

Extension Education

Can We Foster the Future of Extension through (Friendly) Competition? The Past, Present, and Future of the Graduate Student Extension Competition

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Abstract: The year 2022 is the 15th anniversary of the AAEA Graduate Student Extension Competition (GSEC). The GSEC provides an opportunity for applied economics MS and PhD students to develop Extension and/or outreach programs based on their graduate work, present their proposals to a group of outreach experts, and gain feedback. It also serves as an opportunity for networking, informal mentorship, and enhancing professional relationships and collaboration. This competition is one way to encourage applied economics graduate students to enter into Extension careers, or at least better inform them about those careers. We evaluate the competition and its outcomes for both student competitors and judges through historical information and survey data. We find that the GSEC enhances the ability of graduate students to translate research to lay audiences and can serve as a key pipeline for future Extension economists and others in outreach roles. This case study can be used to inform similar efforts for career education and mentorship efforts in Extension and outreach fields of economics.

1 Introduction

Formally, the Agricultural and Applied Economics Association (AAEA) Graduate Student Extension Competition (GSEC) invites MS and PhD students in agricultural economics and related fields to present an Extension or outreach program based on their graduate work. Informally, the competition serves as an entry point to Extension careers or other positions that involve outreach work by providing practice in communicating findings to general audiences as well as networking opportunities.

Despite nearly 15 years of hosting this friendly competition, the official record of whether the GSEC hits its target is limited. That is, while the Extension (EXT) Section and Graduate Student Section (GSS)—the two AAEA sections that co-sponsor the competition—recruit participants and judges, evaluate project proposals, and provide feedback to students, they do not observe final project outcomes nor competitors' career choices. More broadly, little is known about how academic Extension faculty, or others involved in outreach work, are educated about such careers.

Learning to provide effective Extension programming topics, methods of engagement, and responding to the changing needs of stakeholders and other clientele can be challenging for new hires. Extension teaching is diverse in its methods but in general, participants are adult and often “nontraditional” learners. Wedemeyer (1981) defined “nontraditional” learners as having some education obtained through a formal education system in addition to knowledge gained from learning activities that are outside of it. Providing relevant programming to these groups can require specialized expertise that is also typically not derived from traditional classroom learning. Moreover, Elliott-Engel et al. (2021) discuss the lack of diversity in the Extension workforce pipeline that has led Extension systems to require training in cross-cultural competencies. While calls for agricultural economics departments to include Extension in their graduate training have been made (e.g., Martin 2002), few programs offer anything formal. Faculty-student and peer-to-peer mentoring and networking can be particularly important pieces of training for new or soon-to-be Extension and outreach faculty and staff.

Challenges faced by new Extension hires are particularly important to address as Extension funding declines (Wang 2014), Extension positions are fewer, and those in the remaining positions must become more efficient. At the same time, agricultural Extension work, in particular, is important to the economic sustainability of the agriculture industry. For example, Alston et al. (2011) find that 7.3 percent of the annual agricultural productivity growth from 1949 to 2002 could be attributed to Extension, while Wang et al. (2012) find that Extension personnel density can yield increased benefits from public research and reduced production costs. In addition, Extension economists work on a wide range of societal issues and can play a vital role in enhancing the welfare of rural communities across the country.

We use survey data to evaluate the GSEC and consider how lessons learned can be applied to other ways of recruiting and supporting agricultural economics students interested in Extension and outreach careers. Specifically, we draw from a past survey administered by the GSS in 2021, combined with our own survey of past GSEC participants from 2011 to 2021 as well as competition judges from 2007 to 2021. We use these three survey data sets to understand the role of the GSEC within the Cooperative Extension community, to learn about the judge and participant experience, and to ask for feedback to improve future competitions.

By summarizing the foundation and evolution of the competition, reviewing the current state of the competition, and highlighting areas for improvement, we make three contributions to the agricultural economics profession. Primarily, we seek to improve upon the planning, organization, and execution of future GSECs. Using our survey data, we offer insights on ways to improve the recruitment of participants and judges, enhance evaluation and feedback mechanisms, and boost participant satisfaction. As such, this analysis may be used as a case study for other student competitions such as the AAEA Policy Communications Competition hosted by the GSS; the AAEA Case Study Competition co-sponsored by the Agribusiness Economics and Management (AEM) Section and GSS; and the AAEA Academic Bowl hosted by the Undergraduate Student Section. Second, we speak to the GSEC's contribution to graduate student interest in careers involving Extension or outreach. Over half of the past competitor respondents reported holding positions involving Extension or outreach, and most of the respondents stated they believe that the competition fostered an environment where they could improve upon their soft skills and believed the competition helped with job prospects. Last, we speak to areas where the competition could be improved and suggest endeavors to bolster networking and mentorship opportunities. These suggestions could be applied to other efforts to build the Extension and outreach career pipeline within the applied economics profession.

The remainder of this article is structured as follows. Section 2 provides background on the rules and logistics of the annual competition while Section 3 offers a glimpse into the competition's history, discussing its foundation and evolution as well as the commonly addressed research topics. In Section 4, we analyze the survey data from competition participants and judges from the past decade. Section 5 discusses the future of the GSEC by offering areas of improvement, and Section 6 concludes.

