one would integrate the Extension, research, and teaching elements of their programs to the extent possible. However, this is not always practical due to the nature of Extension demands or the needed turnaround time on Extension programming. Further, the many hours spent responding to

stakeholder requests for information do not seem to hold significant weight in tenure review. Several felt pulled in multiple directions, which seems to be a natural consequence of the respondents' institutional structure and external demands from an array of client groups.

Interesting, the external stressors seem to be a result of that which respondents found most interesting about their work. They reported enjoying teaching, traveling, finding solutions to real-world problems involving their clients, and knowing that their work has resulted in something tangible and impactful. In addition, they reported making gains in the diverse roles they are called upon to fill through their appointments. Returning to the proficiency scale, respondents reported growth of 42 percent or more across all skill areas, with the greatest gains in the two areas previously discussed, program evaluation (an increase of 129 percent), followed by program funding (an increase of 100 percent).

Several respondents mentioned that mentoring through their department's P&T process did help with working toward balance in their appointments, but most frequently that P&T supported them in making sound longer-term career decisions based on the goal of achieving tenure. Informal mentorships, established by the respondents themselves outside of the P&T process, appear to have played a greater role in advising them on developing a career in Extension. In these cases, respondents sought out one or more mentors to support them in the areas *the respondents* identified as most important to their Extension roles. In fact, 14 out of 15 respondents reported having some form of an informal mentoring relationship, either through other faculty at their home institutions or through another university. Five respondents mentioned participating in early career mentoring through AAEA, but not all felt it was designed to support the Extension component of their appointments. This challenge associated with developing leadership skills and seeking Extension-relevant training leads to the final challenging theme for participants: personal development and time management.

#### **4.5 Personal Development and Time Management**

Participants expressed a desire for further personal development in areas such as confidence in their new roles or properly delegating their time. A portion found it difficult to sift through the priorities that deliver the most impact in their programs, not only for their clients and stakeholders but also for their long-term careers. This links back to previous comments on the difficulty of valuing their Extension impact and quantifying the impacts of their work in the tenure process. Many respondents also felt it difficult to know when or how to say no to the continuous requests that may come from producers or commodity groups, or within their respective departments and administration. For new hires, a mentor program with seasoned faculty from the department can be vital to the early career professional's success and avoiding burnout. Mentors can provide advice about how they handle or balance their roles' requirements and requests.

As previously stated, mentoring can be described as a relationship for growth (Rolfe 2006). Although formal mentor programs are utilized across some departments for new hires, the lack of focus on assisting new hires to navigate and build confidence in their new Extension roles resulted in mixed feelings about mentoring for development as an Extension professional. In addition, there was a feeling that graduate programs did not always prepare new faculty for Extension roles. Participants in the survey wished that graduate programs assisted in understanding the basic components of Extension and the differences inherent to working with academic versus Extension audiences. Understanding these differences would benefit those whose aim is to work in Extension, as well as others working alongside Extension faculty in teaching, research, and administration/service roles.

For early-career Extension professionals, providing mentorship that helps new hires understand the expectations and responsibilities in their newly appointed positions can help ease the transition from graduate student to a professional career. Respondents who participated in formal mentor programs felt the program had some benefits but did not specifically support growth for Extension professionals. Some respondents were participants in the early career mentoring through AAEA. Although participants may have felt the program was helpful regarding research, most believed there was a lack of resources or



advice for those with an Extension appointment. Wearing many hats and juggling a significant amount of subject matter or covering large geographic areas were considered struggles and overwhelming for some respondents. A mentorship program that provides guidance and support during these moments may be a critical asset for a new hire, especially for those with split appointments. Helping new Extension faculty learn how to navigate the waters of Extension in their respective states, regardless of their specialty, can lead to new hires being more effective, confident, and long-term employees for the university.

## 5 A New Path Forward for Mentoring Extension Professionals

This study asked early career professionals to highlight mentoring, but the themes that were revealed show a broader set of needs than most formalized mentoring relationships typically address. Most formal mentoring programs were reported to focus on tenure and promotion or internal, departmental issues. The participants did feel that mentors serve a purpose and are important. However, the formal mentor programs they experienced did not necessarily address the unique challenges Extension specialists face as described in this article. Rather, informal mentoring was used to address challenges as they arose for a specific position, in a specific Extension system. With the collection of these results, now may be the time for departments to think outside of the formal mentoring box for Extension.

Extension programs often have a long history, and specialists may be juggling a combination of new and continuing programs. Several survey respondents focused on the possible role of recent retirees in mentoring and passing on valuable institutional knowledge and contacts. Many participants described some aspect of network-building, working with clients, or stakeholder communication in either their challenges or future training needs. By working with predecessors, new Extension hires may have a higher likelihood of developing those necessary networks and contacts to build a successful Extension program. However, it may not always be feasible to integrate retired faculty and specialists in mentoring programs, and program directions change over time and with evolving client needs. Whether interactions are regular or infrequent, a concerted effort to engage multiple generations of faculty may facilitate passing critical background information to new hires.

Another option may be developing networks to shadow individuals that hold similar sorts of positions in other geographic areas. For example, new hires could attend meetings held by colleagues to observe their communication and presentation styles, and how they market and evaluate their programs. While a great deal of advice and information can be shared through phone and email, observation through shadowing Extension colleagues at meetings can be a powerful tool. However, it was recognized that this also requires that universities and departments provide support for such mentoring, both in terms of time and travel funds to do so.

Departments may also need to consider supporting additional, optional training for those who wish to take advantage of it. Specific training desires from respondents included communications and media training, grants and contracts management, leadership training, and program planning and evaluation. Many of these training options may be available through broader university career services and could be recommended as appropriate by leaders and mentors.

Furthermore, Extension mentoring may need to start well before the first day on the job. Few graduate programs have Extension education or Extension skills development as a part of their formal education, and those that do may rely heavily on experiential learning alongside an existing Extension specialist. Many described the frustration of not knowing what they should be doing with their Extension role and how beneficial it would be if graduate programs could help with “the basics” of Extension. Some examples include presenting to an Extension audience versus academic audiences and speaking with the media. Without knowledge of basic Extension programming or skills to handle the requirements of a diverse job, it is easy for new Extension hires to lack confidence. By developing programs for graduate students that target not only understanding Extension but also personal development as a new professional, departments can help students understand their strengths and areas for growth before beginning their careers.



Personal development and growth are ultimately up to the individual; however, graduate programs that provide opportunities for students to learn about Extension and how experienced career Extension economists balance and process information also help early career professionals feel more confident in their roles and prepare them for an Extension career. Graduate student engagement provides students with the basic tools for working in an Extension role and managing the demands of such a role. With this tool set, graduate programs are producing new hires ready and more confident for their new roles, and the probability of retaining them in Extension positions increases. These experiences could be enhanced by providing students with a broader understanding of the differences in Extension across the country. As one participant said, “the bigger problem to me is what happens when the places training Extension economists are only training a certain type of Extension economist, and don’t give students they are training any sort of flexibility in terms of understanding how to develop institutional knowledge in the program they are going to.”

## 6 Conclusion

As a source of reliable and unbiased information, Extension serves a critical role in land-grant universities across the United States. This study interviewed a group of early career Extension specialists on their experiences since becoming a part of the Extension system. The study group clearly expressed the value they see in what they do for their clients and university, even when they weren’t convinced their universities saw the value. Several participants described the need for leadership training and development in the future. They expressed their responsibility to mentor others in their field, indicating a willingness and desire to become future leaders in the land-grant system. Extension is a challenging role to play in any state, balancing many needs and challenges while keeping up with fast-paced changes in local, regional, and national economies. Extension faculty have gained skills that make them a valuable resource for the university and the communities in which they work. Department heads, deans, and Extension directors can encourage a new path forward for mentoring and training incoming Extension faculty, by leveraging those skills to develop strong leaders in our profession.

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**Extension Education**

# Challenges with Developing an Extension Program for Markets Evolving under an Uncertain Framework: Lessons from Program Development for Carbon and Hemp Markets

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## Abstract

Extension programs are the link between producers, applied research, and policy. Additionally, Extension educators are often the initial point of contact for producers when new agricultural markets emerge. Emerging markets provide opportunities and challenges for all producers. However, developing an Extension program to assist producers can be difficult due to limited production information (or process clarity), a lack of infrastructure, uncertain marketing channels, and uncertain policy direction. During the emergence of new commodities or markets, the development of Extension programming is necessary to aid producers and other agricultural stakeholders in clarifying the risks and rewards of entering or participating in the market. A further complication is a bimodal distribution of clientele ranging from those operators new to agriculture to established operators.

The development of carbon and hemp markets in the United States highlights the difficulties in providing producers with timely information when a highly uncertain policy and regulatory environment exists. This paper discusses how to develop an Extension program to address producers' needs for emerging markets effectively. Specifically, we highlight the benefits of collaboration, obtaining grant funding, program development, and identifying research topics. Finally, the program development discussed can be utilized by Extension educators when developing programming for future emerging markets.

## 1 Introduction

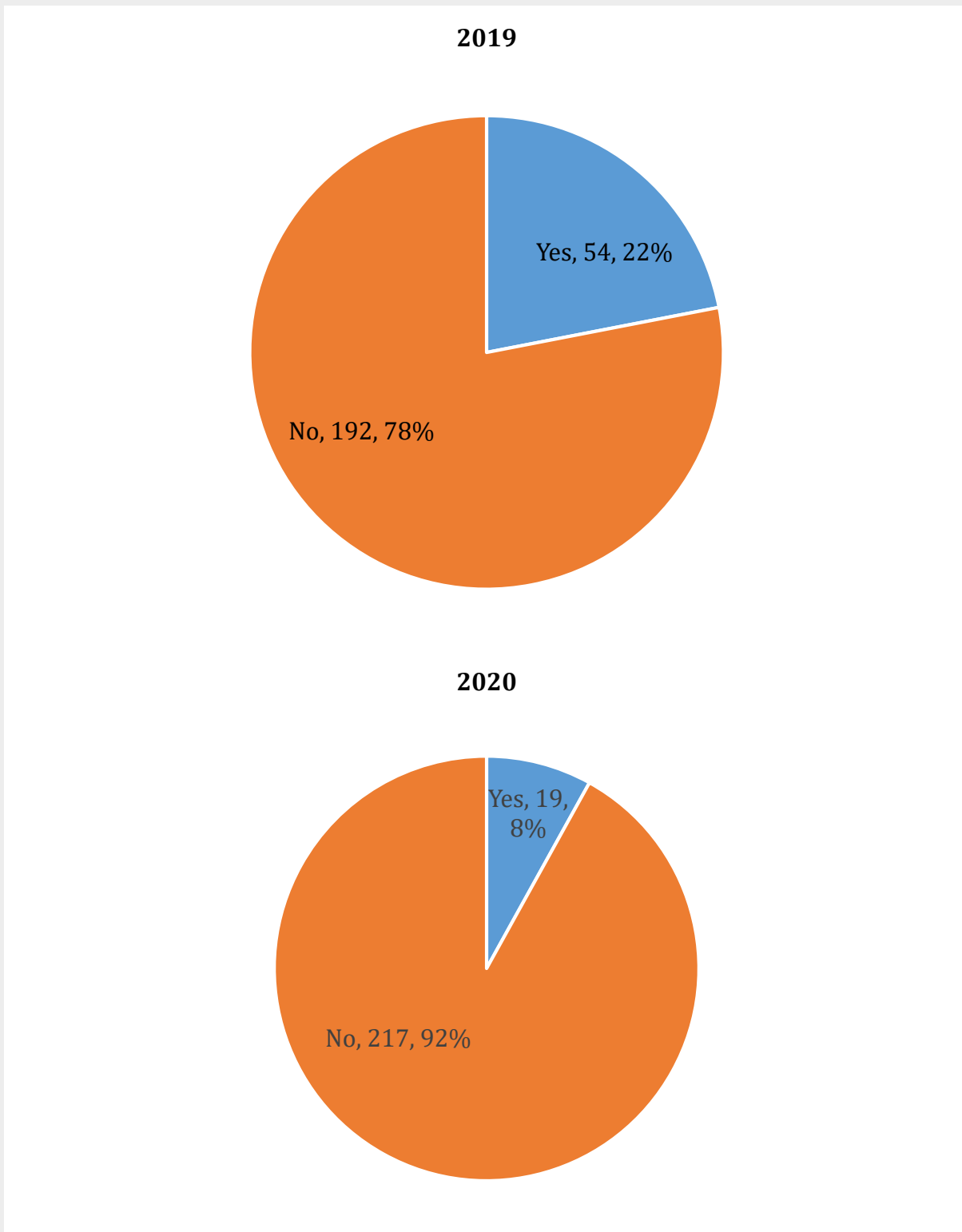
Extension programs provide a link between producers, applied research, and policy. This relationship often puts Extension educators as the first point of contact when new commodities, markets, or policies emerge in agriculture. While challenges occur with maintaining a successful Extension program, developing an Extension program that revolves around markets with unknown policy, undefined supply chains, and potential for above-average returns creates new challenges. In recent years, the hemp market and the emerging voluntary carbon credit market have presented Extension specialists with these challenges. The hemp market is not new. It is a reemerging one that was revitalized and spurred on by government policy via the Agricultural Act of 2014 (2014 Farm Bill) and the promise of extraordinary returns relative to other crops. The voluntary carbon credit market is another reemerging market that has gained interest from private and public sectors. The “new-ness” of these two markets has stimulated fluid conversations with agricultural producers, investors, and other businesses that want to either learn more or estimate if either is a worthy venture. Interest in these markets has led to Extension programming for agricultural producers and nontraditional Extension clientele. Hemp and carbon credit markets highlight the difficulties in providing producers with timely information when a highly uncertain policy and regulatory environment exists. This paper provides a brief overview of the industrial hemp and voluntary carbon credit markets and then discusses how Extension programs were developed to address producers' needs for emerging markets. Specifically, this paper highlights the benefits of

collaboration, obtaining grant funding, program development, identifying research topics, and challenges with program development, implementation, and evaluation.

## 2 Overview of Hemp

Interest in hemp production began with the 2014 Farm Bill and exploded with the 2018 Farm Bill. Original states allowing legal cultivation of industrial hemp included California, Colorado, Kentucky, Maine, Montana, North Dakota, Oregon, Vermont, and West Virginia (Mark and Snell 2019; Mark et al. 2020). Following the initial wave of interest, additional states legalized industrial hemp production from 2015 to 2021. Hemp can be grown for fiber, seed/grain, microgreens, and extract (e.g., Cannabidiol, CBD). However, the diversity of end uses in hemp creates challenges in Extension programming as the four general end use markets of hemp have very different production costs, prices, markets, contract terms, and supply chains.

Interest in industrial hemp production in the United States was initially driven by the extract market (primarily CBD). Primarily for this market, dried hemp buds are used, otherwise known as floral hemp or hemp flower. This material is harvested from the unfertilized female hemp plants. However, from 2018 to 2021, many variations of industrial hemp for CBD extract were attempted, creating a heterogenous product that ranged from handpicked hemp buds to stripped and chopped leaf and floral material. The heterogeneity of the product, combined with overproduction, led to large price ranges and eventually led to a price collapse. The price of floral material dropped from \$4.25 per percent CBD to less than \$0.20 in December 2021. Initial challenges for Extension educators in this market's reemergence in certain regions was providing stakeholders with accurate information on production practices, prices, and contracts. Producers were often drawn into industrial hemp production through elevated price expectations and contracts that promised high returns. Then, a series of reactions occurred when overproduction issues began to surface in 2019, prices fell, and processors defaulted on their contracts (NBC-LEX18 2019; *Schneider 2020; Olek 2021*). Examples include GenCanna Global in Kentucky, Eureka's93 in Montana, and Elemental Processing in Oregon. Contract defaults resulted in lawsuits filed across the country. In addition, in 2019, approximately 60 percent of the hemp crop was grown without a contract, leaving producers without any revenue to cover costs and/or hold this material until the oversupply could be processed. As a result, Extension programming priorities changed to working with producers to manage and avoid some of the downside risks they were now facing. Now that floral hemp price has fallen below the breakeven price for many producers, there has been an uptick in the interest in hemp grain, fiber, and microgreen production and understanding the demand for the extraction industry (Campbell et al. 2021; Kolodinsky and Lacasse 2021). Additionally, industrial hemp producers have become more skeptical of contracts and are acutely aware of counter party risk. A 2020 University of Tennessee survey indicated that in 2019, 22 percent of hemp growers in the state had signed a production contract; in 2020 that number decreased to 8 percent (Figure 1; Cui and Smith 2020). Thus, there has been another change in the Extension programming priorities across the United States. This market and Extension programming priorities will continue to shift as markets, regulations, and investment in the industry continues to evolve.



**Figure 1. Tennessee Industrial Hemp Producers That Indicated They Had Signed a Contract with a Hemp Processor**

Source: Cui and Smith 2020



### 3 Overview of Carbon Markets

The U.S. Environmental Protection Agency (EPA) estimates that the agricultural sector accounts for 10 percent of greenhouse gas emissions (GHG), a 12 percent increase since 1990 (U.S. Environmental Protection Agency 2021). Agriculture contributes direct (management of soils, livestock production, and manure management) and indirect emissions (U.S. Environmental Protection Agency 2021). These emissions can be lowered by implementing production practices, such as optimal fertilizer usage, improved soil management, and livestock feeding adjustments (U.S. Environmental Protection Agency 2021). These examples are practices that a producer can adopt in their production system to reduce GHG emissions. In addition to carbon emission reductions, agriculture can sequester carbon in the soil by managing forestlands, croplands, and grasslands. In the past, the reduction of and sequestration of GHGs was not attractive to producers because there was a limited financial incentive for such practices. This missing financial incentive for GHG emissions reduction and sequestration has led to the development of voluntary carbon credit market, which has market participants from the agricultural and nonagricultural sectors.

There are two variations of carbon markets: compliance (government-regulated limits of GHG emissions) and voluntary (Shockley and Snell 2021). As of December 2021, compliance markets have not been implemented nationally (California has implemented compliance markets at the state level). In 2020 and 2021, producer interest in carbon markets has been driven by voluntary carbon markets. Voluntary markets are based in the private sector and are completed by voluntary transactions between producers/landowners and carbon market participants. Current carbon market transactions occur in the private sector, making public data challenging to obtain. In addition, there is no consistency among companies in payment mechanisms, measurement, validation, and other terms and conditions because contracts are private.