2 Background: Rules and Logistics of the Competition

After a call for applications has been distributed to AAEA members through a variety of communication channels, graduate students interested in participating in the GSEC must first submit a packet of materials to the GSEC Chair.¹ The packet includes a personal biography statement and a summary of the Extension/outreach program. Applicants are also required to identify an Extension "mentor," someone who has provided guidance on their Extension or outreach program or plans. This person does not need to have an Extension appointment but often does. The proposals are then sorted by a panel of five judges made up of AAEA professional members with Extension and/or outreach experience. Judges are recruited early in the calendar year at the discretion of the Chair. Preference is given to those who have served the year prior to keep judging consistent since the learning curve for judging can be steep. In

¹ Copies of the 2021 and 2022 GSEC calls for applications are included in the Appendix accompanying this manuscript.

addition to past GSEC judging participation, current criteria include representing a diversity of identities, Extension position types, and topic area expertise. These volunteers must have some familiarity with the Cooperative Extension system but come from different backgrounds and may not currently have an Extension appointment. Judges commit to reviewing applications to select ten finalists in the late Spring, attend a six- to seven-hour presentation session while at AAEA, and provide written feedback to competitors following the competition. Despite this time commitment, volunteers for judging often outnumber available spaces.

More recent competitions sort the top ten and invite those applicants to present their work at the AAEA Annual Meeting. Finalists typically present their program on the Sunday before the conference. They also have the opportunity to attend a networking luncheon held by the EXT section, at the expense of EXT. The competition typically begins with introductions of the judges, chair, and competitors, and a random drawing to establish presentation order. The presentations follow, each of which is fifteen minutes plus five minutes of questions from judges. Judges use a rubric provided by the Chair to keep score and take notes.² The Chair does not score participants. Finalists are permitted to view presentations that follow their own but not those that fall before their presentation. This way, later presenters do not have the advantage of seeing previous speakers' presentations and hearing questions from judges, which could allow them to make final adjustments to their slides or script before their presentation. Often, an adjacent room with refreshments is available for participants waiting for their turn to present. This room can serve as an informal networking opportunity. Once presentations are complete, the judges tally scores, and the top three places are decided. These competitors are typically notified at the AAEA Awards Ceremony or the EXT Luncheon and are required to be available to present in a track session devoted to competition winners. The top placeholder receives \$1,000 and a plaque; the second and third placeholders receive a certificate and \$300 and \$200, respectively.

Competitors are currently offered the opportunity to request feedback from judges after the conference is complete. Methods of reporting feedback have changed over time. Some years, an hour was set aside at the end of the competition to provide feedback; finalists could return to the competition room to receive verbal feedback from the judges. The verbal feedback was provided in broad terms to the general group about elements of the competition the judges felt had gone well and components that could use improvement. However, the on-site feedback has not been possible in all years as sometimes there are unavoidable delays in the competition agenda, such as longer-than-anticipated internal discussion among judges and other logistical issues. Currently, finalists can email the GSEC Chair to indicate their interest in receiving comments. The Chair compiles comments from judges, who are instructed to take notes that could be used to report back to students after the competition, and emails the notes to individual students.

3 The Past: History of the Extension Competition

We obtained the history of the competition from the minutes of the Extension Section meetings dating from 2004 to 2011 and personal recollections.³ The idea for the GSEC started several years before it was implemented in 2007. The EXT Section was committed to enhancing the visibility of graduate students interested in Extension work and collaborating with the AAEA GSS. Originally, the goal of the competition would "involve developing an Extension program based on the student's thesis or dissertation project" (Edwards 2004). The 2004 proposal sent to the AAEA Board proposed that the competition would start in 2006 and that it be categorized as an AAEA award. However, it took one extra year to materialize and was then categorized as an EXT Section award. The original committee that drafted the report included Larry Sanders, Don Ricks, Margot Rudstrom, Wendy Umberger, John Brandt, and Kamina Johnson. The

² A copy of the 2021 competition day scoring rubric is provided in the Appendix.

³ Meeting minutes of the Extension Section dating from 2004 to 2011 can be found at <https://www.aaea.org/membership/sections/extension/archive>.

committee that selected the graduate student who won the first award consisted of Larry Sanders, Margot Rudstrom, and Don Ricks.

The first GSEC took place in 2007 at the AAEA Annual Meeting in Portland, Oregon. The 2007 competition had eight finalists and nine judges. Many of the logistics of the competition as it is currently held were established that year, including narrowing the applicants down to finalists (originally eight, now 10) who are invited to present at AAEA and having the top three finalists present in a track session (Extension Section Minutes, 2007). The awards for the three winners were presented at the EXT Section Luncheon. The initial awards to the winners were \$500, \$300, and \$200 for first, second, and third place, respectively, and the funds were provided by the Farm Foundation. The first winner of the GSEC was Tonya Hansen from the University of Minnesota. Tonya Hansen went on to a faculty position, became a judge for the 2010 competition, and continued to be involved in the GSEC for many years.

In 2008, Jim Novack chaired the competition for the 2009 AAEA Meeting in Milwaukee, Wisconsin. That year, leadership decided that all finalists would receive a certificate. In 2009, Margot Rudstrom and Frayne Olson led the GSEC for the 2010 AAEA Meeting in Denver, Colorado. The first-place award was increased to \$1,000. The chairs also attempted to expand the geographic representation of participants and the topical representation of judges. Margot Rudstrom continued to chair the GSEC for EXT from 2010 to 2013. As of 2010, the winners of the GSEC began to be officially recognized at the AAEA Awards Ceremony, a practice that continues to this day. Maria Marshall chaired the GSEC from 2014 to 2017, when Kate Fuller took over and is the current Chair.

Throughout the history of the competition, proposal topics have ranged widely. Figure 1 highlights common themes of student presentations over the past decade of presentations, where the size of the font corresponds with its frequency.⁴ As anticipated, topics related to food and agriculture are common throughout, and there is a general theme toward assisting producers with on-farm finance as well as product marketing. Specific applications include cattle production, specialty crop production, local food system development, and farm finance; several students also focused on rural development.