A carbon credit is a transferrable credit certified by a government or an independent body that typically equates to 1 metric ton of GHG emissions reduction or sequestration (Nriagu 2021). Producers generate carbon credits by implementing carbon reducing or carbon sequestering practices. The adoption of GHG reducing practices or sequestration results in GHG emissions reductions compared to current practices (baseline). This change is often referred to as additionality.

Plastina (2021) summarized how data and payments flow through agricultural carbon credit markets. In general, producers sign contracts with a program developer to receive payments from sequestering carbon due to changes to production practices. The program developer designs the project, provides guidance on data, reporting, and modeling procedures, and acts as an intermediary between the producers, verifiers, registries, or emissions reduction purchasers. Verifiers provide technical expertise and “certify” the amount of carbon that has been sequestered or GHG emissions reduced. Registries provide a clearinghouse for carbon transactions to occur, ensuring that each carbon credit can be identified for sale. After carbon credits are verified and registered, carbon credits can be sold (either by the producer/landowner or by the program developer). Purchasers of carbon credits can be companies seeking to obtain carbon neutrality targets or those wanting to offset carbon emissions due to regulatory compliance.

Once the carbon credit is generated, it enters the market where buyers can purchase credits. Since carbon markets are still developing, limited pricing information is available. As a result, a great deal of uncertainty exists for landowners and producers on whether revenue from carbon credits will cover the cost and risk of implementing new management practices and transaction costs required to participate in carbon markets. Additionally, participation in current markets may have ramifications in participation in carbon and other ecosystem markets in the future. Uncertainty in the carbon markets has necessitated the need for Extension programming for producers, landowners, and other participants in this new market.

## 4 Extension Program Development Under Limited Information

Developing a well-rounded Extension program is challenging when timely and readily available information is unavailable to the educator. In both hemp and carbon markets, the unknowns about the supply chain, cost structure, contract terms, and price discovery generate large sources of risk for producers. For example, the amount of carbon sequestered, and practice(s) adopted, will vary from farm to farm, and each practice has different potential returns. Extension programming that helps producers understand the costs and risks of implementing new practices before entering a new market is critical. The challenges in developing budgets, price estimation, and market projections for clientele become difficult for an Extension specialist when price discovery is not transparent or well established. Additionally, Extension programs must be developed for both traditional and nontraditional clientele.

### 4.1 Identifying Target Audiences

Demand for information by stakeholders drives the need for Extension programming to support new industries. Although the information is limited, Extension programs can benefit from new markets due:

1. Greater program participation. For example, hemp meetings in Tennessee and Kentucky in 2018 and 2019 were attracting hundreds of participants. In addition, online webinars are still generating significant interest even with the drastic decreases in production nationwide.
2. Participation by audiences that have not been served by Extension in the past. A survey of a hemp Extension program in Murfreesboro, Tennessee, indicated that over 40 percent of those in attendance had previously never been to an Extension event. There is also some evidence that hemp attracted a more diverse clientele than traditional agriculture programs. A University of Tennessee webinar for hemp producers in 2019 had 154 registered participants—56 percent male, 42 percent female, 2 percent unknown; 69 percent white, 11 percent black, 2 percent Hispanic, 1 percent Asian, 1 percent Native American, 1 percent Pacific Islander, and 15 percent unknown. The 2017 census of agriculture indicated Tennessee producer demographics of 35 percent female, 65 percent male; 97 percent white, and 3 percent other (U.S. Department of Agriculture 2017).

For hemp markets, a wave of enthusiasm created high demand for immediate Extension programming. This created a substantial challenge for state specialists and county agents. Developing programs too quickly and with limited information can be counterproductive, even if demand for the programming is high. One of the most limiting but necessary responses to stakeholder questions is “I don’t know.” Stakeholders want answers to complicated questions, and Extension educators are there to assist in providing the answers. However, new or reemerging markets devoid of price, supply chain, and research-based production information can tempt educators to make statements that may not have robust or any impartial research-based information behind them. As such, Extension educators must be able to use qualifiers when discussing anecdotal claims to convey industry or personnel experiences as academic research. The inability to articulate the difference between research-based information and anecdotal claims can result in confusion and skepticism for those that attend Extension events.

### 4.2 Collecting Available Data

For new or reemerging markets, the availability of research-based unbiased data is challenging to obtain. In both hemp and voluntary carbon markets, existing data regarding hemp production prior to 1945 and carbon markets through European cap and trade systems and past domestic carbon policies provided a starting point. An alternative source of information for Extension educators was related commodities or markets. For example, agronomists discussing hemp for CBD production relied on vegetable and tobacco production information to help guide producers. Evaluating producer contracts for voluntary carbon

markets parallels other contractual arrangements between two parties that can guide the process such as poultry and land lease agreements. Historical information and components of related industries can provide a base to develop a preliminary Extension program.

A valuable tool can be conducting stakeholder surveys or focus groups to determine needs, information gaps, and suitable methods for program delivery, in addition to gathering information regarding current practices by early adopters (Cui and Smith 2020). Due to heightened interest in new or reemerging commodities or markets, this information is usually not robust and comes with a great deal of certainty. Generally, the information collected would not meet the requirements for publication in a peer-reviewed journal; however, information can be used to inform stakeholders and guide discussions.

## 4.3 Identifying Stakeholders, Collaborators, and Resources

### 4.3.1 Identifying Stakeholders

Identifying stakeholders and collaborators to develop and implement Extension programming is essential to success. The challenge is identifying groups that can work toward providing information that can move the industry forward. Early participants in hemp markets can be useful sources for information regarding industry trends and needs for Extension and research. Caution does need to be exerted when partnering with individuals or groups that may have ulterior motives (such as product sales). Additionally, very few groups have shown the ability to remain cohesive with common goals that the group can coalesce around. Validating claims provided by an industry collaborator can be a challenging undertaking for Extension educators due to limited or no access to privately held information. Thus, Extension educators are subject to two challenges, providing affirmation of correct information and repudiation of inaccurate information.

Forging strong partnerships with state, regional, and national universities and governments can facilitate rapid data and information exchange when it becomes available. In hemp, various producer or hemp advocacy groups were formed to provide a unified voice for hemp producers, processors, and other stakeholders in individual states. For example, in Maryland, Extension faculty found working with agricultural groups focused on educating nontraditional producers to enter agriculture to be good partners to assist in getting information out to new growers. At the same time, working with existing programming being done by county governments in Maryland on hemp was a good platform as well. In Tennessee, Extension partnered with the Tennessee Department of Agriculture (TDA) to host over 20 meetings across the state to inform hemp stakeholders. Organizing and conducting the meetings allowed for information to be distributed to stakeholders and helped ensure that information between University of Tennessee Extension and TDA was readily shared, and a uniformed message conveyed. For carbon credit programing, working closely with U.S. Department of Agriculture (USDA) Natural Resources Conservation Service provided the opportunity to present information on economics and contracting alongside production practices and implementation strategies. On-site field days demonstrating production practices, such as cover crops, followed by questions regarding producer considerations when evaluating carbon contracts were well received by producers.

### 4.3.2 Identifying Resources and Collaborators

Initially, obtaining resources to conduct hemp research and Extension programming was challenging. However, this is changing as the industrial hemp industry matures and policy clarity is provided. Inflows of external funding, such as USDA and state government, often lagged demand for programming to conduct Extension programs. Governmental funding often focuses on research questions identified by Extension personnel; however, limited funding was initially available to gather information, conduct meetings, and work with producers one on one. This created challenges as land-grant universities developed programming using limited internal funding sources. For example, interest in industrial hemp

had shifted focus substantially by the time external funding was approved and available to university Extension programs. Research funding in a rapidly evolving new market also has challenges. The research question that was initially thought to be important needed to be overhauled as more information was made available by early adopters.

Collaboration between in-state and adjacent-state universities can be a valuable method to obtain information for producer groups and stakeholders that face a common set of problems. Caution must be exerted to ensure that the information provided applies to the producers or county where the Extension program occurs. Working collaboratively with other institutions allows Extension educators to share the burden of collecting information, analyzing data, and interpreting results. Collaborations also provide a secondary check for accuracy and consistency. For example, University of Tennessee and Kentucky worked collaboratively to provide information and decision aids to producers in Northern Tennessee and Southern Kentucky, regions that have similar production methods and are subject to the same supply chains and markets.

#### **4.4 New Versus Existing Clientele—Balancing Starting Knowledge for Clientele**

As previously mentioned, some value can be gleaned based on research and Extension programming from other commodities. However, delivering programming can be hampered based on a bimodal distribution of producers. Profit potential and blind optimism can attract existing agricultural producers and new potential producers to new or reemerging markets. The challenge in delivering impactful programming is that clientele start from different knowledge levels. For example, a producer with thirty years of agricultural production knowledge does not require clarity on common agricultural practice terms. At the same time, an individual new to agricultural production will need to have basic terms and processes defined before commodity and market-specific information can be disseminated. Many hemp meetings conducted in Tennessee were inundated with clarification questions that established producers found pedantic.

Another crossover of new markets and existing markets is risk. Successful and established producers understand and plan for risk. While most Extension programs have a risk education component, it is difficult to quantify risk exposure to established producers because of the uncertainty of new markets. Additionally, it is also difficult to educate beginning producers on the principle of risk when they don't have a fundamental understanding of agricultural production and market volatility. For example, most established crop producers have an understanding of how crop insurance works and what risks are mitigated. Thus, providing crop insurance Extension programming to experienced producers, can focus on the intricacies of hemp-specific crop insurance issues such as contracting, testing, and so on. A crop insurance program for new agricultural producers must first build a foundational crop insurance knowledge base before hemp-specific crop insurance information can be discussed.

### **5 Extension Program Delivery**

One of the greatest challenges with developing Extension programs to meet the needs of stakeholders in new markets is the timeliness of delivery. In 2018 and 2019, producer and county-level requests for hemp programming were in high demand. However, this demand for programming generally occurred before research-based information was available. This led to Extension programming participants having questions unanswered or a feeling of limited value for the program attended.

#### **5.1 Unexpected Challenges**

Extension events also created challenges with private entities that were looking to capitalize on enthusiasm for the new market. For example, a 2018 University of Tennessee Extension program that was well advertised drew private companies to the location where unvetted product information was placed on program participants windshields and was passed out to producers in the parking lot. This



gave some producers the perception that the products and information passed out by the private company had been approved for distribution by the University of Tennessee, when it had not been authorized.

## 5.2 Delivery Methods and Timeliness

Extension programming for new markets can use numerous delivery methods to disseminate information to clientele. Social media provides county agents and specialists with the ability to advertise events and disseminate short form information to a large number of clients. Web-based meetings can be a viable tool to have participants from a larger geographic area. Pre-recorded videos can disseminate information to be viewed by producers at their leisure and also allows the educator to carefully articulate the information that they want to share, rather than being forced to respond to ad hoc questions from an in-person audience, which may result in spontaneous response that lacks nuance. Even with the use of technology, many producers still desire in-person programming. The two most common reasons, for preference, to in-person programming are interactions with others in the audience, that augments the formal program, thus building connections and a support network, and the capacity to interact with speakers outside of the formal program to have operation-specific questions answered and clarification provided.

## 6 Evaluating Program Results for New Programs

Obtaining program feedback and evaluation allows Extension educators to modify future programming, obtain additional resources, and convey research ideas to colleagues. Standard Likert program evaluations can provide valuable feedback to Extension educators; however, results need to be interpreted cautiously. For new industries, producer evaluations will typically reveal higher than normal increases in knowledge about the program but lower scores on the quality of the information. This is a function of limited available information. Additionally, as mentioned above, new markets attract many individuals that have not previously attended an Extension program. This can skew evaluation results if compared to other more established Extension programs.

As Extension educators, we are often asked to quantify impact. In new markets this can be challenging. With limited baseline information it is very difficult to quantify the financial impact of adoption of the information presented. Also, what is the impact of a potential producer attending a meeting and not proceeding to enter the market? In 2019 and 2020, many producers were thankful that they did not enter hemp production. Part of their decision was based on attending University of Tennessee and University Kentucky Extension programs that highlight the uncertainty in industrial hemp markets and risk management tools available. This poses the question of how should avoidance of a loss be quantified?

## 7 Discussion

Extension educators putting together new programs for markets or issues with limited information can follow a few rules of thumb: (1) be adaptive and flexible with timely information, (2) use multiple means of delivery, (3) collaborate with others to leverage more resources and information, and (4) evaluate results and apply recommendations to future programs.

Adapting programming to meet stakeholder needs as information evolves is essential when dealing with new markets. As such, the timeliness of programming is critical. This will involve initial programming with continuous updates as new information emerges. By effectively utilizing a web-based and in-person combination, programming can be more effective than exclusively utilizing one medium. Additionally, implementing a website or add in (drop down) to an Extension website will allow for information to be readily available for clientele and other Extension specialists. Information can be data, publication, video programming, or other items that could be useful.

Collaborating with other personnel that have different specialties is critical for early and sustained success. Future specialists should not be discouraged to ask for help when markets are emerging. Multidisciplinary collaboration can lead to increased funding, access to datasets, and increased awareness of the collaborators' Extension programs.

The steps laid out in program development also allow for new specialists and veteran specialists to work together. The implicit and explicit benefits of such collaborations can lead to retention of specialists for departments, tenure-track development, and future collaborations on other research topics.

## 8 Implications and Conclusions

Developing programs to address specific concerns or questions is essential for effective Extension programming. As highlighted earlier, emerging markets can create issues where there are more questions than unbiased research-based answers within the land-grant system. This can cause Extension programming to play catch up to the latest needs of the emerging market. Carbon and hemp markets highlight how programming needs can fluctuate based on changes in these emerging markets.

Lack of answers in Extension programming can cause individuals to turn toward other sources for information, especially with new clientele. These new clientele may turn away from Extension programming and seek answers from less reliable sources. Hemp and carbon markets are just two examples of how difficulties can arise. Policy and private interest will continue to drive new markets in the future. Future specialists must maintain the benefits of collaboration, obtaining grant funding, and program development to create and sustain a new program.

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**Extension Education**

# Linking Research and Practice: The Role of Extension on Agritourism Development in the United States

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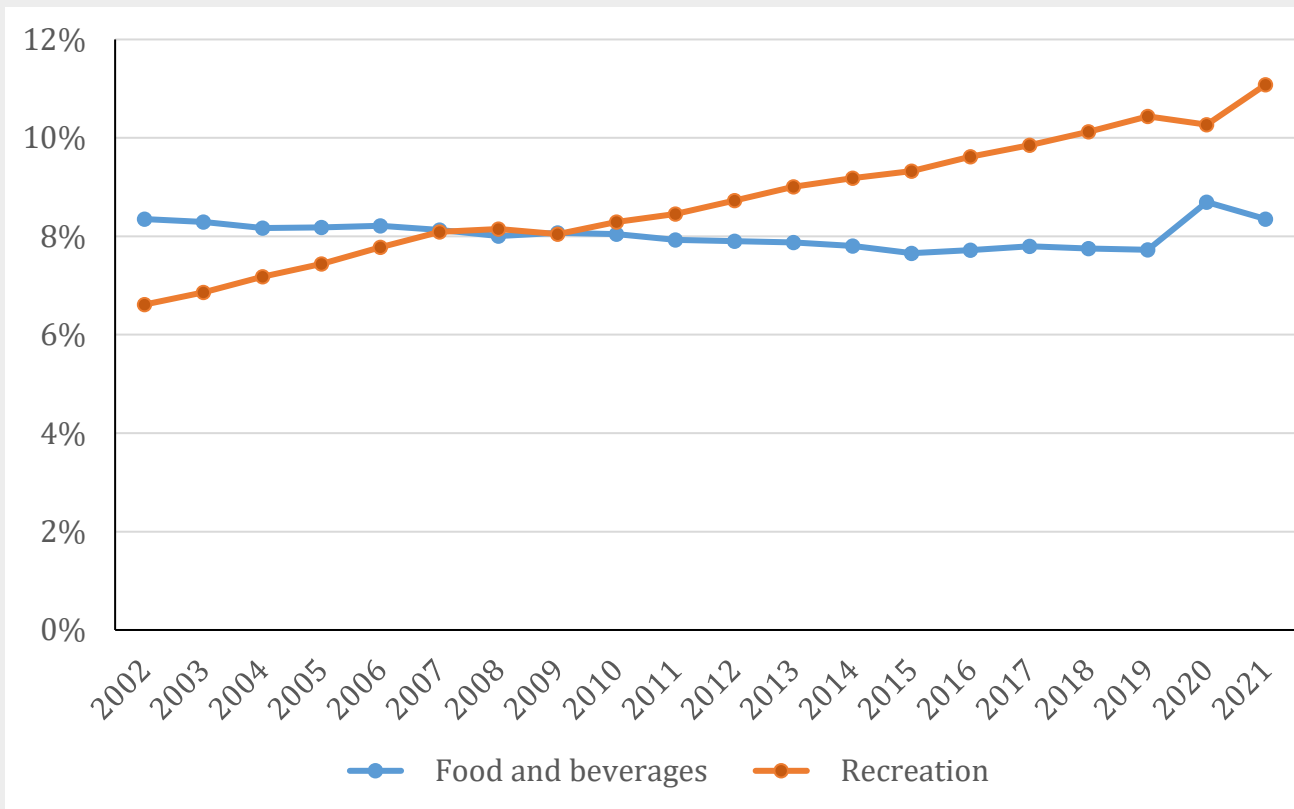
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**Abstract**

Agritourism is a critical farm diversification strategy for farmers to enhance income and profit potential with benefits related to rural community development, increased awareness of sustainability practices, and local heritage preservation. For rural community and economic development professionals, agritourism has become an important strategy to develop local tourism, grow small businesses, and enhance regional economic diversification. We propose that the agritourism ecosystem would arguably benefit from more robust Extension programming and network development. A discussion of two state case studies, Vermont and California, provides an overview of the critical elements necessary to build a statewide agritourism program. The role of Extension in rural development and tourism underscores the opportunity to utilize agritourism as a broader development strategy. Finally, we make recommendations for growing the role of Extension in agritourism. More robust training and education for Extension professionals, stronger connections to state tourism departments, and more robust advocacy with university and state-level decision makers on the value of agritourism investments are all highlighted as crucial next steps.

## 1 Introduction

The term “agriturismo” was coined in Italy in the 1980’s and was adapted for use in the United States and around the globe to address concerns of farm viability and rural community vitality (Lamie et al. 2021). As agricultural producers are faced with volatile commodity sales and increasing input prices, farm owners and managers, especially operators of small- to medium-sized farms, are looking for ways to diversify their income streams. In addition, as the share of consumer income spent on food has been decreasing over time, resulting in less profit potential for producers, consumers’ interest in the experience economy has increased (Pine and Gilmour 2019), as shown in Figure 1. The rising interest in experiential tourism creates potential strategic advantages for agriculture and tourism alike, especially within the multifunctional and post-productivism view of agriculture and the intersecting interest and concern for sustainability.