Over time, the number of applicants has varied substantially, with a general upward trend. Earlier years tended to have fewer applicants than total allowable finalists (i.e., those invited to present at AAEA) while more recent years have seen more than ten applicants in each year, including in 2020 when AAEA was held entirely virtually. Some of the participation growth over time may be attributed to increased awareness about the competition within AAEA and in graduate student circles from listservs and promotion by AAEA in their newsletter. Recent invitations to apply from the current Chair (Fuller) have stressed both the cash prizes and the friendly nature of the competition, placing it in contrast to recent findings of the harshness of economics seminars, particularly for women and minorities (e.g., Dupas et al. 2021). One mechanism to spread information regarding the competition is from past competitors to their current students, as many mentors in recent years were competitors in the competition's early years. However, much remains unknown about how competitors learn of the competition and how they decide to apply. We explore these questions through our surveys and survey data.

⁴ To construct this word cloud, we used the students' presentation titles. As the titles are composed of many common words, such as "the," "as," etc., we collapse titles to a series of keywords. We then used the Pro Word Cloud add-in in Microsoft Word to construct a word cloud with the 75 most commonly referenced keywords.



Figure 1. Word Cloud Featuring Common Extension Competition Presentation Themes, 2011—2021 (data not available for 2012; $n = 81$ presentation titles)

4 The Present: Understanding the Current State of the Extension Competition through Survey Data

To improve the planning, organization, and execution of the annual GSEC, we constructed a series of surveys targeting different groups of competition participants. The first survey was distributed to 2021 GSEC participants approximately one month following the competition. The second survey was distributed to past GSEC participants dating to 2011. Finally, for an alternative perspective, we surveyed individuals that have served as judges for the GSEC from 2007 to 2021.⁵ The second and third surveys were distributed in the Fall of 2021.

The three surveys were constructed using Qualtrics and distributed by email. Prior to the survey, respondents were informed that: (i) competition organizers were seeking to improve the functionality and efficiency of the annual event; (ii) their responses would remain anonymous; (iii) the feedback would allow us to improve future competitions to meet the expectations of members; and (iv) the survey would take approximately five to ten minutes to complete. Each survey received IRB approval from Montana State University (IRB Exempt Protocol #KF111821-EX), and the survey instruments used in our analysis are available as supplemental material accompanying this manuscript. The key results of each survey are described in turn.

4.1 2021 Participants

The 2021 GSEC took place on August 1, 2021, at the AAEA Annual Meeting. To accommodate both graduate students and judges that were unable or did not desire to attend the conference in person, a

⁵ We lack competitor information for the year 2012, except for those participants listed on the AAEA GSEC webpage. We recovered competitor email addresses through past applications and through Google searches (e.g., “competitor name” + “economics”). We have complete judge information from 2014 to 2021. We also contacted several judges who participated in years prior to 2014 identified by EXT section minutes and personal recollections. Chairs were not surveyed.

hybrid format was used. Both judges and graduate student competitors were offered the option to participate in person or virtually. Most students (8/10) opted for in-person, while most judges (4/5) participated virtually. For those attending in person, the competition went largely as usual. Those participating virtually presented earlier in the week.

As a part of a larger effort by the GSS to improve graduate student annual competitions held at AAEA, 2021 GSS leadership surveyed GSEC participants. Following the competition, participants received an invitation to respond to the Qualtrics survey, and survey data were collected from September 13, 2021, to September 17, 2021. They were asked about their level of (dis-) satisfaction with various components of the competition and were asked to provide written feedback on how the organizers could improve the competition moving forward. Specifically, respondents were asked to rate their level of satisfaction or dissatisfaction—ranging from *extremely dissatisfied* to *extremely satisfied*—with the following components: (i) competition planning; (ii) competition execution; (iii) rules and procedures; (iv) feedback from judges; (v) monetary prize; (vi) award distribution; and (vii) communication.

Of the ten finalists, six completed the survey. On average, participants showed a general level of satisfaction with each component of the competition (see Appendix Table A.1). After completing the Likert questions, respondents were asked to provide open-ended feedback on the various aspects of the competition, and a few themes emerged. First, related to the logistics and execution of the competition, participants found it beneficial to have all communication and correspondence coming from one individual (i.e., the GSEC Chair) and thought the hybrid nature of the competition was well-organized. Second, respondents provided mixed feedback on the rules and procedures of the competition. While one competitor found the rules and criteria to be clear, others felt that the level of research required must be specified in the call for applicants. In other words, participants felt that the current guidelines invite proposals that are at different project stages: some projects are more developed with tangible output while others are in the early stages. Competitors felt that these differences make it difficult to judge across presentations. Third, participants felt that they received the feedback fairly quickly, which competitors appreciated. However, respondents also thought that there was significant variability in the usefulness of comments, where some judges left thorough and helpful comments and others left broad feedback. Finally, prize communication and distribution were the most criticized components of the GSEC. Prizes, which include a plaque and check for the first-place winner as well as a certificate and check for the second- and third-place winners, had taken longer to distribute than participants would like.

To summarize, competitors found it beneficial to have one individual that communicated with the teams and responded to questions efficiently. Competitors also thought that the competition ran smoothly, and they appreciated the feedback from judges. The two primary complaints were: (i) lack of clarity on the grading rubric regarding the level of research required to compete; and (ii) prize distribution.