**Figure 1. Percentage of Household Consumption Expenditures (Chained \$2012)**

Source: BEA (Real Person Consumption Expenditures by Major Type of Product and by Major Fuction)

As a “consumer-driven innovation” (Van Sandt, Low, and Thilmany 2018, p. 592), research has shown that agritourism can be a driver of rural economic growth and leverage the growing outdoor recreation and tourism economy in the United States (Thilmany et al. 2019). Agritourism is a farm diversification strategy oriented toward sustainability and community-based tourism, representing a novel hospitality strategy grounded in sustainable development values (Palmi and Lezzi 2020; Barbieri, Sotomayor, and Gil Arroyo 2019). Abundant evidence points to the mix of economic (e.g., increase in revenues and paid jobs for family) and noneconomic benefits (e.g., heritage preservation of cultural traditions as well as heirloom products, decreasing social isolation) that agritourism brings to farmers and ranchers and their families (Barbieri 2013). Many of these benefits have a ripple effect on surrounding communities, as they stimulate the (re)vitalization of local businesses, help retain rural youth, and contribute to food sovereignty (Schilling, Sullivan, and Komar 2012). Agritourism also has a positive impact on visitors by promoting agricultural literacy as well as health and wellness. Beyond recreational gains (e.g., escapism, experiencing the farm lifestyle, being outdoors), agritourism improves visitors’ attitudes toward and intentions to purchase local foods, ultimately strengthening local food systems (Brune et al. 2021).

In many cases, agritourism is also conducive to protecting wildlife; conserving land, agricultural, and heritage resources; and adopting sustainable practices as a means to increase farm tourism appeal (Barbieri 2022). For diverse reasons, there is an increased interest in rural economic development and activities that can expand upon and complement traditional base industries (such as farming and forestry) and adjacent but complementary innovation and entrepreneurial activities (e.g., green energy, technology solutions). However, despite the benefits of business models rooted in innovation and sustainability and rising consumer interest, agritourism operators still face challenges of farm



profitability, farm sustainability, and farmer livelihood (Hollas et al. 2021). To address these needs, the Cooperative Extension System has developed integrated research and outreach efforts to support producers diversifying into agritourism enterprises. This paper begins with an overview of the ecosystem of agritourism operators in the United States, also highlighting the role and evolution of Extension programming around agritourism. Next, we provide two brief case studies from Vermont and California to illustrate the development and evolution of a statewide agritourism network. Then, we connect agritourism to key Extension efforts around rural development broadly, including supporting local small business clusters. We conclude with the next steps and a call for future agritourism programming efforts and investments.

## 2 The Ecosystem of Agritourism in the United States and the Role of Extension

Before we can address Extension specifically, we describe the landscape of agritourism support in the United States. We then describe the role(s) Extension has played in this development and how well Extension is positioned to provide meaningful support going forward.

### 2.1 Tracking Agritourism Development in the United States

Agritourism – sometimes referred to as agricultural tourism, agrotourism, or farm tourism – does not have a consistent definition throughout the United States, although a frequently cited definition is “farming-related activities carried out on a working farm or other agricultural settings for entertainment or education purposes” (Gil Arroyo, Barbieri, and Rich 2013, p. 45). There is disagreement about the boundaries and characteristics of agritourism, including the setting, types of experiences, and characteristics of visitors. At the core of agritourism are experience and product sales offerings that take place on a working farm or ranch and are deeply connected to agricultural production (Chase et al. 2018). For example, visiting an apple orchard to pick your own apples, touring a sugarhouse to learn how maple syrup is made, or having dinner on a farm using that farm’s products are all considered core agritourism activities. In contrast, peripheral activities, that may take place on a working farm or ranch but may not be deeply connected to agricultural production, are not typically considered agritourism. For example, gatherings on a farm for a family reunion, wedding, or another event that does not use the local farm products and does not include education about agriculture would be considered peripheral. In addition, any activity that does not take place on a working farm or ranch, even if connected to agriculture, would also be considered peripheral (e.g., harvest festivals, farmers markets, and agricultural fairs that do not take place on working farms or ranches).

The United States Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) Census of Agriculture, which is conducted every five years, is, by its own definition, “the only source of uniform, comprehensive, and impartial agriculture data for every county in the nation.”<sup>1</sup> However, the two questions that are meant to capture agritourism and direct sales<sup>2</sup> have limitations. The “agritourism and recreational services” question is subject to interpretation by survey respondents who may not understand the full breadth and scope of agritourism activities and may not consider themselves

<sup>1</sup> See: USDA NASS FAQ: <https://bit.ly/3Q9pz03>.

<sup>2</sup> In the questionnaire for farms and ranches, two questions were included that pertain to agritourism (USDA NASS Census of Agriculture 2017):

(1) “Report the gross dollar amount received before taxes and expenses in 2017 for income from agritourism and recreational services, such as farm tours, hayrides, hunting, fishing, etc.”

(2) “How much was received in 2017 for the food produced and sold directly to consumers: farmers markets, on-farm stores or farm stands, roadside stands or stores, u-pick, CSA (Community Supported Agriculture), online marketplaces, and so on? Include edible agricultural products for human consumption. Exclude nonedible products such as hay, cut flowers, Christmas trees, nursery products, and so on; commodities produced under production contracts; products purchased and resold.”

included as it is described. The NASS “agritourism” question understates the broader concept of agritourism that includes on-farm direct sales and a wide variety of activities on working farms and ranches that are deeply connected to agriculture. For example, overnight farm stay hosts may not consider themselves as “agritourism” by the limited NASS wording and may not include their income in this question (or anywhere on the Census of Agriculture). Direct sales of farm products are expressly excluded from the “agritourism” question. This means that sales from a u-pick operation or the maple syrup that a visitor bought after a free tour of a sugarhouse would not be captured as “agritourism.” The NASS question about direct sales is focused on edible agricultural products for human consumption; however, there are problems using these data to understand the direct sales component of agritourism. For one, it is not possible to distinguish between on-farm and off-farm direct sales. Another problem is its delimitation to “edible agricultural products for human consumption,” which excludes Christmas trees, ornamental plants, and fibers that may be important components of agritourism for some farms and ranches. As an example, visiting a Christmas tree farm and cutting their own tree is a tradition for many families and a primary source of income for Christmas tree farms in several regions of the United States.

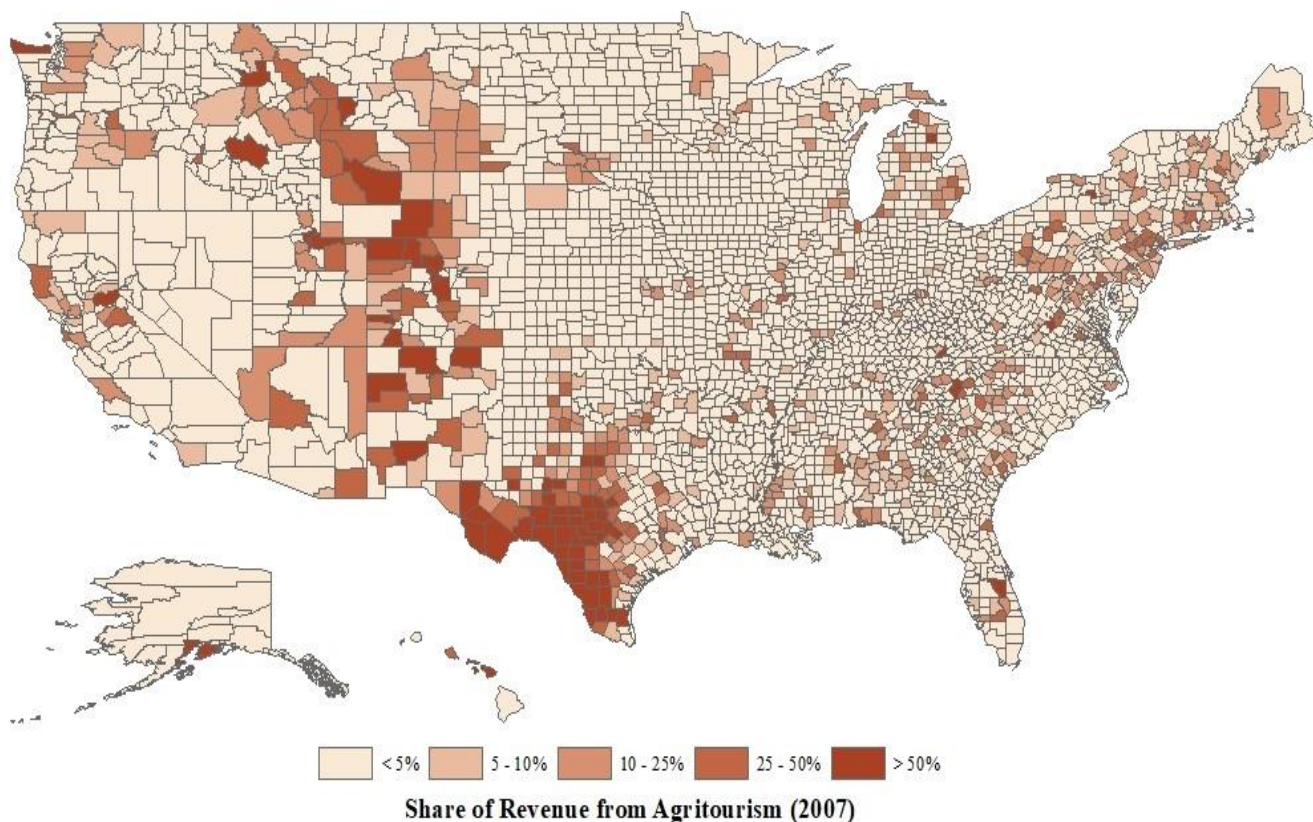
As agritourism grows throughout the United States, a strong case can be made for the collection of detailed data related to the many facets of on-farm experiences and product sales as well as off-farm agricultural experiences and direct sales. Anecdotal evidence suggests that much of the income from “agritourism and recreational services” reported in the USDA NASS Census of Agriculture results from hunting in rural areas in the Southern part of the country including Texas. In contrast, farm tours may be a higher percentage in the Northeast and West Coast (Tew and Barbieri 2012). This level of detail is not currently available from the Census and would be of great interest for research and Extension programming if the USDA NASS were to collect this information regularly.

Nevertheless, the USDA NASS Census of Agriculture currently is the most comprehensive database representing producers throughout the country. According to the 2017 census, a total of 130,056 agricultural producers (6.4 percent) sold US\$ 2.8 billion of agricultural edible goods direct to consumers. Additionally, US\$ 949 million was earned by 28,575 agricultural producers for “agritourism and recreational services.” Combined, agricultural producers earned US\$ 3.8 billion, with 25 percent from agritourism and 75 percent from direct sales. Using the Census of Agriculture data, the spatial distribution of counties with agritourism activity (exclusive of direct sales) across the United States is illustrated in Figures 2 and 3. These figures show the change in the share of agritourism revenue from the 2007 to the 2017 Census. An interesting trend is that this activity is increasingly moving toward the coasts. However, the reasons for the difference in growth patterns across counties and regions is largely unknown. Van Sandt et al. (2018), when examining the determinants for agritourism hot spots, actually found that these are more likely to be located in areas with less population. The share of agritourism income appears to be decreasing in Texas, where anecdotally more hunting is offered than the “typical” agritourism activities, and it is increasing in the Northeast. While certain locational factors that benefit agritourism cluster development have been identified in previous NIFA-funded research (Van Sandt, Low, and Thilmany, 2018), more research is needed to determine the impact of sociodemographic factors, the regulatory and policy environment, and the extent of cooperation needed between local businesses and local government (i.e., farm operators and food businesses) as well as the role and impact of Extension.

Given the motivation, funding, and increased scholarship, Extension efforts focused on agritourism activities and impacts are no surprise. Developing agritourism comes with inherent burdens for agricultural producers, and a support system has emerged and evolved over time to enhance the business readiness of emerging entrepreneurial farmers.

## 2.2 Entrepreneurial Ecosystem

Transitioning to a service industry—tourism—requires attaining or strengthening a set of interpersonal skills (e.g., emotional labor), business competencies (e.g., customer service, direct marketing), and



**Figure 2. Share of Agricultural Revenue from Agritourism (2007)**

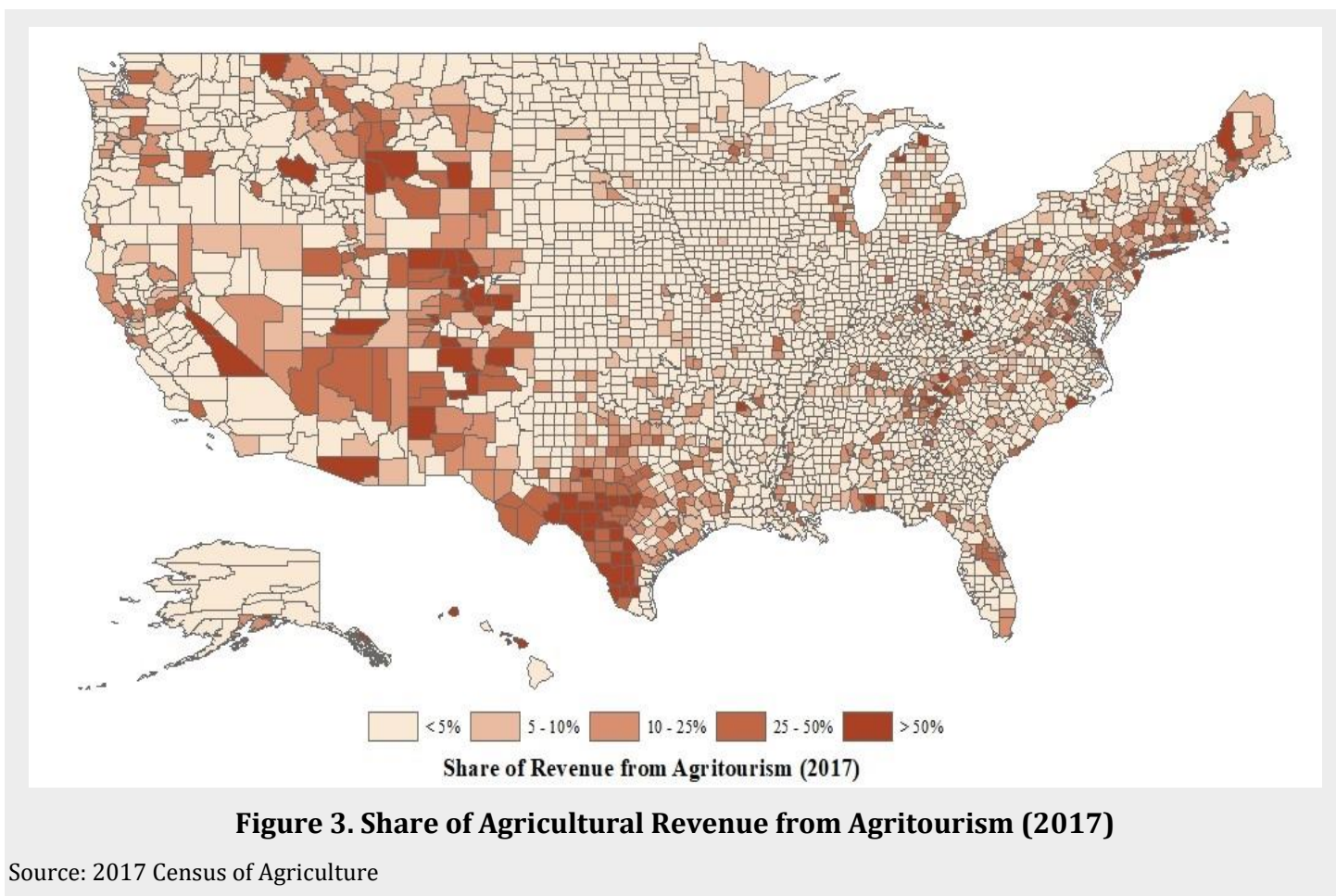
Source: 2007 Census of Agriculture

networks beyond agriculture (e.g., specialty vendors, Destination Management Organizations) that farmers do not frequently possess (Sharpley and Vass 2006). The agritourism support system includes membership associations, tourism bureaus, private and nonprofit initiatives, municipal organizations, conservation authorities, Extension services, and others. However, these support systems are very different across the United States.

Membership associations, such as farmer-to-farmer associations, provide their members with a mix of private incentives that respond to individual needs (e.g., networking opportunities, referrals to suppliers) and public incentives that strengthen a common interest or industry, such as lobbying and setting up industry standards (Bennett 1998). Li and Barbieri (2020) found that agritourism associations provide private and public incentives to their members, which they classified in four groups: education (e.g., business advice specialized in agritourism), economic (e.g., how to increase profits), networking (e.g., events, professional development), and policy and advocacy (e.g., lobbying, public awareness of agritourism). Among these benefits, associations play a key role in building social capital and expanding business networks among agritourism farmers. Specifically, agritourism associations foster strong relationships and cohesive values among their members, which yields high levels of trust, cooperation, and reciprocity among members (Li and Barbieri 2020). Strong social capital and extensive networks are important to facilitate information sharing and resource mobilization among a group of people (Sebastian, Namsu, and Kerk 2009), and Extension specialists can be a catalyst to build producer associations at the state level.<sup>3</sup>

<sup>3</sup> For example, Penn State Extension has been instrumental in developing the Pennsylvania Cider Guild.  
<https://www.ciderculture.com/pennsylvania-cider-guild/>





State tourism departments have been traditionally tasked with marketing and promoting tourism in their respective states. These departments typically promote all tourism initiatives in their respective states, including large and small attractions located in urban and rural areas. In a review of state tourism organization websites, 20 of 50 states directly and thematically promote agritourism, while an additional five state tourism departments indirectly promote agritourism through site searches. In addition to the promotion of rural tourism and agritourism, many state tourism organizations are beginning to shift efforts to utilize marketing funds to assist in not only promotion, but also the development of rural communities through activities like agritourism. These examples include the Utah Office of Tourism and their “Utah Tourism” initiative, the Colorado Tourism Office and their Colorado Rural Academy for Tourism (CRAFT) program, and the South Carolina Office of Tourism and their *Undiscovered South Carolina* grant program (U.S. Travel Association 2018). The Ag and Art Tour is a Clemson University Extension collaborative effort that has grown dramatically over the past few years in South Carolina and illustrates the important intersection with state Extension professionals. In 2021, the Ag and Art Tour had expanded to 11 South Carolina counties over 5 weekends, including self-guided farm tours and local artisans.<sup>4</sup> Efforts such as these allow Extension educators to collaborate with tourism professionals in their state to help shine a spotlight on agritourism businesses and initiatives and fuel rural development. In addition, county-based destination marketing organizations (DMOs) increasingly advertise agritourism operations on their websites and facilitate collaborations and trails between producers, often in collaboration with local business bureaus and conservation authorities.

<sup>4</sup> See SC Ag and Art Tour: <https://bit.ly/3zd0Kdz>.

## 2.3 Evolution of Extension Programming

Given the varied nature of agritourism, including crop and livestock production, tourism asset development, retail hospitality service management, and other activities, there is no doubt that the knowledge base necessary for developing high-quality Extension programs requires an interdisciplinary approach. However, at the same time, it requires Extension specialists to bring these resources together to synthesize and share with their clientele. Extension has the ability to assess technological potential and curate examples and relevant applications that busy farmers may not have the time to do.<sup>5</sup> However, producers in these communities often turn first to their state's Extension service despite the availability of online resources from Extension services across the country. As farmers look for information on diversified agritourism options, providing state and regionally relevant information is especially crucial for understanding the local agricultural production options (e.g., lavender, maple syrup). In addition, the legal constraints and business requirements for these activities (e.g., farm stays, recreational activities) can differ significantly across states, further highlighting an additional role for Extension.

Figure 4 shows currently active agritourism Extension programs in the United States, which provides only a snapshot of current programming.<sup>6</sup> We define an active program by having at least three of the following criteria: recent (or regularly updated) Extension articles that are accessible to agricultural producers, educational materials written specifically for this state, a dedicated contact person, or regularly trained multiple agents/specialists and programming in the past three years (green). The light green states indicate programs that are currently under development. The focus of Extension business personnel in the Midwestern states could be contributing to the slower growth of agritourism in those parts of the United States. In addition, funding opportunities (discussed further in the next section) in the North Central region may demonstrate less focus on agritourism, though this cannot be confirmed without data on submitted proposals.

### 2.3.1 Funding of Agritourism Extension

Since agritourism is a relatively novel research and Extension area, funding at the federal level started about 20 years ago. From 2006 to 2020, USDA's National Institute for Food and Agriculture (NIFA) funded 11 projects with a total value of about \$2.56 million.<sup>7</sup> These projects are mostly integrated projects, meaning that they have a research and Extension component. One of these projects is highlighted in section 3.1. Grants from Extension Risk Management Education Centers (ERME)<sup>8</sup> and Sustainable Agriculture Research and Education (SARE) have been instrumental in helping Extension specialists develop agritourism programming in their states. Since 1997 SARE has funded 18 agritourism projects nationally through its four regions for a total of \$1.1 million. The Southern region had the most projects funded (6), and 38 percent of the total funding, closely followed by the Northeast (five projects, 33 percent of funding)<sup>9</sup>; the Western and North Central regions tailed with four and three projects, respectively, and securing slightly less than 30 percent combined. Since 1997, there were only three years (2008, 2010, and 2016) that the SARE program funded more than one agritourism project; in 11 of these years, there were no agritourism projects funded. The USDA's Risk Management Education Center has funded 27 agritourism-focused projects since 1997, with almost 50 percent of the funds going toward

<sup>5</sup> See for example University of Vermont's Extension "Comparison of Farm Stay Listing Sites": <https://bit.ly/3apzZlh> and Lamie, Barkley and Markley (2011).

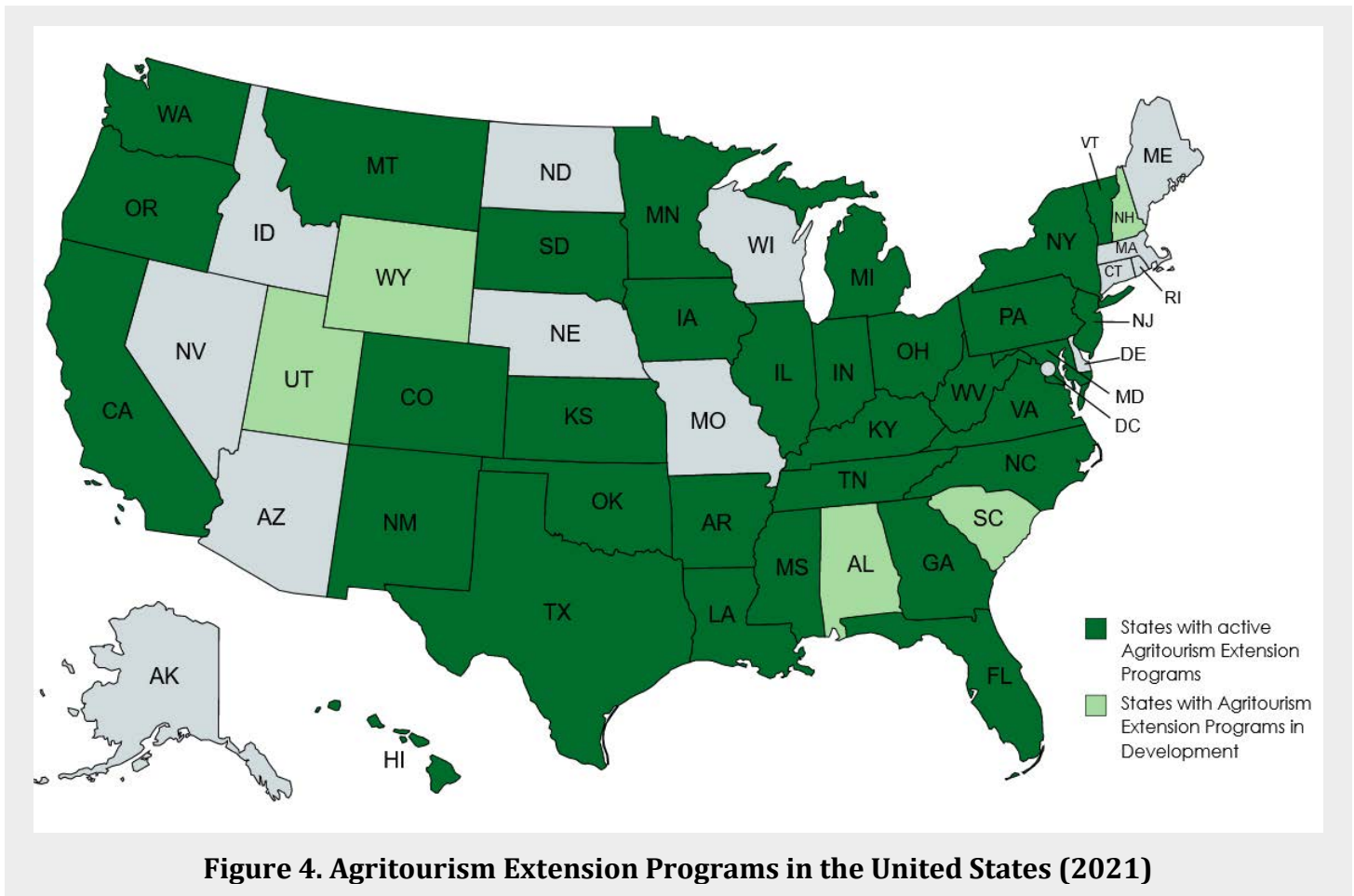
<sup>6</sup> We determined that status using website searches and contacting Extension specialists in the respective states.

<sup>7</sup> Reference database. <https://cris.nifa.usda.gov/cgi-bin/starfinder/>. We searched the database for projects that had the name agritourism in their titles.

<sup>8</sup> ERME was established in 2001, and the centers are funded through the USDA NIFA (<http://www.nerme.org/>).

<sup>9</sup> A multistate project (NJ, VT, DE, and ME) led by Rutgers University has developed educational material that is widely used by Extension services in the Northeast: <https://agritourism.rutgers.edu/training/>; [https://projects.sare.org/sare\\_project/ene11-121/](https://projects.sare.org/sare_project/ene11-121/).





Western projects. Further funding is provided by programs like the State Departments of Agriculture Specialty Crops Block Grants, USDA’s Beginning Farmer and Rancher Development Program, Rural Development Centers, Community and Economic Development, and USDA Rural Business Development Grants.

To better understand the landscape of agritourism Extension programs, the following section discusses two agritourism Extension programs—in Vermont and California—and how these began and have been sustained. While these states on opposite coasts are just two of the many examples of Extension programming supporting agritourism throughout the United States, they both benefit from large urban populations within a day’s drive. As agritourism grows throughout the nation, different factors may contribute to the success of agritourism operations, such as the farm scale, product mix, agritourism offerings, and experience and gender of the operator (Hollas et al. 2021). These differences across states and regions have varied impacts on the relative needs of Extension programming to support agritourism operations (Hollas et al. 2022).

### 2.3.2 Agritourism Extension in Vermont

Beth Kennett of Liberty Hill Farm in Rochester, Vermont, played a leading role in helping agritourism spread throughout Vermont and the United States. Her dairy farm began hosting overnight guests in the 1980s as an income diversification strategy as milk prices plummeted (Chase and Grubinger 2014). A few years after her successful farm stay business was launched, she was contacted by a University of Vermont Extension specialist in community and economic development, who told her that she was on the leading edge of a national movement called agritourism. Their collaboration over the coming years led to the creation of the nonprofit organization Vermont Farms! Association. The organization was established to

provide educational opportunities about agriculture to the public as well as to sustain and further develop the rural working landscape that characterizes Vermont. Key principles for Vermont Farms! Association membership are for farms to be engaged in agriculture and that the farms were insured properly and took safety and regulation seriously. These elements set a standard that led to the development of Vermont's agritourism reputation as an authentic, educational, and safe experience for visitors of all ages (Kennett, personal communication, 2021). The collaboration between the University of Vermont Extension and Vermont Farms! Association continued as the organizations partnered to develop resources, offer training, and provide marketing support for agritourism in Vermont and around the country, as other states became interested in agritourism. Over time, Vermont Extension, Vermont Farms! Association, and other partner organizations developed the Vermont Agritourism Collaborative,<sup>10</sup> which provides resources and training for producers and service providers. Today, the Vermont Agritourism Collaborative works closely with the Vermont Tourism Research Center<sup>11</sup> and the National Extension Tourism Network to integrate agritourism research and Extension outreach. Vermont's experience illustrates the importance of collaboration, along with the value that Extension can play in state agritourism efforts.

### 2.3.3 Agritourism Extension in California

During the 1990s, pressures of urbanization led to San Francisco Bay Area farmers' interest in alternative approaches to maintaining profitable agricultural enterprises. The agricultural area is uniquely positioned geographically as over 4.5 million visitors travel to the Point Reyes National Seashore annually and being situated within one hour's drive of the approximately 7 million people who live in the Bay Area. These factors prompted Ellie Rilla, director and farm advisor of the Marin County University of California (U.C.) Cooperative Extension to conduct research into agritourism programming. Her work included learning about farm tourism practices through visits and interviews with 100 farmers and host agencies in England and East Coast states (Rilla 1999). This cross-fertilization of knowledge and ideas was brought home to Northern California where a local agritourism working group, involving Extension professionals and agritourism operators, formed with assistance from Small Farm Center.

In 2003 a team of statewide farm advisors published an Agriculture Issues Center brief about obstacles in the Agritourism Regulatory process in 10 California counties that inhibited any agriculture operation from diversifying into on-farm public and educational offerings. The work group also assisted in the passage of Assembly Bill 1258, a Farm Stay bill that provided more flexibility with regard to local food codes for agriculture producers, and publication of a comprehensive handbook including best practices that enable local agritourism. Rilla and George published two editions of the book "Agritourism and Nature Tourism in California", which has been used by other extension specialists in the US to establish their agritourism programs (Rilla and George 2005). In 2009, the state working group collaborated with the U.C. Small Farm Program to hire a statewide Agritourism Coordinator. The coordinator brought together the many diverse stakeholders involved in California agritourism (e.g., Cooperative Extension advisors, tourism bureaus, farm bureaus, farmers and ranchers, county staff) to organize multiple regional workshops, professional development trainings, webinars, and regional and statewide convenings of the many diverse stakeholders involved in California agritourism. The current Statewide Agritourism Coordinator manages the U.C. Cooperative Extension Agritourism program and writes the California AgTour Connections e-newsletter. The California experience echoes the Vermont experience and highlights the importance of a bottom-up approach and the advocacy of local stakeholders and farmers interested in agritourism. It also reinforces the importance of broad-based collaboration and the development of robust networks to build a successful state agritourism program.

<sup>10</sup> Vermont Agritourism Collaborative: <https://www.uvm.edu/Extension/vtagritourism>.

<sup>11</sup> Vermont Tourism Research Center: <https://www.uvm.edu/vtrc/agritourism>.

### 3 Connecting Research with Extension

Agritourism's connection with rural development requires engaged scholarship strategies, including co-creation and community-driven research questions. Furthermore, the tourism–agriculture intersectionality of agritourism requires that outreach efforts integrate the farmer's needs (suppliers) with the visitors' expectations (consumers), along with the engagement with diverse stakeholders influencing both industries, such as regional tourism offices, local governments, boards of education, nongovernmental organizations, and insurance providers, to name a few (Barbieri 2022). This section highlights some research projects that have been translated into Extension work.

#### 3.1 Rural Development

The unique relationship between agritourism community-based resources and place-based factors (including physical assets, social networks, and leaders) must be understood to help guide the applied research agenda for rural development. In 2018, a team of researchers from Colorado State University, University of California at Davis, University of Northern Colorado, and the USDA Economic Research service completed a USDA NIFA grant, "Place-Based Innovation: An Integrated Look at Agritourism in the Western United States," with research, Extension, and teaching activities guided by agritourism sector leaders and targeting local decision makers. The regional development focus of this project was key since enhanced agritourism activities would reach a variety of "winners," from individual farm/ranch employment and income increase to the surrounding community economy, and even the broader state tourism office. For example, communities benefit from agritourism visitors' economic impacts through their expenditures on lodging, dining, gas, and other recreational endeavors. However, those travel support sectors should be well developed to enable the farms' ability to fully realize its potential experience for visitors. Therefore, travel and agriculture services and offerings are synergistic and mutually reinforcing. In addition to being dependent on the unique geographical context of the rural community (such as its agricultural, ranching, or tribal heritage), agritourism may complement and provide increased visitation capacity for regions that have become increasingly popular as the traveling public visits state and national parks, and forests and monuments in record numbers. Such questions emerged from community-based discussions and guided the project's focus on the relationship between national parks, byways, and agritourism (Van Sandt et al. 2018). These discussions also framed the Extension technical assistance activities and case studies that helped communities determine the "right fit" strategies of how to leverage that relationship within their home regions.<sup>12</sup>

#### 3.2 Agritourism Cluster Development

Recent studies have underscored the urgency of innovation in creating competitive advantages; this is especially true for sectors where customers are bombarded by a wide variety of product offerings, as in the tourism sector (Paulauskaite et al. 2017; Presenza, Petruzzelli, and Sheehan 2019; Petruzzelli, Natalicchio, and Albino 2020). Given the growing importance of and requests for authenticity and experience-oriented travel opportunities, agritourism's potential as a strategy to use tradition and authenticity as a driver of innovation is important. The strengthening of initiatives for more responsible travel coupled with the "good food movement" have given rise to a new creative class of sustainable entrepreneurs. There are many opportunities to expand and leverage agritourism as it relates to rural and community development, but there are also barriers to accomplishing this. Partnerships and alliances (agritourism clusters) may help overcome many of the inherent disadvantages individual producers face, and also simultaneously overcome the geographical and infrastructure challenges that many rural areas face. Clusters as a form of development and innovation can be approached not only for product development but also to improve sales and marketing activities, capacity building, access to

<sup>12</sup> Project website: <https://agritourism.localfoodeconomics.com/>.

funding mechanisms, and lobbying. Extension specialists in California and West Virginia have encouraged the development of agritourism clusters to enhance the tourism value proposition using authenticity and tradition to generate innovation around sustainability and to enhance value capture (leveraging community-engaged stakeholders). Continuation of these strategies should likely be encouraged in any future Extension programming focused on agritourism development.

### **3.3 Research to Practice—Women in Agritourism and Extension**

Recent research on the role of women in agritourism highlights potential opportunities for Extension’s engagement in this area. The agritourism system recognizes a multilayered decision-making process, in which the entrepreneurial farmer decisions (inner layer) have to be negotiated with the farm family welfare and resources (central layer), which in turn are subject to societal factors (outer layer) that operate as enablers or constraints (Barbieri 2017). In this line of thought, Savage, Barbieri, and Jakes (2022) found that farmer values, farm family attributes, and societal trends—notably the patriarchal structure of agriculture—affect the functional success of women in agritourism in their farming and entrepreneurial roles. The role of women in agriculture in the United States is gaining recent attention in applied economics research (Ball 2019; Fremstadt and Paul 2020; Schmidt, Goetz, and Tian 2021). Although gender roles in agritourism have received research attention since the early 2000s (McGehee, Kim, and Jennings 2007), still more effort is needed—especially to close the gender gap in practice (Savage et al. 2022).

Projects in North Carolina and Pennsylvania (Schmidt et al. 2020) highlight the research-Extension connection under a gender lens. Projects in North Carolina sought to increase the opportunities for the success of women in agritourism (Halim et al. 2020; Savage et al. 2022), given the increase of women farmers statewide. There was also increasing evidence indicating women’s prominent role in agritourism operations and their overall entrepreneurial underperformance (e.g., Bock 2015; McGehee et al. 2007). The project’s Extension outputs were originally conceptualized as a series of technical workshops for women farmers and Extension personnel (train-the-trainer model). However, the results indicated that the lack of farmer-to-farmer and farmer-to-Extension networks and the low recognition of women as farmers were the major factors hindering their success, which challenged the extended belief of technical knowledge as the biggest barrier to success for women farmers. Thus, outreach efforts were adjusted to include more in-person interaction and networking opportunities among women farmers and Extension specialists.