We also asked respondents how likely or unlikely (based on a five-point Likert scale) they are to compete in a GSS-sponsored competition next year as well as how likely they are to recommend a GSS-sponsored competition to a peer. Concerning an individual's likelihood to participate in a GSS-sponsored competition next year, three of six respondents stated they are somewhat likely to compete, while the remaining respondents stated they were somewhat or extremely unlikely to compete or are no longer eligible to compete (i.e., would graduate before the 2022 GSEC). As for the likelihood of recommending a GSS-sponsored competition to a peer, five of six respondents stated that they were somewhat likely or extremely likely to recommend a competition to a peer.

4.2. Past Participants (2011–2021)

Responses from the GSS survey of 2021 participants prompted the authors to explore further into the reaches of the history of the competition. The GSS survey highlighted areas for improvement but also demonstrate a general level of satisfaction among participants. We were interested in how those perceptions have changed over time. We were also interested in learning how the competition has

evolved as a networking institution within AAEA for those in, or interested in, Extension and outreach careers; we needed to look farther back into competition history.

For the purposes of this article, a separate survey was distributed to 70 past finalists from the years 2011 to 2021 on November 19, 2021, and a reminder email was sent on November 30, 2021. Data collection concluded on December 3, 2021, and in total, 26 participants completed the survey, a response rate of 37 percent. The data are likely subject to self-selection, which could bias the results presented below (Bethlehem 2010).⁶ Nonetheless, surveying and understanding the perspectives of past participants serves as a way to understand the benefits and outcomes generated by the competition while also identifying areas for improvement. Table 1 presents the demographics and additional characteristics of the sample.

The majority of our sample identified as female (73 percent), and the majority of participants (81 percent) were domestic students at the time they competed in the competition. Approximately 70 percent of respondents were PhD students when they competed in the competition while the remaining 30 percent were master's students. The majority of respondents only participated in the competition once, with three individuals (12 percent) competing in multiple GSECs.

We also asked respondents to recall how they initially heard about the competition. Here, they were presented with a list of four communication channels commonly used to disseminate promotional material and an option for *other*, in which they could write in their response (Table 1). Participants were encouraged to select all channels that applied. The overwhelming majority of respondents recall hearing about the competition from a faculty member (77 percent)—likely their advisor or committee member—with the next most popular channels being the EXT Section's email listserv (19 percent) and GSS's email listserv (19 percent). This statistic highlights the reliance on faculty and staff to share opportunities with their students, while simultaneously indicating the need to improve communication efficiency across a diverse set of communication channels.

Respondents were also asked to list their current professional status and indicate whether their current position involves Extension or outreach. Of the 26 past competitors to complete the survey, 42 percent report now being a professor or faculty member, 12 percent report being a governmental employee, and 12 percent are involved in industry. The remaining respondents are still graduate students. When asking the respondents whether their current position involves Extension or outreach, over half of the respondents (58 percent) stated that it does.

We cannot say whether the competition provides a pipeline into academic and/or Extension positions or if those already interested in such work are more likely to participate. However, understanding the outcomes generated by the competition for the participants can lend insight into these questions. By asking past participants about the outcomes that were generated from their competition project proposals, we can also improve future promotional material and cater feedback to meet these goals. In the survey, respondents were provided with a list of five project outcomes as well as an option to write in any additional outcomes, and they were informed to select all outcomes that applied. The listed outcomes include: (i) Extension presentations; (ii) Extension publications; (iii) peer-reviewed publications; (iv) student-to-faculty networking; and (v) student-to-student networking. Figure 2 reports the frequency of each outcome.

⁶ The direction of the potential bias is unclear. It could be possible that individuals who had better experiences with the competition (i.e., placed well in the competition and received a monetary prize and certificate/plaque) were more likely to complete the survey. However, it is also possible that students who had negative experiences were more likely to participate so they could voice their concerns, as well.

Table 1. Demographics and Characteristics from the Sample of Past Competitors

Variable	% of Respondents (<i>n</i> = 26)
<i>Gender</i>	
Female	73.1%
Male	26.9%
All other gender categories	0.0%
<i>Race</i>	
Asian	11.5%
Black or African American	7.7%
White	84.6%
All other race categories	0.0%
<i>Ethnicity</i>	
Hispanic or Latino/Latinx	7.7%
Not Hispanic nor Latino/Latinx	92.3%
<i>Domestic or international</i>	
Domestic	80.8%
International	19.2%
<i>Participation frequency</i>	
Once	88.5%
Two or more times	11.5%
<i>Degree objective at time of participation</i>	
MS	30.8%
PhD	69.2%
Other	0.0%
<i>Hear of competition (select all that apply)</i>	
EXT Section email listserv	19.2%
Faculty member (e.g., advisor)	76.9%
GSS email listserv	19.2%
Peer	7.7%
Other	3.8%
<i>Current professional status</i>	
Government employee	11.5%
Graduate student	34.6%
Industry member	11.5%
Professor/faculty member	42.3%
Other	0.0%
<i>Does current position involve Extension?</i>	
No	42.3%
Yes	57.7%

The most commonly reported outcome was student-to-faculty networking (62 percent), where finalists developed a professional relationship with participating faculty at or following the competition. Indeed, at least one past participant—now a professor—reported collaborating on projects with judges from their competition. Relatedly, several other participants indicated the benefit that the competition had on their job prospects because of the networking. Participants commonly cited competition participation as a CV booster and signal of interest in Extension work to potential employers while others reported that competition participation—and more specifically, winning the competition—may have contributed to job offers. Several respondents stated that conveying their Extension proposal and