## **4 Conclusion and Agritourism Extension Outlook**

Extension specialists that support agritourism efforts must regularly evaluate their research and educational programs to ensure they are meeting the specific needs of farmers, their families, and the communities they serve. At the same time, Extension specialists must acknowledge the set of opportunities (e.g., supporting tourism resources) and barriers (e.g., reduced labor supply) their community posits. Such a tailored approach can be challenging, considering that opportunities and barriers are dynamic and subject to fluctuating (e.g., policy directions, prices) and localized and/or one-time (e.g., natural disasters, COVID-19 pandemic) changes in the external environment. The fluid and intersectional context that is the agritourism system calls for strong Extension-research connections to address farmers’ needs adequately. A translational research approach is needed, in which investigators respond to on-the-ground needs, and results are disseminated through Extension personnel; and the outcomes, lessons, and revisions are fed back into the systems learning cycle.

Producers and educators alike would benefit from increasingly diverse and multifunctional Extension risk management programs that create a more proactive educational model to help traditional producers turned sustainable agritourism entrepreneurs meet their triple-bottom-line missions. Many Extension professionals suggest that paying careful attention to how employees (and managers) interact



with the customer is crucial for success in all direct-to-consumer types of businesses. Many choose to formalize this by having program participants take part in any number of available personality tests (e.g., Myers-Briggs, Color Code) and spending program time going over these results either individually or grouped with other program participants with the intention of creating the context for them to make wise strategic staffing decisions. More research focused on how such staffing decisions translates into agritourism enterprise success is needed to refine Extension programming in this domain. Emerging issues that researchers and practitioners should pay closer attention to include specific support at the destination level, cluster/alliance level, and enterprise level. Specific issues include profitability, sustainability practices, infrastructure development, designing functional clusters, business, and marketing support (including social media), and regional collaborations among others.

By definition, agritourism straddles the sectors of agriculture and tourism. Therefore, Extension professionals must straddle several areas of expertise, often outside of their scope and capacity. These include hospitality and direct product sales, business development and marketing (including social media), placemaking and rural economic development, Extension activities and research, and building agritourism support networks. Addressing these needs are difficult considering the few agritourism Extension experts and limited institutional resources dedicated to agritourism. In several states, for example, agritourism-related responsibilities may fall solely on one person with other responsibilities and priorities to juggle, or a group of professionals within the Extension system that deal with agritourism-related issues on an ad hoc basis. Agritourism Extension programming too often mirrors agricultural entrepreneurship/value-added/specialty crop direct marketing programming, largely swapping out enterprises, and in addition, it is typically approached in a similar manner as when an agent adds another crop or value-added product to their portfolio. However, the agritourism “product” is more of an experience consisting of intangibles that agribusiness Extension personnel are not typically trained to provide support for or be able to effectively evaluate (for example, pricing, legal issues, land use and zoning issues, and community conflicts).

A few strategies may be employed to alleviate this burden and create a support network for Extension professionals interested or tasked with providing support to agritourism operators. First, specialized and comprehensive training is needed to increase the number and levels of expertise of agritourism Extension specialists. State tourism departments offer annual tourism summits and regional tourism-related workshops for destination marketing professionals in their respective states. These educational conferences and workshops provide opportunities for Extension specialists and educators to increase their tourism-related knowledge, as well as network with other tourism industry professionals, which may lead to further collaboration and related initiatives.

Similarly, a national network of agritourism Extension professionals could provide training, resources, and models for Extension delivery and institutional and ecosystem frameworks. The National Extension Tourism Network<sup>13</sup> may be able to support this effort on national and regional levels. In some regions, a conceptual shift to fully integrate agritourism into agricultural viability (e.g., farm business development, agricultural zoning) instead of an “add-on” activity, may bolster understanding and support of the sector. In other regions, better collaboration with the tourism industry is warranted. To encourage investment in agritourism Extension, more research is needed to validate and quantify the benefits of agritourism. One possibility would be to analyze the connection between funding agritourism Extension and changes in agritourism earnings over time. In addition, there is an opportunity to package existing research into a toolkit to make the case for agritourism to universities, local decision makers, and other Extension professionals.<sup>14</sup> An important next step is for Extension colleagues to collaborate across their

<sup>13</sup> <https://Extensiontourism.net/>

<sup>14</sup> This is the goal of a current NIFA project: “Creating an Effective Support System for Small and Medium-Sized Farm Operators to Succeed in Agritourism (2020–2023).” <https://aeae.psu.edu/research/areas/agriculture-and-food-systems/agritourism>



own networks and with other service providers and researchers to demonstrate the need for increased investment and develop programming that meets the needs of farmers and ranchers, their families, business alliances, and their communities. Finally, assessing the economic impact and articulating the potential value of investing in agritourism to local and state rural development officials may result in opportunities to build a stronger network of partners to develop and grow these initiatives.

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## Extension Education

# Extension Program Development for Early Career Faculty

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JEL Codes: A23, Q10, Q16

Keywords: Career advice, Extension, graduate students, mentorship

### Abstract

Early career Extension economists seeking advice on Extension and research program development and mentorship have fewer places to turn due to the declining number of Extension economists in the profession. As such, we conduct a survey of Extension economists that ask about research and Extension integration, funding models, challenges to the profession, mentorship of graduate students, and philosophies of developing Extension programs. We find that networking with stakeholders to design research and Extension programs is viewed as a key element to a successful career. We also find that there is an insufficient level of formal mentorship and training occurring for preparing graduate students for Extension work. In the authors' opinion, results of the study suggest that formal mentoring programs that teach networking and communication skills to graduate students would greatly benefit them in their professional pursuits in Extension.

## 1 Introduction

Early in one's career it is wise to seek advice and mentoring from those who have been in the profession for a few years. Getting advice and mentorship can help early career professionals avoid mistakes, get their career on track faster, and more effectively navigate promotion and tenure. However, during the period 1980 to 2010, Extension full-time equivalents (FTE) declined by 22 percent due to declines in state and federal support (Lawrence, Hadley, and Henderson 2019; Wang 2014). This leaves many new Extension economists with fewer mentors in their own department to look to for assistance.

Unfortunately, most new Extension economists also have little formal training in Extension skills. A career in Extension is unique to the academic world because not only are technical skills needed to conduct applied research, but good communication skills are essential for connecting with stakeholders. In particular, many Extension economist positions require firsthand experience in agricultural production and agribusiness (Taylor and Zhang 2019). However, there are limited formal Extension training programs for graduate students or Extension assistantships that allow students to learn about Extension while training for their masters or doctorate. Many students are not even aware of Extension as a professional field until they enter the job market.

Given these conditions, many new Extension economists are looking for advice on how to start successful programs. As such, a survey of Extension economists offers the opportunity to hear different perspectives from professionals at various career stages regarding their ideas and advice for starting an Extension program today. This information has the potential to help new Extension professionals build their programs and position themselves for a successful promotion and tenure process.

The purpose of this paper is to highlight the advice and insights offered by Extension faculty working primarily with U.S. audiences to Extension economists entering the profession. Specifically, we focus on funding models, working with graduate students, and challenges faced by Extension professionals today. We also ask about their Extension philosophy and strategies for integrating research, teaching, and Extension. Finally, we summarize the advice offered to new Extension economists as they develop their programs for today's audiences and topics of interest.



## 2 Methodology and Data

We used an online survey to query agricultural and applied economics Extension professionals' views regarding their Extension program and philosophy, as well as advice for those considering a career in Extension. The authors wrote the survey instrument and revised it based on feedback from a panel of four Extension professionals at varying career stages. The study is exempt (2ii) under Michigan State University IRB STUDY00004892. The complete survey instrument is provided in the Supplementary Appendix.

We administered the survey online in August and September 2020 using the Qualtrics® platform. We sent an email with a URL to access the survey to members on the Agricultural and Applied Economics Association (AAEA) Extension section listserv. Furthermore, participants were encouraged to send the survey to colleagues with Extension appointments that were not on the listserv; therefore, we do not know the exact response rate. We received 37 usable responses, plus the responses from the four panelists, for a total sample of 41 Extension professionals.

The survey consisted of a mix of question types including multiple choice, multiple selection, Likert scale, sorting, and open-ended response questions. The multiple choice, multiple selection, Likert scale, and sorting questions are analyzed using basic frequencies and summary statistics in Excel.

We follow the iterative process suggested by Taylor-Powell and Renner (2003) to analyze the open-ended responses. First, we collectively decided on a list of potential themes for each open-ended question for the first round of coding. Next, we each individually categorized comments into one or more themes, depending on the length and content of the comment. Then we compared the thematic coding from all the authors, discussing discrepancies and assigning responses to their corresponding theme(s) based on group consensus. During the discussion, new themes emerged that better summarized the respondents' comments. Next, we checked the open-ended responses again for these new themes. After these steps, we created a master dataset that classified all the open-ended responses into the final themes for each open-ended question. Finally, we used frequencies of themes and example responses to analyze the open-ended questions.

## 3 Results and Discussion

### 3.1 Sample Description

The demographic information of the sample is in Table 1. Demographics data of the AAEA Extension section listserv, about 214 members in 2020 (Thilmany 2020), are unknown. However, Hilsenroth et al. (2021) reports demographic information from a department head survey of AAEA's agricultural and applied economics departments list (United States and Canada), that we use as a proxy of population statistics. All respondents in our sample hold at least a master's degree with the majority (87 percent) holding a doctorate. Nearly two-thirds of the sample identify as male, one third as female, and one respondent preferred to not specify. This is similar to Hilsenroth et al. (2021) where department heads reported 69 percent of their faculty (tenure and nontenure) were male. They also found that for those with majority Extension roles, there were increasingly fewer females in higher ranked positions than lower ranked positions. Our sample was majority white (87 percent), with 8 percent reporting as Asian, and two respondents preferred to self-described (described as other) or did not specify. We did not have any respondent identify as Black/African American, American Indian/Alaska Native, and Native Hawaiian/Pacific Islander. This is similar to Hilsenroth et al. (2021) that reported about 7 percent of faculty in responding agricultural and applied economics departments were from underrepresented minorities (Black, Hispanic, Asian, Two or more races, and Other). They also found that those in full or associate professor ranks with a majority of Extension appointments were mostly white. Only one respondent is of Hispanic, Latino, or Spanish origin. The majority of respondents were born in the United States with 10 percent being born outside the United States and 5 percent not specifying where they

**Table 1. Respondent Demographic Information**

Demographic Information	Frequency	Percent
<b>Highest level of education (n = 39)</b>		
Master's degree (MS or MA)	5	13%
Doctorate degree	34	87%
<b>Gender identity (n = 39)</b>		
Male	25	64%
Female	13	33%
Prefer not to specify	1	3%
Prefer to self-describe	0	0%
<b>Race (n = 39)</b>		
White	34	87%
Black or African American	0	0%
American Indian or Alaska Native	0	0%
Asian	3	8%
Native Hawaiian or Pacific Islander	0	0%
Prefer to self-describe	1	3%
Prefer to not specify	1	3%
<b>Ethnicity (n = 36)</b>		
Hispanic or Latino or Spanish Origin	1	3%
Not Hispanic or Latino or Spanish Origin	33	92%
Prefer to not specify	2	6%
<b>Where were you born? (n = 39)</b>		
Born in the United States	33	85%
Born outside the United States	4	10%
Prefer to not specify	2	5%

were born. Home countries from those born outside the United States include Argentina, Australia, China, and Taiwan.

Although our sample was somewhat consistent in terms of gender with agricultural and applied economics departments reported in Hilsenroth et al. (2021), the sample is notably less diverse than the U.S. population, which is 13 percent Black/African American, 6 percent Asian, and 4 percent other races. Furthermore, 18.5 percent of the U.S. population identifies as Hispanic or Latino (U.S. Census 2021). The low diversity in our sample could point to issues of recruiting Extension professionals from underrepresented populations, and echoes calls for our profession to be inclusive and prosocial (Thilmany 2020). Brunsma, Embrick, and Shin (2017) state that “Underrepresented minorities in academia do not receive good mentorship in comparison to their white counterparts” (Segura et al. 2011; Noy and Ray 2012; Spalter-Roth et al. 2013), and a majority of mentors are more likely to hold “colorblind” views of their students and dismiss the idea that social identities shape their students’ academic experiences.

Respondents come from all career stages across academia and the private industry, with 17 years of experience on average, ranging from one to 40 years (Table 2). Over 55 percent are in tenure-track positions with 20 percent being assistant, 15 percent associate, and 22 percent full professors. More than 20 percent are in non-tenure associate (7 percent) or full (15 percent) professor positions. Five percent of the sample are Extension educators. One respondent was in a private industry role, the 15 percent that

**Table 2. Survey Respondents’ Appointment Description (n = 41)**

Which of the following best describes your role?	Frequency	Percent
Private industry	1	2%
Assistant Professor, tenure track	8	20%
Assistant Professor, non-tenure	0	0%
Associate Professor, tenure track	6	15%
Associate Professor, non-tenure	3	7%
Full Professor, tenure track	9	22%
Full Professor, non-tenure	6	15%
Extension educator/agent	2	5%
Other (please describe)	6	15%
<b>Appointment split</b>	<b>Average</b>	<b>Range</b>
Research	14	[0,60]
Extension	68	[0,100]
Teaching	11	[0,70]
Administration	6	[0,100]
Other	2	[0,40]
<b>Years involved with Extension in career</b>	17	[1,40]

indicated other roles, including Extension specialist ( $n = 2$ ), nonprofit center, Extension administrator, research scientist, and retired. Appointment splits vary across research, teaching, Extension, and administration, with Extension being the highest percent on average, 68 percent, ranging from 0 to 100 percent. Responsibilities reported under “Other” included lobbying and service. Respondents ( $n = 38$ ) indicated where they worked; 39 percent were from the South region of the United States, 37 percent Midwest, 19 percent West, 3 percent Pacific, and 3 percent from a U.S. territory.

### 3.2 Program Description

Respondents describe their focus area in an open-ended question that we coded into themes (Table 3). Note that responses could fit into multiple focus area themes. The top three focus areas are commodity

**Table 3. Focus Area (n = 41)**

Theme (Could Have More Than One)	Frequency	Percent
Commodity specific	11	27%
Marketing	10	24%
Farm management	9	22%
Agriculture policy	8	20%
Risk management	8	20%
Agribusiness	7	17%
Production	5	12%
Rural and regional development	5	12%
Food systems	3	7%
Trade	2	5%
Environmental	1	2%

Note: The authors coded responses into themes; responses could span multiple themes.

specific, marketing, and farm management, with over 20 percent of respondents focusing on each of these areas. Other common focus areas include agricultural policy, risk management, and production. The least common focus areas are trade and environmental.

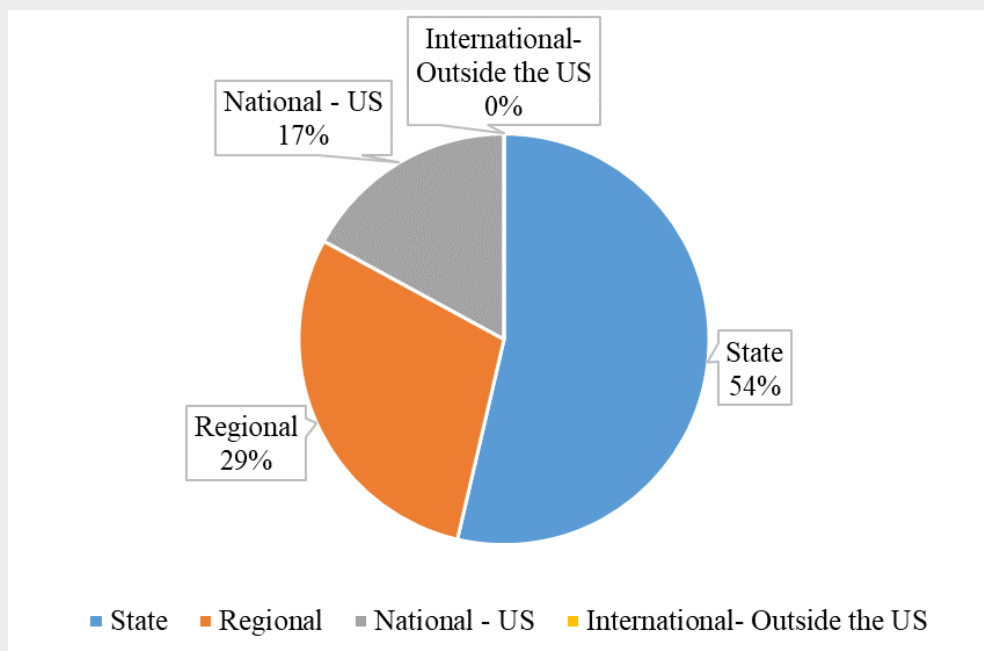
Next, we ask respondents about their primary audience through three questions. First, an open-ended question, “Who do you consider your primary audience?” Note that when coding responses into themes, there could be more than one theme per response (Table 4). Overwhelming, producers are the primary audience. The next three most common audiences are Extension agents/educators, policy makers, and agricultural stakeholders, such as industry leadership. Other audiences (17 percent) include lenders, academics, media, and consumers. These findings align with anecdotal evidence from Plastina, Leibold, and Stockton (2019).

**Table 4. Responses to: “Who Do You Consider Your Primary Audience?” (n = 41)**

Theme	Frequency	Percent
Producers	27	66%
Extension agents/educators	11	27%
Policy makers	10	24%
Agricultural stakeholders	10	24%
Agribusiness	7	17%
Other Extension specialists	4	10%
Community	3	7%
Other	7	17%

Note: The authors coded responses into themes; responses could span multiple themes.

The second question about respondents’ audience relates to the primary geographic scope of their programming (Figure 1). Over 50 percent of respondents consider their state as their primary geographic scope, followed by regional (29 percent) and national (17 percent). Note that no respondents indicate international—outside the United States—as their primary geographic scope. Potentially, this is due to only asking about primary scope or a function of our sampling strategy.



**Figure 1. Primary Geographic Scope (n = 41)**

In the third question related to audience, we ask respondents how often they coordinate with specified groups to develop/deliver Extension programming on a scale of “yes, often,” “yes, occasionally,” or “no” (Table 5). Over three-quarters of respondents report working with Extension educators/agents often, and 22 percent at least occasionally with none reporting they do not work with this group. The next most common collaborator is colleagues in other states, with 70 percent reporting often and 27 percent occasionally. Following closely, 68 percent report working often with state-based producer/commodity organizations and 32 percent occasionally. Nearly all respondents report collaborating with local and state government/policy makers and regional producer/commodity organizations either often or occasionally. Nearly half of respondents occasionally coordinate with national producer/commodity organizations, and national government/policy makers. The least common collaborators are consumer groups and the eXtension platform. Respondents could also list other groups with which they coordinate. These include agribusiness, lenders, Chamber of Commerce, Department of Tourism, economic development councils, nonprofits, international audiences, media, and research colleagues.

**Table 5. Responses to: Do You Coordinate with Any of the Following Groups to Develop/Deliver Your Extension Program?**

Group	Yes, Often	Yes, Occasionally	No
Extension educators/agents ( <i>n</i> = 41)	78% (32)	22% (9)	0% (0)
Colleagues in other states ( <i>n</i> = 37)	70% (26)	27% (10)	3% (1)
State-based producer/commodity organizations ( <i>n</i> = 41)	68% (28)	32% (13)	0% (0)
Local and state government/policy makers ( <i>n</i> = 41)	49% (20)	46% (19)	5% (2)
Regional producers/commodity organizations ( <i>n</i> = 37)	46% (17)	49% (18)	5% (2)
National producer/commodity organizations ( <i>n</i> = 41)	32% (13)	56% (23)	12% (5)
National government/policy makers ( <i>n</i> = 41)	17% (7)	63% (26)	20% (8)
Consumer groups ( <i>n</i> = 40)	13% (5)	45% (18)	43% (17)
eXtension platform ( <i>n</i> = 36)	3% (1)	28% (10)	69% (25)

Overall, Extension professionals in our sample communicate and collaborate with multiple types of audiences and stakeholders. From the authors’ perspectives, this highlights the importance of proactive networking, teamwork, and communication skills. Working with county agents/educators requires different skills than working with state government/policy makers or consumers on social media, for example.

### 3.3 Funding

Given the aforementioned decreases in state and federal lines, we inquired how respondents fund their Extension programs (Table 6). Over 50 percent fund their program using nationally competitive grants (68 percent), state or university grants (58 percent), and state budget line items (53 percent). Over 40 percent fund their program using commodity organizations (47 percent) and registration fees (47 percent). The least common funding sources are national budget line items, fee for service, and foundation donations. Other funding sources (13 percent) include membership dues/assessments, subscription fees, sponsors (like businesses), and regional and county grants. Thus, overall, we find that Extension professionals must seek funding from multiple sources to finance their program. Therefore, communication and grant writing skills are necessary to articulate the importance and impact of your



**Table 6. Responses to: How Do You Fund Your Extension Program? Select All That Apply (n = 38)**

Funding Source	Frequency	Percent
Nationally competitive grants	26	68%
State or university grants	22	58%
State budget line items	20	53%
Commodity organizations	18	47%
Registration fees	18	47%
National budget line items	11	29%
Fee for service	10	26%
Foundation donations	8	21%
Other	5	13%

proposed work to attract funds. Interestingly, with the exception of sponsorships, no respondents mentioned funding from the private sector, private foundations, or nonprofit organizations.

### 3.4 Working with Graduate Students

Anecdotally, in graduate school, students receive more training in research and teaching. However, rarely do they receive Extension training unless they work directly with an Extension professional as an advisor or mentor. Thus, to understand current training of future Extension professionals, we ask respondents a series of questions about working with graduate students (Table 7). Nearly all respondents report currently (64 percent) or previously (26 percent) training graduate students. Of the 25 respondents currently training graduate students, over half have graduate students work with them on Extension projects, and 44 percent sometimes have graduate students working on Extension projects. Most of the graduate students are funded externally (68 percent yes, 24 percent sometimes). On average in the last five years, respondents trained nearly three MS students, one MA/MBA, and one PhD student. Thus, masters level students, whether MS or MA/MBA, seem to be the preferred type of graduate student to work with Extension professionals. We hypothesize this could be the result of more universities having master level programs compared to PhD programs and that there are more master level students overall. Furthermore, working with master’s level students may fit better into Extension type projects that generally have tighter timelines—matching the length of master’s programs—and require less sophisticated methods to answer research questions. This gap in mentoring PhD students could indicate future or continued shortages of recruiting talented Extension professionals into state specialist-type positions.

We asked respondents an open-ended question, “How do you train graduate students for Extension” (Table 8). We coded responses into themes where one response could have multiple themes. Of the 22 respondents, over half bring graduates students to meetings/events with 45 percent also having graduate students give presentations. Other common training tools include applied research (36 percent) and coauthoring Extension publications or tools (27 percent). Additionally, mentoring or open conversations were also important (27 percent). Some (9 percent) have graduate students work with Extension educators. Other responses include not having a formal plan, having students participate in the AAEA Extension competition, and internships. Overall, no formal programs through the department/unit, such as a course on Extension communication, were mentioned, nor were formal Extension assistantships.

**Table 7. Graduate Student Training (n = 39)**

Question	Frequency	Percent
<b>Are you training graduate students?</b>		
Yes, currently	25	64%
Not currently but have in the past	10	26%
No	2	5%
Not applicable	2	5%
<b>Do your graduate students work with you on Extension projects? (n = 25)</b>		
Yes	14	56%
Sometimes	11	44%
No	0	0%
<b>Are you using external funds to employ graduate students on Extension projects? (n = 25)</b>		
Yes	17	68%
Sometimes	6	24%
No	2	8%
<b>For how many graduate students have you served as their primary adviser in the last 5 years? (n = 25)</b>	<b>Average</b>	
MS	2.68	
MA/MBA	1.08	
PhD	1.08	

**Table 8. Responses to: How Do You Train Graduate Students for Extension? (n = 25)**

Theme	Frequency	Percent
Bring to meetings/events	12	55%
Doing presentations at meetings/events	10	45%
Applied research	8	36%
Co-author on Extension pubs/tools	6	27%
Mentoring/open conversations	6	27%
Working with/meeting Extension educators	2	9%
Other	3	14%

Note: The authors coded responses into themes; responses could span multiple themes.

### 3.5 Extension Philosophy and Strategies for Integrating Research and Extension

To better understand why Extension economists set up their programs the way they do, we asked about their Extension philosophies (Table 9). The top responses were addressing stakeholder needs with applied research (70 percent) followed by being timely with relevant information (53 percent) and integrating research, teaching, and Extension (43 percent). These responses suggest that engagement with stakeholders beyond delivery of educational material is key to most Extension economists' programs. In the authors' opinion, the provision of timely and relevant information indicates that engagement with stakeholders requires Extension economists to continually update educational materials and work simultaneously with those same stakeholders to determine what problems are of the utmost interest to their businesses.

**Table 9. Responses to: What Is Your Extension Philosophy and/or Approach to Outreach? (n = 30)**

Theme	Frequency	Percent	Response Examples
Applied/Addressing Stakeholder Needs	21	70%	<ul style="list-style-type: none"> <li>• To deliver an Extension program that is driven by applied research and input from industry stakeholders.</li> <li>• Engage frequently, directly with stakeholders in order to accurately assess their informational/educational needs and then address those needs with timely, objective, research-based programs delivered through a variety of means.</li> </ul>
Relevant/Timely/Current Issues	16	53%	<ul style="list-style-type: none"> <li>• Timely, visually appealing, and easy-to-understand dissemination of analysis to stakeholders. Listening to the needs and frequently engaging with stakeholders.</li> <li>• To be as timely as possible with the most relevant information.</li> </ul>
Integration of Research, Teaching and Extension	13	43%	<ul style="list-style-type: none"> <li>• I focus my research on applied, policy-relevant questions often derived from my state and national Extension work. In this way, my research and Extension programs are fully integrated.</li> <li>• That engaging communities helps me gain more context to do relevant research and allows me to share it more effectively once we have findings to share.</li> <li>• I have blended my major role as an Extension specialist with on-campus teaching, research, international programs, and consulting drawing from each to support the others.</li> </ul>
Multiple Points of Contact	6	20%	<ul style="list-style-type: none"> <li>• Extensive live presence via numerous presentations in county Extension meetings coupled with intensive, hands-on workshops, and in-depth online resources.</li> <li>• Integrate intensive hands-on workshops and in-depth online resources with extensive, traditional live presentations.</li> </ul>
Education	6	20%	<ul style="list-style-type: none"> <li>• Provide meaningful, relevant education.</li> <li>• Education. We focus on talking about long-term trends, key drivers that would produce different outcomes.</li> </ul>

**Table 9 continued.**

Theme	Frequency	Percent	Response Examples
Collaborative with Other Educators and Specialists	5	17%	<ul style="list-style-type: none"> <li>• As a specialist, my number one client is the county agent.</li> <li>• Proactive and reactive to requests with county Extension agents and clientele.</li> <li>• State specialists as the knowledge center, I work with county Community Economic Development faculty for engagement.</li> </ul>
Output-Oriented	4	13%	<ul style="list-style-type: none"> <li>• Extension faculty should deliver science-based information to their clients (producers, consumers, Extension agents, industry partners, etc.) to help them make informed decisions.</li> <li>• Be output- vs. input-oriented.</li> </ul>

Note: The authors coded responses into themes; responses could span multiple themes.

Efficiency of program development through the integration of Extension, research, and teaching responsibilities is also important for a successful Extension economist (Table 10). Respondents identified feedback loops as the primary way in which they structure their programs, with comments such as “I make sure there is an Extension and research activity associated with every program I deliver.” Feedback loops are the preferred method of program integration (43 percent) followed by working on applied research (37 percent). To accomplish the aim of performing applied research that is relevant to stakeholders, one respondent noted that they “work closely with an advisory board of industry leaders” to determine the topics of highest interest. Multidisciplinary work (10 percent) was also mentioned in the responses as a way to integrate research and Extension.

## 2.6 Challenges Facing Extension

Using challenges mentioned by Langemeier and Shockley (2019); Lawrence, Hadley, and Henderson (2019); Plastina, Leibold, and Stockton (2019); and Taylor and Zhang (2019), we developed a list of nine potential challenges facing Extension. We asked respondents to rank the challenges as either a major challenge, a minor challenge, or not a challenge, and to include other challenges not listed (Table 11). Furthermore, in Appendix A, Table A.1, we report correlations between views on major challenges, gender, and years of experience (less than 10 years vs. 10 plus years). Nearly all, 95 percent, view budget as a major challenge. Training of Extension economists and people interested in Extension careers are ranked as major or minor challenges by nearly all participants, motivating the need for this study and continued discussion of how to develop upcoming Extension professionals. Women and those with less than 10 years of experience more frequently reported training of Extension economists as a major challenge. The view of those with less than 10 years of experience may indicate that more recent graduates are aware of the skills they develop in graduate school and that those skills may not match well with the requirements of Extension positions. Additionally, those with less than 10 years of experience were more likely to report interest in Extension careers as a major challenge.

**Table 10. Responses to: What Are Your Strategies for Integrating Your Research and Extension Program? (n = 30)**

Theme	Frequency	Percent	Response Examples
Feedback loops between research and Extension	13	43%	<ul style="list-style-type: none"> <li>• I use my Extension education programs to understand the priority issues facing my clientele. I use this information to identify potential research questions.</li> <li>• I make sure there is an Extension and research activity associated with every program I deliver.</li> </ul>
Applied research	11	37%	<ul style="list-style-type: none"> <li>• Engage with stakeholders to identify needs that call for research-based solutions. Engage with colleagues to identify research topics, methods, and current results that are applicable to the needs of Extension stakeholders.</li> <li>• Extension is defined as applied research. When I encounter a good question in Extension, I attempt to find the resources to research the question. Usually, simple economic analysis is sufficient to answer most Extension questions, and the audience appreciates not being snowed under with technical jargon.</li> </ul>
Stakeholder needs	8	27%	<ul style="list-style-type: none"> <li>• Conduct research that is relevant to industry stakeholders. To do so, I spend a great deal of time asking questions about what is “top of mind” for industry. I also work closely with an advisory board of industry leaders.</li> <li>• My research is based on the needs surfaced by stakeholders.</li> </ul>
Extension first	6	20%	<ul style="list-style-type: none"> <li>• Focus on Extension first and do research to support.</li> <li>• Be aware of their needs and then do research or find the already done research to address their issues.</li> </ul>
Relationships	6	20%	<ul style="list-style-type: none"> <li>• I also have lots of interdisciplinary interactions as well as frequent contact with industry, to identify research problems.</li> <li>• Building relationships and communicating.</li> </ul>
Partner organization	5	17%	<ul style="list-style-type: none"> <li>• Utilize information from Extension Program Advisory Committees and frequently asked questions from Extension educators, area specialists, and public to build projects and programs.</li> <li>• Use of materials and other resources from partner organizations.</li> </ul>



**Table 10 continued.**

Theme	Frequency	Percent	Response Examples
Multidisciplinary	3	10%	<ul style="list-style-type: none"> <li>I take a multidisciplinary research approach to covering a variety of important issues for agricultural producers.</li> </ul>
Graduate students	1	3%	<ul style="list-style-type: none"> <li>Putting grad students on Extension-research projects.</li> </ul>

Note: The authors coded responses into themes; responses could span multiple themes.

**Table 11. Responses to: What Do You View as the Major Challenges Facing Extension? Please Rate the Following Items as a Major Challenge, Minor Challenge, or Not a Challenge**

Item	Major Challenge	Minor Challenge	Not A Challenge
Budget ( <i>n</i> = 38)	95% (36)	0% (0)	5% (2)
Training of Extension economists ( <i>n</i> = 37)	46% (17)	46% (17)	8% (3)
People interested in Extension careers ( <i>n</i> = 37)	43% (16)	51% (19)	5% (2)
University administration support ( <i>n</i> = 36)	42% (15)	39% (14)	19% (7)
Demands for tenure ( <i>n</i> = 36)	39% (14)	42% (15)	19% (7)
Delivery methods ( <i>n</i> = 37)	30% (11)	43% (16)	27% (10)
Changing audience demographics ( <i>n</i> = 36)	25% (9)	53% (19)	22% (8)
Industry consolidation ( <i>n</i> = 36)	19% (7)	47% (17)	33% (12)
Consumer interest in ag ( <i>n</i> = 35)	6% (2)	40% (14)	54% (19)

Nearly 80 percent ranked university administration support and demands for tenure as major or minor challenges. Delivery methods, changing audience demographics, and industry consolidation are largely viewed as minor challenges. Females and those with less than 10 years of experience were more likely to report delivery methods as major challenges. Females also more frequently viewed changing audience demographics as a major challenge. This viewpoint may reflect recent changes in the type of delivery methods employed by Extension economists in the wake of the pandemic and the challenges this presents to engaging audiences as well as competing with other types of information platforms.

Views are mixed on consumer interest in agriculture with over 50 percent not viewing it as a challenge. Other challenges listed by participants include competition from other information sources, changing technology, changing county educator/agent roles, and overemphasizing the importance of on-campus tenure track roles compared to other valuable position types.

### 3.7 Advice for Early Career Extension Professionals

The final survey question focused on what three pieces of advice the respondents would offer to early career Extension economists (Table 12). This question was open-ended and gave respondents the opportunity to discuss strategies not covered by previous survey questions. The most common advice theme in the responses is networking and relationships (40 percent). Examples of this theme include “look for professional partners (Extension and research) and industry partners” to work with on development of their program, and “invest in county, regional, and statewide agents” as a component of relationship building. This theme ties back to the answers on the Extension philosophy question, which identify understanding stakeholder needs as important for developing a program. It also demonstrates the need for solid communication and networking skills by Extension economists to build their programs around input from stakeholders.

**Table 12. Responses to: What Are Three Pieces of Advice You Would Offer to an Early Career Professional Getting Started in or Considering Working in Extension? (n = 84)**

Theme	Frequency	Percent	Response Examples
Relationships/connections/network	34	40%	<ul style="list-style-type: none"> <li>• Look for professional partners (Extension and research) and industry partners.</li> <li>• Engage. The most successful programs are ones that come from the ground up. You have to know what people are thinking about, where their concerns lie, and how you can help address needs. You can start with just calling people.</li> <li>• Invest in your county, regional, and statewide agents. These are folks you need on your team.</li> </ul>
Applied research and Extension integration	16	19%	<ul style="list-style-type: none"> <li>• Do not see research and Extension as competing; they are complementary.</li> <li>• The integration of research and Extension programs is very important for navigating the tenure process. The Extension also needs solid scientific research to support what we deliver to target audiences.</li> <li>• Don't ever stop doing research. Applied research is the foundation of a strong Extension program, not to mention the key to your own professional marketability.</li> </ul>
Be relevant for your stakeholders	14	17%	<ul style="list-style-type: none"> <li>• Produce relevant, research-based information that is directly applicable to producer decision making or agricultural producers, policy makers, professionals, etc.</li> <li>• Assume that the stakeholders you work with already know more than you do. They will definitely understand their decision environment better than you do. Focus on figuring out what their challenges are. In doing this, you identify ways to be helpful, and you will get a lot of great research and program ideas from listening to them.</li> </ul>
Listen	10	12%	<ul style="list-style-type: none"> <li>• Spend the beginning of your appointment on a listening session with key stakeholders around the state and nationally so that you can get a better sense of on-the-ground needs (make sure to negotiate for travel funds in your start-up budget to do this).</li> <li>• Meet with and listen to your clientele (talk less, listen more).</li> </ul>

**Table 12 continued.**

<b>Theme</b>	<b>Frequency</b>	<b>Percent</b>	<b>Response Examples</b>
Communication	8	10%	<ul style="list-style-type: none"> <li>• Acquire the hard skills and equip with knowledge for your subject area is important, and people soft skills in Extension are also important.</li> <li>• Treat your audience like partners and encourage bidirectional communication.</li> </ul>
Passion/Want to help others/curious	6	7%	<ul style="list-style-type: none"> <li>• Keep your mind intrigued. Consider changing your focus after a few years. Don't rest on what has been done in the past but look for a new question and a new way to address it.</li> <li>• If you like working with people, Extension can be very rewarding.</li> </ul>
Get a mentor	5	6%	<ul style="list-style-type: none"> <li>• Seek mentors and be the driving force that pushes and maintains that relationship. You may feel like you are bugging the person, but most are willing to help if they feel you want help.</li> <li>• Don't rely on formal mentoring. Find your mentors and seek advice and collaboration with established faculty with careers you respect.</li> </ul>
Work across state lines	5	6%	<ul style="list-style-type: none"> <li>• Connect with your Extension colleagues in other states or regions. Learn from them.</li> <li>• Seek out collaborative opportunities with colleagues across state lines.</li> </ul>
Know tenure/job requirements	4	5%	<ul style="list-style-type: none"> <li>• Work hard to meet your university promotion targets but realize your program will evolve. Give yourself a few years to find your stride. And then it will keep evolving.</li> </ul>
Miscellaneous/Other	15	18%	<ul style="list-style-type: none"> <li>• Seek outside funding from grants.</li> <li>• Take calculated risks and learn from your failures.</li> <li>• Develop good working relationships with other disciplines in your university. Most programs are improved with interdisciplinary perspectives.</li> <li>• Keep up your analytical skill set.</li> </ul>

Note: The authors coded responses into themes; responses could span multiple themes.