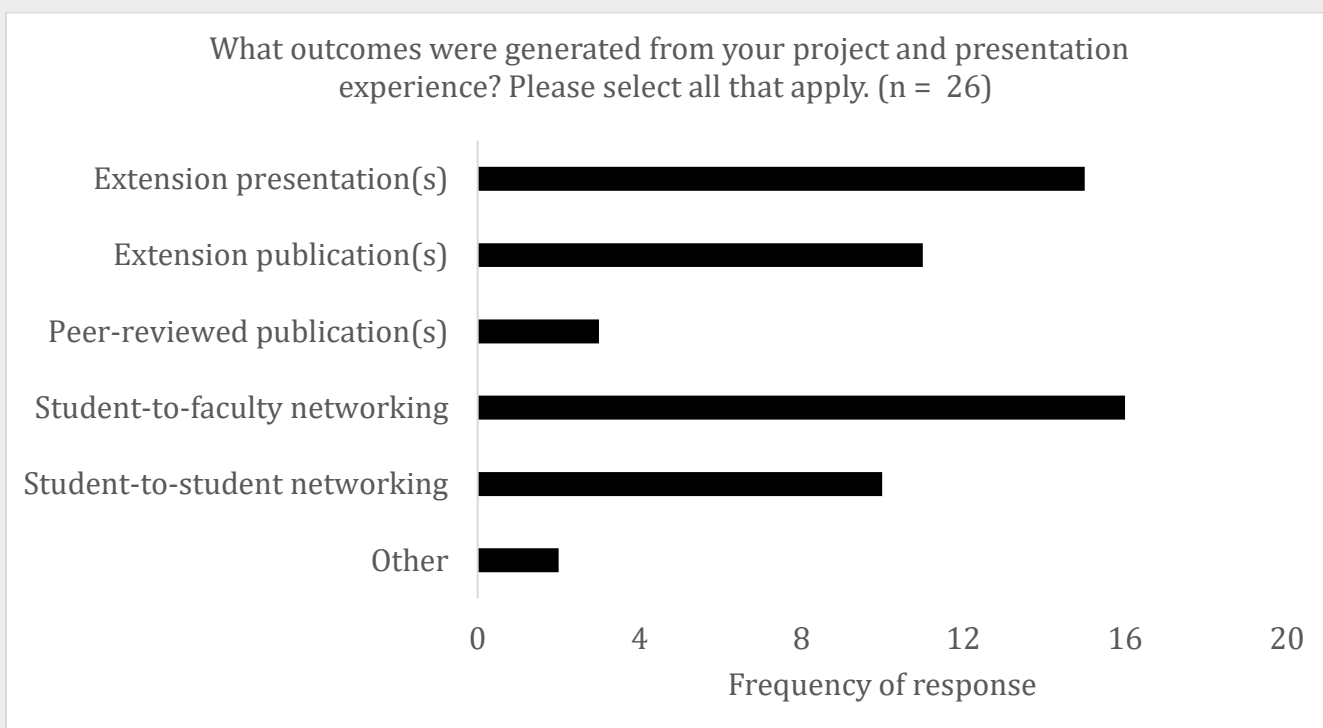


Figure 2. Outcomes Generated from the Participant's Extension Proposal

describing results to a panel of experts helped in their job interviews and could have influenced the position they hold today. Another respondent explicitly mentioned judges reaching out after the competition to discuss Extension openings at their university. Outside of student-to-faculty networking, the next most common outcomes were Extension presentations (58 percent) and Extension publications (42 percent).⁷ These findings suggest that the competition can lay a pathway to Extension careers and professional networks.

Respondents were next asked about whether the competition helped improve a variety of soft skills, or traits and abilities that characterize interpersonal relationships such as communication, critical thinking, and leadership. A list of 11 soft skills, selected based on group discussion by the authors, was presented to the respondent. There, respondents were asked to indicate on a five-point scale ranging from *definitely not* to *definitely yes* whether they believe the competition helped improve the respective soft skill. Table 2 reports the findings, where communication, confidence, creativity, and receiving (constructive) criticism are viewed as the soft skills most improved by participation in the competition.

When we asked for open-ended feedback later in the survey, several respondents indirectly referenced soft skills that they improved through the competition. For instance, multiple respondents indicated that presenting their Extension-style talk in front of a group of experts was beneficial for their communication skills and confidence. Given that Extension talks are tailored to a lay (non-economist) audience, graduate students must learn different methods for conveying sometimes complex economics research and modify their communication to disseminate their information to adult learners from various backgrounds. The past participants believed that the written, verbal, and visual communication required for participation in the GSEC was beneficial, and several participants reported this experience to be useful to them today. Additionally, one individual reported having an interest in Extension research while working with a faculty advisor that did not have an Extension appointment. The competitor viewed

⁷ Notably, Hannah Shear (2020) reviews the experience of preparing a program, competing, and winning the 2020 GSEC in a 2020 commentary published in *AETR*.

Table 2. Soft Skills Fostered by the Extension Competition as Reported by Competitors

Soft Skill	% of Participants (n = 26)				
	Definitely Not	Probably Not	Neutral	Probably Yes	Definitely Yes
Active listening	0.0	7.7	38.5	30.8	23.1
Communication	0.0	3.8	15.4	26.9	53.8
Confidence	0.0	0.0	19.2	38.5	42.3
Creativity	0.0	3.8	15.4	38.5	42.3
Critical thinking	0.0	3.8	19.2	42.3	34.6
Leadership	0.0	19.2	30.8	30.8	19.2
Persuasion	0.0	7.7	34.6	26.9	30.8
Problem solving	0.0	3.8	23.1	50.0	23.1
Receiving criticism	0.0	0.0	26.9	30.8	42.3
Resilience	0.0	3.8	30.8	50.0	15.4
Time management	0.0	15.4	34.6	30.8	19.2

the competition as a way to force themselves to think critically and creatively, developing an Extension plan that was ultimately used in their dissertation. Research question development and project planning are two key soft skills for those interested in a career in research, and it appears that the GSEC is fostering an environment for graduate students to hone these skills.

To improve the planning and execution of future competitions, we asked the respondents about their level of satisfaction or dissatisfaction with various components of the competition. Divided into seven components, respondents indicated their response on a five-point scale ranging from *extremely unsatisfied* to *extremely satisfied*. Response rates vary by question, ranging from 22 to 26 responses per competition component.⁸ Table 3 summarizes the satisfaction and dissatisfaction levels of our sample.

Table 3. Level of Satisfaction or Dissatisfaction with Various Components of the Competition by Student Competitors

Competition Component	n	% of Respondents				
		Extremely Unsatisfied	Somewhat Unsatisfied	Neither Satisfied Nor Unsatisfied	Somewhat Satisfied	Extremely Satisfied
Competition planning	25	0.0	0.0	8.0	40.0	52.0
Competition execution	26	0.0	0.0	3.8	34.6	61.5
Rules and procedures	25	0.0	4.0	8.0	36.0	52.0
Feedback from judges	26	0.0	7.7	7.7	42.3	42.3
Monetary prize	22	0.0	0.0	4.5	27.3	68.2
Award distribution	23	0.0	0.0	8.7	30.4	60.9
Communication	25	0.0	4.0	4.0	40.0	52.0

⁸ The variation in response rates may be driven by two factors. First, it could be driven by insufficient recall given the duration of time since some competitors have competed. Second, it may be driven by the irrelevance of the component in question. That is, a given component may not be pertinent to the competitor. For example, only three competitors each year receive an award. Therefore, the component *award distribution* may not be applicable to some of the participants.

Overall, respondents reported a general level of satisfaction for each component of the competition. The monetary prize for the top three winners is favored by respondents and likely serves as an incentive for graduate students to participate. The segments of the competition that require more attention moving forward are (i) feedback from judges, (ii) the competition rules and procedures, and (iii) general communication; these were the only three segments of the competition where a past participant stated a level of *somewhat unsatisfied*. Using the open-ended feedback as a way to improve future competitions, respondents recommend (i) having a system in place to ensure they receive feedback promptly; (ii) clarifying the stated objectives of the Extension proposal; and (iii) improving communication about eligibility criteria with a consistent year-to-year rubric.

4.3. Judges

We were also interested in learning about the competition from the judges' perspective and exploring methods to improve the judging experience. Thus, a third survey was sent to past judges of the GSEC. The survey was distributed by email to 17 judges that have served in any of the competitions between 2007 and 2021, and data collection coincided with that of past participants (November 19, 2021, to December 3, 2021). Nine judges responded to the survey (a 53 percent response rate). Over half of the responding past judges identified as white and male. Judges identifying as Asian, Black, and Hispanic were not well-represented among the respondents, suggesting there is room for improvement in judge diversity.⁹ Nearly equal numbers of judge respondents pursued their graduate studies as international students as those that did so with domestic student status. Most judges reported having more than 10 years of experience in the profession; two judges had 10 or fewer years of experience. In addition, all respondents had participated as a judge in at least two competitions, with the majority reporting that they had participated more than three times. Likewise, six out of eight respondents indicated their willingness to serve again as a judge in a future GSEC. Demographics of the respondent judges are presented in Table 4.

Table 4. Judge Demographics and Other Characteristics

Variable	# of Respondents (<i>n</i> = 9)
<i>Gender</i>	
Female	4
Male	5
All other gender categories	0
<i>Ethnicity</i>	
Hispanic or Latino/Latinx	1
Not Hispanic or Latino/Latinx	8
<i>Race</i>	
Asian	2
Black or African American	1
White	6
All other race categories	0
<i>Status when attending graduate school</i>	
Domestic	4
International	5
<i>Years as an applied economist</i>	
10 or less	2
11 to 20	4
21 to 30	1
30 or more	2

⁹ It may be useful to note that in recent years, judge competition has become more diverse. In 2021, over half of judges were women and over half were nonwhite.

The aspects of the competition addressed in the survey included the quality of the students' proposals, the competition schedule, the grading rubric and process of selecting winners, and the involvement of mentors. Additionally, judges were asked about the expectations for the judging commitment, guidance on the judging process, and networking opportunities. These questions on judges' perceptions of the competition were mostly presented using a five-point Likert scale ranging from *strongly disagree* to *strongly agree* and were complemented with open-ended questions where judges could provide comments, suggestions, or recommendations about the competition components. The feedback received from the judges was mostly positive. However, one respondent reported a negative perception for each of the aspects evaluated. Provided that no negative comments, responses, or suggestions accompanied that response, it is difficult to infer whether the respondent misinterpreted the Likert scale or simply did not have a pleasant experience with the competition. A summary of the survey results is presented in Table 5.

Table 5. Judges' Perceptions about Various Aspects of the Competition ($n = 9$)

Question	Strongly Disagree	Somewhat Disagree	Neither		Strongly Agree
			Agree nor Disagree	Somewhat Agree	
The proposals submitted by students were creative and well-thought-out	1	0	0	4	4
The schedule for the competition was appropriate	1	1	0	0	7
The grading rubric provided an effective tool for evaluating submissions and presentations	1	0	1	1	6
The selection process for choosing the competition winners was fair and objective	1	0	0	2	6
Mentors seem to be actively involved in student proposals to the competition	1	0	1	7	0
Expectations regarding the judging commitment were clear	1	0	0	2	6
Sufficient guidance was provided on the judging process	1	0	1	1	6
Serving as a judge has provided networking opportunities for me	1	0	0	1	7
Based on my previous experience(s) as a judge, I would be interested in serving as a judge again ^a	1	0	1	1	5

^a One judge did not respond to this statement ($n = 8$).