Another common piece of advice is to conduct applied research that is highly integrated with the Extension program (19 percent). Respondents with this theme note that "Extension needs solid scientific research to support what we deliver to target audiences." Somewhat pragmatically, the integration of research and Extension is also cited as important for navigating tenure and keeping a person marketable in the profession.

Respondents also said relevancy to stakeholders is a key piece of advice (17 percent). One quote that summarizes this advice is:

*“Assume that the stakeholders you work with already know more than you do. They will definitely understand their decision environment better than you do. Focus on figuring out what their challenges are. In doing this, you identify ways to be helpful, and you will get a lot of great research and program ideas from listening to them.”*

This theme emphasizes that you must get stakeholder input when developing an impactful Extension program; you cannot develop the technical knowledge in isolation and then deliver content. Feedback loops as discussed earlier are necessary. Relatedly, themes on listening and communication jointly made-up 22 percent of advice. Several of the advice themes center around the need for Extension economists to be extensively networked with their stakeholders and let their voices be the driver for research and Extension activities. This requires going out into the community, meeting stakeholders, and having an open mind when listening to their business challenges and opportunities.

Missing from the common advice themes is the encouragement to seek external funding. Although many Extension economists seek external funding for their programs, as noted above, this was not among the top themes of advice for early career professionals. This likely signals that while external funding is important, establishing a network of stakeholders and gathering information on their needs for research and Extension projects is a higher priority or even a precursor to attracting funding.

## 4 Implications and Conclusion

While the objective of this article is to provide new Extension economists with advice on how to best conduct their applied research and Extension programs, as well as navigate promotion and tenure, the results of the survey also form the basis of a call to action for agricultural and applied economics departments across the country. There is a need for recruitment and retention of more diverse individuals into Extension. In addition, more training is needed for graduate students to develop the skills needed for Extension work and implementing research programs that are integrated with Extension.

In the past, it was common for agricultural economists to come from a farm background with approximately 30 percent of non-Extension economists and 40 to 50 percent of Extension economists having lived on a farm as a young person (Foltz and Barham 2009). However, the decline in rural populations in the United States means fewer students will come from a farm or ranch. There is also an increase in foreign-born students in agricultural and applied economics graduate programs. This lack of firsthand experience with U.S. rural issues should not deter these students from entering Extension careers. Instead, graduate programs should emphasize training in communication and engagement with farmers alongside technical skills to attract and retain these individuals in Extension roles.

Formal training in Extension does not necessarily have to come from the departmental level. It would be possible to conduct a regional or national training program for graduate students that reflects both the commonalities and differences in Extension programs that students might encounter in their first job. As emphasized in the survey results, communication and networking skills are essential for Extension economists engaging with their stakeholders. This includes the feedback loops and co-production of knowledge that comes from working with stakeholders to develop a research and Extension program. Possibly a certificate could be awarded to students who complete the program as a signal to future employers of their applicable skill development.

Finally, we encourage the continuation of the AAEA mentoring program for young professionals. This one-on-one mentorship gives highly useful insights to new Extension economists and allows them to hear from people outside their department and at different stages of their career. All these efforts



combine to promote exceptional service to stakeholders and the recruitment and retention of talented Extension economists, which is highly valued in a land-grant institution.

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## Appendix A

**Table A1. Correlations Between Gender or Years of Experience and Viewing the Following Issues as Major Challenges Facing Extension**

Major Challenges Facing Extension:	Gender		Correlation (Male = 1)	Years of Experience		Correlation (10 plus years = 1)
	Male (%)	Female (%)		Less than 10 years (%)	10 plus years (%)	
Interest in Extension careers	43%	45%	0.00	62%	29%	-0.27
Changing audience demographics	17%	45%	-0.31	31%	21%	-0.11
Tenure demands	39%	45%	-0.08	38%	38%	-0.01
Training of Extension economists	39%	64%	-0.20	77%	25%	-0.46
Administration support	43%	36%	0.05	31%	46%	0.15
Delivery methods	22%	45%	-0.20	46%	17%	-0.26
Industry consolidation	17%	18%	0.03	15%	17%	0.07

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**Extension Education**

# A Research-Based Extension Curriculum to Improve Negotiation Skills and Outcomes for Agricultural Stakeholders

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JEL Codes: A29, Q1, Q12

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**Abstract**

We present a new, research-based Extension program on the topic of negotiation for the agricultural community. This endeavor draws on the expertise of Extension faculty from several western U.S. states and responds to ongoing needs of Extension clientele looking to improve business outcomes and relationships. The content currently consists of seven informational guides, one worksheet, and five online learning modules that include instructional video presentations, quizzes, supplemental learning materials, and interactive activities designed to build knowledge and skills in negotiation within an agricultural context. The relatively new online programming has been well received, and opportunities for content expansion remain. The website and content design offer possibilities for both on-site teaching and self-guided learning for Extension clientele, as well as for potential use in agribusiness education.

## 1 Introduction

Agricultural managers face a growing trend toward privately negotiating business outcomes. The share of all U.S. livestock and crops under marketing or production contracts was 52 percent and 22 percent, respectively, in 2013 (MacDonald 2015). In 2019, small and midsize farms made up 79 percent of all farms having contracts related to production (U.S. Department of Agriculture, Economic Research Service 2021). Agricultural managers, landowners, and farm families also face situations where they must negotiate with others to reach agreements regarding land leases, transition plans, loans, and more.

Research suggests that agricultural professionals are likely disadvantaged when privately negotiating market sales. Bastian, Jones et al. (2018) conducted focus group interviews with producers regarding negotiated sales at four different locations in Wyoming. Participants generally felt like they had to take the price buyers offered (i.e., had little bargaining power). Experimental research investigated the behavior of agricultural professionals in privately negotiated markets and found sellers made 30 percent less than buyers when negotiating for price (Bastian 2019). These results were consistent with experiments conducted with college students and agricultural professionals, suggesting that regardless of stage of life or business experience, improved negotiation skills were needed and beneficial for participating subjects (Nagler et al. 2013; Bastian 2019).

Communications from members of the agricultural community and other Extension faculty provided anecdotal evidence of broader negotiation programming needs. Common topics of interest indicated via phone calls, emails, and various workshops, included estate and transition planning and land leasing. This anecdotal evidence provided the impetus for initial development of an agriculturally focused negotiation curriculum introducing several key negotiation concepts in an agricultural context. Initial stakeholder feedback on the developed curriculum was positive and came from a range of individuals in several regions. Our interpretation of this feedback was that this curriculum could be of interest to stakeholders in many communities with potential for widening the reach.



To investigate whether scaling up the endeavor would indeed meet the perceived needs, a survey was developed and distributed to county Extension educators/agents in Idaho, Montana, and Wyoming via Extension listservs in September 2021 to gauge their interest in facilitating agriculturally focused negotiation programming. A total of 21 educators responded, and of those, 16 stated that they receive clientele requests for which negotiation skills training would be helpful. The Extension educators/agents also identified specific negotiation-related topics on which they receive requests and/or anticipate needs for providing advice in the future. The topics included land lease agreements and associated management arrangements, contracts for crop marketing and input acquisition (including nutrients, pest management materials, labor, and equipment), neighbor relationships (e.g., property line fence maintenance, water access, and management), family business transitions, and estate planning issues. Additionally, 19 respondents indicated that they were interested in attending a train-the-trainer activity focused on building knowledge and skills needed to teach negotiation within an agricultural context to clientele. These survey results confirm that needs for knowledge and skills in negotiation exist across many aspects of agricultural endeavors, besides the area of marketing.

### **1.1 The Need for Agriculturally Focused Negotiation Education**

An extensive body of research and educational materials exist for nonagricultural business negotiation practices (see for example Fisher and Ury 1991; Brett and Thompson 2016; Harvard University Program on Negotiation 2021). Research finds that educational information and training can improve outcomes for people involved in business negotiations (Movius 2008; Zerres et al. 2014). Obtaining and applying knowledge gained from a list of negotiation tactics may substantially enhance the joint negotiation outcome (Weingart, Hyder, and Prietula 1996). Moreover, managers attending to learn primary negotiation principles versus contextual specific cases are better able to apply these to different negotiation settings (Kim, Thompson, and Loewenstein 2020).

Why not use the materials previously developed for other businesses to train those involved in agriculture? There are two main justifications for building on existing business negotiation materials and explicitly demonstrating how the developed content can be successfully applied in agricultural contexts. Both relate to differences between farm business and other business structures. First, 98 percent of farms in the United States are family farms, and thus are structured such that several family members have prominent roles in business management activities (U.S. Department of Agriculture, Economic Research Service 2022). This suggests that interpersonal (e.g., family member, neighbor) dynamics are of greater importance for agricultural business decisions than that of many other common business contexts from which many negotiation curricula are based, especially large corporations. Second, farmers “wear many hats” and commonly make production and business management decisions that are interpersonal in nature on their own (i.e., without a business partner, accountant, or legal counsel involved; American Farm Bureau Foundation for Agriculture, 2015). This is in contrast to general corporate settings, in which several specialized individuals are assigned to collectively implement firm-wide business activities. Thus, a curriculum using agricultural negotiation examples is plausibly more understandable and applicable to agricultural professionals than a curriculum designed for corporate professionals. Other reasons why agriculturally specific negotiation curriculum would benefit farmers and ranchers pertain to commonalities in personality and learning styles among members of the agricultural community, but which differ from the general population, as investigated in previous literature.

Researchers have examined linkages between farm/ranch manager personality types and business economic performance, suggesting the potential for unique educational needs. Jose and Crumly (1993) conducted a study of 120 farm families (243 individuals) to identify psychological types and the associated effect on management objectives. Study group findings, via a composite score for both males and females, reported that 59.3 percent of participants revealed a statistically higher degree of introversion than the general population in which 52.0 percent exhibited introversion (Jose and Crumly 1993). Howard, Brinkman, and Lambert (1997) used a Life Styles Inventory (LSI) approach with a sample

of 61 managers across Canada and found that agricultural producers scored differently than the normal population on eight of twelve LSI scales. The authors concluded that these managers were more task oriented, more defensive in their lifestyle, more likely motivated by a fear of failure, needed more security, and were more likely to resist change as a result. Both studies reported that agricultural producers are better at managing production and operations than managing people. From these and other studies (Nuthall 2001; Nuthall and Old 2018; Greig, Nuthall, and Old 2019; Remenova and Jankelova 2019), personality type or management style plays a significant role in the decision-making approach used by a manager. Thus, such traits influence how agricultural managers approach, participate in, and manage the outcomes from negotiations between the manager and internal and external parties.

Moreover, research specifically links personality type to learning styles and preferences of agricultural learners. Horner and Barrett (1987) gave the Myers Briggs Type Indicator (MBTI) assessment (Briggs and Myers 1988) to farm couples attending Extension farm management programs to better understand how they might make business decisions and use Extension information. They found that the largest percentage of men attending the programs (25.3 percent) were classified as “introverted, sensing, thinking, and judgmental” (ISTJ) while the largest percentage of women (17.8 percent) were classified as “introverted, sensing, feeling, and judgmental” (ISFJ). Weigel (1999) indicates producers in these categories deal best with management situations through accumulation of experience. Trying new strategies in which producers have no experience can be discouraging, which indicates a need for relatable examples in educational efforts meant to prepare producers for negotiation scenarios.

Schroeder (1993) gave the MBTI assessment to a sample of incoming college students across all majors over a 15-year period at a Midwestern university and found that approximately 60 percent of entering students had a “practical” rather than a “theoretical” orientation toward learning, meaning that “learning by doing” was most beneficial to the majority of students. Ricketts, Rohs, and Nichols (2005) surveyed 100 students attending a two-year agricultural college regarding their learning styles and preferences using Experiential Learning Theory as the basis for the survey questions (Kolb 1984). The authors concluded that faculty at agricultural colleges must incorporate real-world, hands-on applications into their courses to have the most educational impact. Additional literature confirms that experiential learning approaches improve educational impact for most college and Extension students alike (Nagler et al. 2007; Bastian 2008). Overall, findings in the literature indicate that providing relatable examples and experiences to agricultural learners in and out of the classroom is essential for developing negotiation curricula that achieve desired learning outcomes. Thus, educational materials lacking concrete agriculturally focused examples and cases are less likely to be impactful.

## 1.2 The Lack of Agriculturally Focused Education Materials

Despite the potential for improvement through applied educational training and the need to develop better negotiation skills, relatively little educational information is tailored for agricultural stakeholders, that is, producers and nonproducers seeking to expand their knowledge and improve their skills in this area. Bastian (2019) surveyed all Extension websites at U.S. land-grant universities for outreach publications focused on bargaining or negotiation and found only nine relevant publications. Several of these publications did not involve agricultural contexts, and many focused on legal issues more than negotiating for a preferable outcome in a general business interaction. Additionally, agricultural managers completing college training may find it difficult to obtain formal classroom training related to negotiation. A national investigation surveyed 114 agribusiness programs and found that only 29 percent of the degree granting departments offered a sales or negotiation course, and only 7 percent of the surveyed programs (eight institutions) required a sales or negotiation course in at least one of their agribusiness degree options (Bastian 2019). Overall, this suggests a lack of agriculturally focused negotiation materials, and that an opportunity exists for Extension faculty to provide impactful negotiation-related education for agricultural stakeholders as well as agribusiness students.

### 1.3 Filling the Void

To address the negotiation needs of those involved in agriculture, the coauthors developed multifaceted “Negotiation in Agriculture” (NIA) curriculum. Characteristics of the target audience were critical in the material’s development. It was anticipated, based on prior experiences and information obtained from county Extension educators/agents and others, that the primary audience was composed of a diverse set of agricultural community members, with a common characteristic of being “nontraditional” learners. Wedemeyer (1981) defines these learners as those who have some “traditional” education obtained through an accredited U.S. school system and supplement their knowledge by engaging in learning activities outside of that system. Members of the agricultural community comprise a relatively unique subset of “nontraditional” learners. They are generally familiar with the Extension system in which county and university-based faculty organize learning programs designed to meet perceived needs of the community outside of the official education system.

The materials developed allow learners to achieve varying levels of learning domains ranging from an initial basic understanding to advanced mastery. Our curriculum addresses issues with agricultural stakeholders as nontraditional learners that engage in educational activities outside of the formal education system and have heterogeneous needs and preferences. The educational materials take into consideration people’s varying preferences for obtaining education via visual and/or aural presentation versus written information (Fleming and Mills 1992). Our set of learning materials include printable guides to introduce key concepts and web-based learning modules composed of presentations with audio and visual information, quizzes for assessment of knowledge gains, supplementary reading materials, discussion forums for peer and instructor-to-peer interaction, and templates for use during actual negotiations. Both the informational guides and learning modules are hosted on the NIA website.<sup>1</sup> Making educational materials available online is essential to facilitate self-guided learning that fits stakeholders’ schedules and preferences. Moreover, this website and material facilitates agricultural stakeholder learning in both classroom and independent settings.

By offering this comprehensive set of materials and tools, our goal is to achieve the following set of general learning objectives. Specific learning objectives for each module are listed along with the module descriptions in Section 3.

#### NIA Course Learning Objectives

1. Participants will gain awareness, knowledge, and skills in interpersonal communication and negotiation techniques within an agricultural context.
2. Participants will realize an increased awareness of the importance of interpersonal communication and negotiation in agriculture.
3. Participants will gain awareness and knowledge of negotiation-related educational resources beyond those in the NIA course.

We also discuss plans to evaluate the effectiveness of our programming in achieving learning objectives and glean insight into ways our methods can be improved. The remainder of the article provides detailed information regarding the specific approach used to develop our web-based Extension program and the specific concepts covered.

## 2 Approach Used to Develop NIA Materials

The NIA curriculum reflects the reality that participants will have different preferences for engaging in learning activities. In a broad sense, the curriculum essentially combines concepts of “domains” of learning developed by Bloom et al. (1956) with “modes” of learning described by Fleming and Mills

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<sup>1</sup> <https://negotiation.farmmanagement.org/>

(1992) to allow participants to improve their negotiation skills through engagement with learning materials presented in a variety of ways. The Bloom et al. (1956) “domains” of learning, listed from a lesser to greater extent of mastery, are remembering/understanding, applying, analyzing, evaluating, and creating. The Fleming and Mills (1992) “modes” of learning pertain to preferences regarding ways people obtain information including visual (V), aural (A), read and/or write text (R), and kinesthetic (K), which is a preference for engaging in an experience or action. These learning modes are commonly referred to with the VARK acronym.

## 2.1 Key Concept Guide Formation

To achieve the first learning outcome of remembering/understanding, the initial set of educational materials produced were guides that combine visual and written text to introduce fundamental negotiation-related concepts. These guides stemmed largely from “Negotiation Skills in Natural Resources Management” by Smutko (2016), as well as from Raiffa, Richardson, and Metcalfe (2002), and Lewicki, Saunders, and Barry (2015), and other sources. Several co-authors adapted parts of these materials to agricultural cases or applications. The guides and, in some cases, accompanying worksheets offer written guidance in an easy-to-read format that motivates learning through an introductory vignette describing a scenario in which negotiation would be beneficial. The guides range from introductory concepts such as “Why Negotiate?” (Hewlett and Fuller 2020) to more specific applications, such as “Preparing a Negotiation Template” (Tejeda et al. 2021), and “Bargaining for Better Market Outcomes” (Bastian et al. 2021). Additionally, most guides serve as the starting point for learning modules created around the concepts they introduce, described in the next section. Currently, seven guides and one worksheet are available at the NIA website. Each can be used as an assigned reading exercise in a classroom course or an in-person workshop series, perhaps using the vignette to spark discussion. They may also be used as a reference to respond to questions an Extension educator, agent, or specialist receives.

## 2.2 Web-based Module Development Strategy

The NIA project learning modules were developed and distributed using the Moodle open-source learning platform designed to provide educators, administrators, and learners with a single robust, secure, and integrated system to create personalized learning environments. The Moodle platform offers learner activity tracking (time spent and materials accessed), engagement via public discussion forums and private interaction, as well as module activity scoring and assignment feedback.

Modules follow a pre-informed pedagogy. Components engage learners across four separate and distinct learning activities or modalities:

1. Learn when others teach,
2. Learn by observing peers/others,
3. Learn by teaching, and
4. Learn by practice/doing.

These separate modalities are addressed across the entire pedagogy (and conversely learning) experience by ensuring that each module includes, but is not limited to, recorded presentations (video and audio-only formats), text-based presentation materials, audio-accompanied slide presentations, discussion forums, learner-engagement that encourages collaborative interaction, and feedback by users, as well as traditional assignments and quizzes that assess learning outcomes. Modules also include the NIA guides and other relevant outside readings and reference materials as appropriate to expand the learner’s appreciation for other perspectives and approaches.



Each module is composed of several components:

1. *Best Practices*: This offers participants a chance to view a recorded video presentation along with the slides presented and speaker notes;
2. *Ideas to Build on*: Participants engage in a discussion forum based on provided questions; and
3. *Tips for Success*: This section provides participants the chance to teach each other about strategies that have worked. They do this by providing website links to additional resources, sharing approaches that they have tried and that have worked, or by describing methods that people they are familiar with have used; and
4. *Practice*: This component allows participants to learn by practicing the components of the module by creating a practice document based on a scenario that is provided to them and then submitting it for comment. They also have the option to complete a knowledge check in the form of a short quiz.

We believe these educational materials (guides and module content) achieve the objectives for learners. How materials relate to the previously described learning domains is summarized in Table 1.

**Table 1. NIA Curriculum Design Summary**

		Educational material (associated mode of learning in parentheses)
<b>Learning domains</b>	Remembering/ Understanding	1) Guides (Visual, read text) 2) Web-based presentations (Visual, read text, aural)
	Applying	1) Web-based quizzes (Read text)
	Analyzing	1) Web-based supplementary materials (Read text)
	Evaluating	1) Web-based discussion forum (Practice, write text)
	Creating	1) Templates for guiding discussion <sup>2</sup> (Read and write text)

*Note:* The learning domains are adapted from Bloom et al. (1956), and the modes of learning are from Fleming and Mills (1992).

**3 Description of Educational Module Content and Motivation** The topic of each learning module relates to key factors involved in the negotiation process. The negotiation content generally comes from publications by Fisher and Ury (1991); Galinsky and Mussweiler (2001); Raiffa, Richardson, and Metcalfe (2002); Lewicki, Saunders, and Barry (2015); Smutko (2016); and others. Modules begin by probing the agricultural stakeholder’s reason for conducting a negotiation (i.e., why is it necessary to negotiate?). The content then presents various relevant elements considered for a successful negotiation outcome. These elements include principles, various applicable tools, and exercises to assist in the pursuit of a successful learning outcome.

### 3.1 Why Negotiate?

This first module provides a basic background and definitions surrounding negotiation, a description of who engages in negotiation, where negotiation fits within the spectrum of other methods for achieving agreement or resolving conflict, and concludes with a list of reasons why negotiation could be the preferred approach to conflict resolution.

<sup>2</sup> An example provided in Figure 1.

## NEGOTIATION TEMPLATE

Issues to Address	Interests to Consider	Potential Solutions
ISSUE #1:	INTEREST #1.1:	SOLUTION #1.1-A:
		SOLUTION #1.1-B:
		SOLUTION #1.1-C:
	INTEREST #1.2:	SOLUTION #1.2-A:
		SOLUTION #1.2-B:
		SOLUTION #1.2-C:
	INTEREST #1.3:	SOLUTION #1.3-A:
		SOLUTION #1.3-B:
		SOLUTION #1.3-C:
ISSUE #2:	INTEREST #2.1:	SOLUTION #2.1-A:
		SOLUTION #2.1-B:
		SOLUTION #2.1-C:
	INTEREST #2.2:	SOLUTION #2.2-A:
		SOLUTION #2.2-B:
		SOLUTION #2.2-C:
	INTEREST #2.3:	SOLUTION #2.3-A:
		SOLUTION #2.3-B:
		SOLUTION #2.3-C:
ISSUE #3:	INTEREST #3.1:	SOLUTION #3.1-A:
		SOLUTION #3.1-B:
		SOLUTION #3.1-C:
	INTEREST #3.2:	SOLUTION #3.2-A:
		SOLUTION #3.2-B:
		SOLUTION #3.2-C:
	INTEREST #3.3:	SOLUTION #3.3-A:
		SOLUTION #3.3-B:
		SOLUTION #3.3-C:
ISSUE #4:	INTEREST #4.1:	SOLUTION #4.1-A:
		SOLUTION #4.1-B:
		SOLUTION #4.1-C:
	INTEREST #4.2:	SOLUTION #4.2-A:
		SOLUTION #4.2-B:
		SOLUTION #4.2-C:
	INTEREST #4.3:	SOLUTION #4.3-A:
		SOLUTION #4.3-B:
		SOLUTION #4.3-C:

NIA-20210316.01  
 J.P. Hewlett - University of Wyoming, H. Tejeda - University of Idaho, K.B. Fuller - Montana State University, and P. Hatzenbuehler - University of Idaho.

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**Figure 1. Negotiation Template (Hewlett et al. 2021)**

### 3.1.1 Module Motivation

Many individuals, particularly those who own and/or manage agricultural businesses, are generally not aware of the many approaches used by nonagricultural businesses to resolve conflict. Negotiation offers many appealing features when compared to costlier approaches such as mediation, arbitration, or litigation. The main emphasis is on helping participants better understand where negotiation fits within this broad spectrum, as the basis for appreciating why negotiation skills would be valuable. The desired learning outcome is that participants will demonstrate an understanding of the potential benefits from negotiation.

### 3.1.2 Module Highlights

*“Why Negotiate?”* includes a video presentation by Dr. Steve Smutko, Spicer Chair of Collaborative Practice in the School of Environment and Natural Resources, and a Professor in the Department of Agricultural and Applied Economics at the University of Wyoming. The presentation helps to clarify that negotiation is one approach for resolving conflict; to understand the process, substance, and relationship elements present in a negotiation; to define the purpose of negotiation is not always to reach agreement but may also explore possible solutions; and to describe the concept of Best Alternative To a Negotiated Agreement (BATNA).

## 3.2 Questions to Answer before Meeting

The second module provides a framework for the negotiation preparation process by asking a specific set of questions. It is the first of three modules designed to help the learner adequately prepare for an upcoming negotiation (other modules include Preparing for Your Discussion and Understanding Frames and Reframing). The module includes three main components, covering why preparing for a meeting is beneficial, identifying and evaluating options during the planning process, and identifying and acknowledging unknowns that can arise during a meeting. The identifying and evaluating options component builds on the concepts and framework developed by Carnevale and Pruitt (1992). They present potential negotiation options within an XY graph for which the interests of each party in the negotiation are represented on one axis. Any interior point on the graph represents a potential option for agreement between the parties. In the module example, a line extending from the X to Y axis represents the number of farm enterprises managed by the two people in the meeting. An agreement along the line represents a simple division of tasks without further understanding of preferences for the types of farm enterprises that each party would like to manage. A negotiated agreement is presented as one in which the preferences are taken into consideration and extend beyond a random division of tasks. This negotiated agreement improves the satisfaction of the parties in the negotiation by maintaining control over their preferred activities.

### 3.2.1 Module Motivation

Motivation for this module stems from anxiousness and stress many potential negotiators communicate in calls and emails with the coauthors. Many people feel unprepared and uncomfortable, when faced with a looming business decision to be made with another party, such as a tenant or family member involved in estate planning discussions. Preparation can help parties, even in small negotiations (Weiss 2014). This and the *“Why Negotiate?”* module assist by providing a framework for preparation, suggesting questions to ask, calculations, and thought exercises to complete, even suggestions for the physical environment where parties are comfortable and most productive during the negotiation itself. The learning outcome for this module is that participants gain an understanding of the importance of preparing for negotiations by asking themselves key questions relating to organizing and implementing a negotiation in a manner that achieves their goals.

### 3.2.2 Module Highlights

This module includes a video presentation jointly offered by Shannon Sand at the University of Hawaii, Patrick Hatzenbuehler at the University of Idaho, and Kate Fuller at Montana State University. The presentation begins with a story outlining the challenges faced by a farm family transitioning management responsibility after a change in personnel. The presentation goes further to outline the process/substance/relationship elements covered in the Why Negotiate module and how they apply in this setting. Other learning points demonstrate how the approach for answering questions before meeting might be used, including responding to comparative advantages/disadvantages of each party; alternatives to proposed negotiations; interests and concerns; determining the options; evaluating options; as well as looking at the influence of risk, other unknowns, and how they might be handled when preparing for the negotiation.

## 3.3 Preparing for Your Discussion

Expanding on the specific preparation questions asked in “*Questions to Answer before Meeting*,” this module focuses on how the negotiation itself can be made most comfortable and productive for both parties. It emphasizes goal setting, meeting logistics, and agreement on the negotiation process. In some ways, this module prompts the participant to “negotiate the negotiation.”

### 3.3.1 Module Motivation

Like “*Questions to Answer before Meeting*,” this module was motivated by questions from anxious, would-be negotiators and warnings about under-preparedness in the negotiation literature and popular press (e.g., Weiss 2014; Shonk 2020; Richards-Gustafson N.D.). The learning outcome for this module is that participants apply their knowledge gained in the “*Questions to Answer before Meeting*” module to develop a negotiation preparation plan.

### 3.3.2 Module Highlights

Lucy Pauley, coordinator of the Wyoming Agriculture and Natural Resource Mediation Program, offers a video presentation that re-emphasizes the need to prepare for negotiation meetings ahead of time to increase the chances of a preferred outcome. Challenges presented in this talk include thinking through the desired negotiation outcome; examining beliefs about what the other parties want from the negotiation; possible concessions for each party; BATNAs for each party; what may be included in the list of non-negotiables; the anticipated trajectory of the conversation; how offers will be presented; and the bottom line.

## 3.4 Understanding Frames and Reframing

This module addresses the two separate but distinct and related concepts of frames and biases in negotiation. Frames are mental shortcuts people use to help make sense of complex information. Frames and differences in perspective contribute much to differences in individual and group viewpoints, especially where there are divergent and incompatible interpretations of events. The presentation of frames helps participants understand how their frames of reference, as well as those of the other parties involved, influence contentious situations. The content then outlines the benefits of reframing and concludes by highlighting reframing as key to resolving conflict.

The second point of emphasis is biases in negotiation. Often individuals tend to be in favor of or against something due to preconceived biases. Many biases are often given little consideration as to how they influence our perspectives in a conflict. This presentation outlines many important biases, how they can shade our understanding of what is happening in a conflict, and it offers several strategies and suggestions for mitigating those influences to improve negotiation success.

### 3.4.1 Module Motivation

Reference frames and the corresponding skill of reframing are critical concepts for understanding the dynamics that arise in conflict situations. Biases are also foundational to our awareness of how we conceive of possible solutions, and how possible solutions may be understood by others. The desired learning outcome for this module is that participants compile a list of frames and biases relevant to an actual or plausible negotiation scenario and analyze how each may play a role in influencing discussions with the other party.

### 3.4.2 Module Highlights

This module contains two separate video presentations, one by Lucy Pauley, introduced earlier, and the other by John Hewlett, Ranch/Farm Management Extension Specialist in the Department of Agricultural and Applied Economics at the University of Wyoming. Hewlett addresses frames and reframing by covering: (1) a definition of frames of reference and how those influence perspectives in a negotiation; and (2) how alternative frames can help the parties involved understand their options, as well as their possible steps forward. The material also provides a basic overview of the steps for resolving conflict and how reframing is one technique for developing a new perspective on old problems.

The biases component, presented by Pauley, offers a definition of cognitive bias, discusses causes of bias, and signs to look for that may indicate biases are influencing a situation. The presentation then goes on to describe several different types of bias and alternatives for overcoming those biases in a negotiation setting. Examples of some of the biases addressed include anchoring bias, confirmation bias, negativity bias, status quo bias, and sunk cost bias, among many others.

## 3.5 Bargaining for a Better Market Outcome

This module addresses a common situation faced by many managers of agricultural enterprises negotiating prices. Concepts presented in the module materials include bargaining position; the influence of production risk, risk of not finding a buyer, approaches that may be used to bargain for a higher price, and other factors affecting the negotiation process. Key concepts discussed for improving the outcomes of price negotiation address forming a reservation price, developing a backup plan, setting a target price; collecting sound market information; and calculating breakeven cost of production, among others. The steps suggested to follow this preparation stage involve deciding on the offer price; allowing room to retreat from the first offer, while remaining focused on the target price; protecting against a first offer from the other party; and remaining willing to make more than a single counteroffer as the negotiation unfolds.

### 3.5.1 Module Motivation

The module is based on a backstory of John and Jane who own a ranch and are preparing to meet with a buyer the next day to sell their calves. Like many ranchers, John and Jane value the relationship they have with their current buyer and feel like there is little room to negotiate over the sale price. John is more comfortable with letting the buyer make the first move. This backstory is consistent with results of focus group interviews and experimental research with agricultural professionals. Research indicates that what John and Jane are currently doing does not put them in a position of bargaining strength and will likely result in them receiving a statistically lower sale price (Bastian, Jones et al. 2018; Bastian 2019).

In addition, research by Galinsky and Mussweiler (2001) suggests that making a first offer can anchor the negotiation and move the settlement price in favor of who makes that first offer. Moreover, bargaining experiments conducted by Bastian, Smutko et al. (2018) find that making the first offer and having a BATNA significantly improved seller outcomes compared to a base of not making the first offer or having a BATNA.

The learning objective for this module is that participants have an increased awareness and knowledge of the key concepts of price negotiation. Additional learning objectives include participants



apply these concepts and develop skills, such as calculating a breakeven price, and identify a reservation price.

### 3.5.2 Module Highlights

This module contains a video presentation by Dr. Christopher Bastian, Professor in the Department of Agricultural and Applied Economics at the University of Wyoming. The instructional presentation walks learners through the steps John and Jane should take to improve their bargaining position and market outcome. Specifically, the educational material emphasizes that John and Jane should set a reservation price, have a BATNA in mind in case the negotiation fails, and make the first offer in the negotiation.

## 4 Program Evaluation and Impacts

Statistics for clientele engagement from the module platform suggest encouraging results, despite the educational website and material only having been available for a short time. The website was established in the summer of 2020. The first NIA Guides were posted to the site in the fall of 2020. Web site visits totaled 876 for 2020 and 6,549 in 2021 (as of early December 2021). Unique visitors total 379 for 2020 and 1,812 in 2021. Downloads of the posted NIA 4-page guides total 780 over the period since the website was launched. Additionally, 13 users have accessed one or more of the NIA online modules, spending time viewing posted video presentations, contributing to module discussion forums, and accessing available learning assessments.

This information provides some indication that these materials fill a current void. Our website design and available content offer many opportunities for both educators and self-guided learners to expand their understanding of negotiation and improve their outcomes. Lucy Pauley (2021) supports this view and offers the following:

*“As the coordinator for the Wyoming Agriculture & Natural Resources Mediation Program, I work with agricultural producers who are involved in a wide variety of conflicts. When parties are unable to resolve conflicts on their own, sometimes they turn to mediation to help them work it out. Parties come to mediation for a variety of reasons, but the most common theme is the parties’ inability to communicate and negotiate together ... Having an online training resource like NIA will help me help parties prepare for the mediation process. When the modules include information on working through strong emotions, seeking common ground and developing win-win solutions, the parties will be better prepared to work together. In some cases, it may even eliminate the need for mediation if the parties are able to apply the skills and work the problem out themselves.”*

The long run evaluation plan includes several key short- and long-term assessment indicators for the two primary program audiences. Short-term indicators for Extension educators include the number or percentage of Extension educators/agents who increase their awareness, knowledge, and skills in interpersonal communications and negotiation; improve their ability to train farmers and ranchers using the gained knowledge and skills; and apply their obtained skills to facilitate discussions among members of their communities. Stakeholder indicators include the number or percentage of farmers and ranchers who increase their awareness, knowledge, and skills in interpersonal communications and negotiation and demonstrate increased ability to utilize the skills and knowledge gained. Farmer and rancher indicators also include increased confidence to engage with parties to reach agreements on issues related to their businesses, such as implementing negotiations for improved land lease agreements, issue resolution with neighbors, selling commodities, and planning farm succession or management changes with minimal conflict.

Achievement of learning objectives specified for each module as outlined in Section 3 above will also be evaluated for participants in the online modules. Key quantifiable indicators include the reported completion of module tasks, such as developing a negotiation plan, and demonstrated awareness of price bargaining strategies. Participants in the online curriculum are asked to register and provide contact information when they log in to the website for the first time. This information provides the opportunity to contact learners regarding any new educational information as it becomes available. Moreover, this allows us to further track participant engagement and conduct follow-up assessments to gather information on longer-term educational impacts and learner successes.

## 5 Discussion and Concluding Remarks

Current trends in agriculture suggest negotiation of both production and marketing contracts are increasingly important (MacDonald 2015), which means that agricultural managers are increasingly engaged in multiparty agreements. Requests and inquiries from Extension clientele indicate that those involved in commercial agriculture need educational information that helps navigate a number of situations requiring negotiation skills, including resource conflicts, land leases, and estate transition. Despite these growing needs, there has been little development of educational materials targeting agriculture. Our NIA website containing guides and self-study modules were designed with these needs in mind.

Our current set of materials cover several important topics in negotiation. However, our goal is to broaden the content offered. Ultimately, we would like to provide a wider range of negotiation material that recent research and our own needs assessment survey identified. The team is also interested in expanding the teaching modalities offered on the site to enrich the web-based learning experience. Plans also include more extensive marketing of the available material to both Extension educators/agents and classroom-based instructors offering agribusiness courses.

Evidence that our efforts to develop this program to date have been successful and plans for expansion are worth pursuing arrived in the spring of 2022 via notification of competitive grant funding. The grant funds will be used to implement a train-the-trainer program in which Extension educators/agents are trained in agricultural negotiations via both in-person and online education activities. Those trainees will then implement their own agricultural negotiation trainings for stakeholders in their communities.

This train-the-trainer program has two audiences. The first are the directly trained Extension educators/agents. The second are the agricultural stakeholders who receive training from the trainees. These materials provide Extension educators/agents opportunities to offer on-site training to clientele, as well as present relevant content in college classrooms. The guides may serve as references to supplement in-person presentations or lectures, or the recorded presentations can deliver content in class or online. Participants could access and utilize other features available on the website to deepen their knowledge, once the material has been introduced. Self-motivated learners can also address their needs by using the posted materials. Moreover, the opportunities to interact with other learners via web-based discussions could deepen any lessons learned.

Thus, successful execution of the planned program and associated increases in website demand will have positive impacts on Extension programming and agricultural business operation management in the coming years.

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**Note:** Primary authorship is shared by Bastian, Tejada, Hatzenbuehler, Fuller and Hewlett, and in no particular order.

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