When asked about the quality of student proposals, judges generally agreed that students submitted high-quality proposals. Four respondents strongly agreed that proposals were creative and well-thought-out, while the other four somewhat agreed with that statement. Even though proposals are expected to be submitted by the students, the responses from the judges indicate that mentor involvement in the proposals could be improved. Most of the respondents (seven out of nine) somewhat agreed that mentors seem to be actively involved in the proposals for the competition; one neither agreed nor disagreed, and one strongly disagreed.

As 10 proposals and presentations need to be evaluated in the final round of the competition, and time is limited during the day of the competition, judges were asked about the logistics and the schedule of the competition. Most of the respondents (seven out of nine) strongly agreed that the schedule for the competition is appropriate. Respondents' suggestions and comments on competition logistics focused on the starting time of the competition, the competition timeline, and the need for a semi-final round prior to the final competition. Adjusting the starting time of the competition could offer some flexibility on the arrival time of the judges, as many may travel late the day prior. A semi-final round prior to the finals, perhaps held by regional associations, could offer some flexibility to the competition. Another suggestion referred to the possibility of viewing the presentation slides ahead of time so the judges could study them in advance.

As judges devote their time and expertise to the competition, it is relevant to learn whether the expectations and guidelines are clear for them while serving the competition. The first question on this topic is related to expectations for the judging commitment. The majority of respondents (six out of nine) strongly agreed that expectations regarding the commitment were clear; two indicated they somewhat agreed with that statement. A similar pattern was observed for the guidance on the judging process. Here, six respondents strongly agreed that there was sufficient guidance, while the other two either somewhat agreed with the statement or were indifferent. Even though most of the feedback on these two areas was very positive, there are some opportunities for improvement. These could be handled through increased email communication from the Chair to the judges or by holding meetings before the competition.

Judges recognized the communication efforts of the competition organizers but suggested that better engagement was needed from the members of the EXT section on the distribution of the GSEC application information through their campuses. Respondents also suggested past competitors and mentors as potential sources to echo the call for proposals and to increase participation.

We asked two questions about the guidelines for proposal evaluation, the scoring rubric, and the fairness of the selection of winners. Six out of nine respondents strongly agreed that the current rubric was an effective tool for evaluating submissions and presentations. One judge strongly disagreed, and the other two either somewhat agreed or were indifferent, indicating that the scoring rubric could use improvement. A similar pattern was also observed for the perception of the selection process of winners as fair and objective.

Suggestions for the evaluation of proposals focused on: (i) handling conflict of interests; (ii) flexibility on the rubric criteria; and (iii) strategies to evaluate the proposal. Conflict of interest between a judge and a student competitor arises when the judge is either the mentor of the student or has worked with the student. Currently, this conflict is handled by the judge not submitting scores for that student's proposal. Even though this strategy prevents a judge from directly affecting the score of the student, it can affect scoring indirectly. The overall score from each judge is subjective and submitted independently of other judges. As some judges may offer generally higher scores than others, some student competitors may have an advantage (or disadvantage) if the judge with whom there is a conflict of interest scores lower (or higher) than others on average.

Judges had several suggestions surrounding the scoring rubric. Sharing strategies for approaching the rubric prior to the competition could help judges form a consensus on how to evaluate the proposals. More flexibility on the rubric is needed as different Extension programs have components that are not included in the rubric. Respondents also offered some additional insights on what criteria must be

included or tested in the rubric. One judge suggested placing a larger weight on identifying the target audience, recognizing the actual or anticipated benefits the audience will receive from the program, and emphasizing the timeliness of the project. Another judge suggested that the content of the outreach materials be included as requisite as well as providing a score in the rubric for previously delivered materials versus hypothetical materials.

In conclusion, judges reported considering the GSEC to be a useful event that needs to continue. Judges stated that the competition allows graduate students to (i) demonstrate Extension and outreach competency; (ii) become a part of the Extension community; and (iii) gain connections through networking.

5 The Future: Fostering Friendly Competition

There is always room for improvement, and we highlight three areas of the competition that can be improved to enhance participant experience and increase awareness of the annual competition, including: (i) promoting the event; (ii) competition scoring consistency and research specificity; and (iii) prize distribution.

One component of the competition to refine is the recruitment process and promotional content to capture a more diverse set of competitors. Historically, the recruitment of competitors has come from listserv emails and word-of-mouth. Indeed, former participants have served as faculty advisors on more recent presentations, which is evidence of the reliance on word-of-mouth in addition to our survey finding that approximately 75 percent of respondents heard of the competition from their faculty advisor. Given the significant turnover in GSS membership, the listserv must be consistently updated to account for new membership. One shortcoming to the GSS listserv is that graduate students may choose not to become an AAEA member until they attend their first annual conference. Without membership in AAEA, the graduate student cannot be a member of EXT or GSS, and so they will not receive listserv emails regarding the competition. Thus, we encourage faculty to share AAEA listserv emails with their department's graduate students, and we also suggest that competition organizers diversify their promotional content. One way to do so is through sharing materials on Twitter or other social media platforms. Several AAEA sections have professional Twitter accounts (e.g., @AAEA_GSS for the GSS; @CWAE_AAEA for the Committee for Women in Agricultural Economics) where they share promotional content, highlight members, and communicate information about upcoming events. By sharing the call for applicants on social media platforms, we would enable peers and colleagues to share this content with their network and could increase awareness of the competition.

A second area that we hope to enhance is the development of consistent grading rubrics to score initial applications and presentations. Creating an improved scoring rubric that incorporates the central features of an Extension/outreach project plan will be a core task of the organizers before the 2022 GSEC. To achieve this objective, we will incorporate the feedback we have received from past judges in our recent survey. Specifically, we have drafted and shared a rubric to assist judges in selecting finalists from the pool of applicants and added clarification on the importance of mentor participation in the existing rubric.¹⁰ The finalized grading rubrics will be shared with the call for competitor applications, allowing participants access to the scoring criteria months before the competition takes place. In doing so, participants will have a better understanding of the scoring criteria, which should in turn improve the competition experience for presenters, judges, and organizers. We have also suggested a weighting mechanism to correct for differences in the composition of judges due to conflict-of-interest-based scoring abstentions.

Next, a streamlined process to distribute competition prizes (i.e., plaques, certificates, and checks) is required. Based on the authors' email correspondence with past competition winners as well as the

¹⁰ Both rubrics are included in the Appendix. The new rubric for selecting finalists appears as part of the 2022 call for applications; the competition day rubric stands alone.

survey feedback presented above, prizes have taken longer to distribute than participants expect. Competition organizers must work in conjunction with the AAEA Business Office *ex ante* and *ex post* to ensure a smooth distribution of awards. By working with competition winners and the Business Office, we will better understand the needs of each party and seek to increase the efficiency of the award distribution process.

6 Conclusion

The GSEC provides an outlet for graduate students to demonstrate how they have or would present their research to an Extension audience. It also provides an opportunity for prospective Extension candidates, established Extension faculty, and others in outreach positions, to connect. The objective of this article was to reveal whether the goals of the competition are being met and to describe what could be done to improve the experience and outcomes for students who participate. This is the first time in the 15-year history of the GSEC that the goals and impact of the competition have been evaluated.

A series of surveys targeting GSEC participants and judges were conducted to (i) improve the planning, organization, and execution of the competition and (ii) determine the impact of the competition. We found that students and judges were predominantly satisfied with the competition. Students stated that not only did the competition improve their soft skills but that it also led to increased student-faculty networking. Finalists and competition winners stated that the competition led to job opportunities. The GSEC judges felt that proposals and presentations were of high quality and concurred with students that the competition provided opportunities to network. Thus, it seems that the GSEC is achieving its goals.

However, there is room for improvement. Three areas of the competition that can enhance participant experience and increase awareness of the annual competition include: (i) promotional content of the event; (ii) competition scoring rubric consistency and specificity; and (iii) prize distribution. Timing was an issue for both students and judges. Students wanted more prompt feedback and for awards to be distributed more quickly, while judges wanted the timing of the competition to be streamlined.

Overwhelmingly, students stated that they learned about the competition from a faculty member. It is important to market the competition to all potentially interested faculty and to improve communication through graduate student outlets to enhance the diversity of proposal topics and prospective Extension faculty. If the competition can be considered as a pipeline to future academic positions, then GSEC should be marketed broadly to applied economic associations and beyond existing Extension networks.

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References

- Alston, J., M. Anderson, J. James, and P. Pardey. 2011. "The Economic Returns to U.S. Public Agricultural Research." *American Journal of Agricultural Economics* 93:1257–1277.
- Bethlehem, J. 2010. "Selection Bias in Web Surveys." *International Statistical Review* 78(2):161–188. doi.org/10.1111/j.1751-5823.2010.00112.x.
- Dupas, P., A.S. Modestino, M. Niederle, J. Wolfers, and the Seminar Dynamics Collective. 2021. "Gender and the Dynamics of Economics Seminars." NBER Working Paper 28494. <https://www.nber.org/papers/w28494>.
- Edwards, W. 2004. "2004 Minutes of the Executive Committee of the Extension Section." https://www.aaea.org/UserFiles/sections/extension/communications/minutes/Minutes_2004.pdf.
- Elliott-Engel, J., D. Westfall-Rudd, M. Seibel, E. Kaufman, and R. Radhakrishna. 2021. "Extension Administrators' Perspectives on Employee Competencies and Characteristics." *The Journal of Extension* 59(3), Article 3. <https://doi.org/10.34068/joe.59.03.03>.
- Martin, M. 2002. "The Roles of Extension in Agricultural Economics Departments." *Journal of Extension* 40(5).
- Shear, H. 2020. "A Commentary on Extension Education Programming: An Overview of the CattleTrace Extension Program and Graduate Extension Education." *Applied Economics Teaching Resources* 2(4):57–62. doi.org/10.22004/ag.econ.307150.
- Wang, S.L. 2014. "Cooperative Extension System: Trends and Economic Impacts on U.S. Agriculture." *Choices* 29(1):1–8.
- Wang, S.L., E. Ball, L. Fulginiti, and A. Plastina. 2012. "Accounting for the Impacts of Public Research, R&D Spill-ins, Extension, and Roads in U.S. Agricultural Productivity Growth." In *Agricultural Productivity: An International Perspective*, edited by K.O. Fuglie, S.L. Wang, and V.E. Ball, 13 – 31. Boston, MA: CAB International. Available at: <https://onlinelibrary.wiley.com/pb-assets/AJAE%20Author%20Checklist%20Revised%20March%202020-1590686228903.pdf>.
- Wedemeyer, C.A. 1981. *Learning at the Back Door: Reflections on Non-Traditional Learning in the Lifespan*. Madison, WI: The University of Wisconsin Press.