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# Guiding the Next Generation of Extension Professionals: There’s a Method to the Madness

David R. Coyle and Erin W. Hodgson

“What would you say...ya do here?” Bob Slydell, *Office Space* (1999)

**T**he life of extension faculty is one of variety and creativity. To students, it may seem like extension faculty are never around. Their doors are usually closed, and even when they’re open, there’s a good chance no one is there. It’s almost like they’re ghosts. But their names are on papers and posters, they’re at meetings or the occasional departmental event, and sometimes you might even see them on TV, hear them on the radio, or read about them in the paper or on the internet (in a good way). Some of them have graduate students, so they obviously exist, but why are they always gone? And what do they do with their time?

Teaching, research, and extension are the three pillars of the U.S. land-grant university system. Teaching and research are undoubtedly the most well-known aspects of academia, yet all three are equally critical (and sometimes mandated!). Extension faculty may or may not have a split appointment with research and/or teaching. Extension makes research usable to stakeholders. To that end, effective extension is all about communication. But how does one learn how to successfully communicate

with a broad spectrum of people? And what can we do to prepare the next generation of extension professionals?

## A Brief History of Extension

To many people, Justin Smith Morrill is anything but a household name, but to those working in extension, he and Abraham Lincoln could be considered the people responsible for our jobs. Morrill, a congressman from Vermont, sponsored the Morrill Act of 1862, a bill that created the land-grant university system, and President Lincoln signed this bill into law. A second Morrill Act in 1890 was aimed at the former Confederate states and fostered the creation of many historically Black colleges and universities. Over a century later, the 1994 Equity in Educational Land-Grant Status Act designated several tribal colleges and universities as land-grant institutions. Together, these three acts formed the modern-day land-grant system, of which extension is one of three major components (Croft 2019).

In 1922, W. A. Lloyd created a creed for extension professionals that many of us feel strongly about when spending nights



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and weekends on the road. One of the most important phrases from that document includes, “I believe that education is a life-long process, and the greatest university is the home” (Bliss et al. 1952). Truly, those in extension benefit from engagement with our audiences and don’t consider our job as a unidirectional flow of information.

### How Can We Help Train the Next Generation of Extension Professionals?

Extension is an amazing career. Granted, we might be a bit biased, but the satisfaction we gain from directly helping people solve their problems is extremely rewarding. We hope this roadmap will help provide better tools to facilitate communication and offer the next generation of extension professionals a path forward.

There are several aspects of extension that might not be innate but can be learned and enhanced with practice. First, extension professionals must be engaging and trustworthy. Anyone can simply regurgitate data findings from a project, but it takes skill to translate research and technology and help a stakeholder understand how it might affect their situation. The ability to reach stakeholders (and when appropriate, to convince them to modify their management strategies) relies on effective communication (Gott and Coyle 2019). Extension personnel must be capable of reaching different audiences and accommodating various learning styles through written, verbal, in-person, and online communication methods. Extension personnel also need to be trusted. If we say we’re going to do something, we must do it. If we don’t know the answer to a question, we must honestly say so, but offer to get back to the stakeholder after we’ve had time to figure it out. Losing trust essentially renders an extension professional ineffective.

Second, extension professionals must be flexible. Plans for the day, week, or year can change in an instant, and we have to have the mental capacity and tolerance to adjust to the schedule. Game changers are invasive species, new species detections, regulatory changes, host shifts, and just about anything else that impacts our stakeholders—especially when they are unpredictable. For example, when soybean gall midge was discovered in the Midwest, EWH’s plan for extension curriculum and learning objectives were forever changed (McMechan et al.

### “How to Do Extension” Course at Iowa State University

**Course Objectives:**

1. Students will be introduced to the concept of extension in the plant sciences.
2. Students will attend or participate in a field day or workshop.
3. Students will shadow an ISU Extension and Outreach (ISUEO) faculty or staff member.
4. Students will develop examples of three forms of extension communication.

**Course Schedule:** The course will have 12 contact hours for each student. In addition, students will select 8 hours from ISUEO shadowing and 2 hours from extension communications.

- A. Introduction to extension programming.
  1. Students will independently read assigned materials before gathering in person.
  2. Class discussions (2 hours). We will use a “flipped classroom” approach. Students will reflect on and discuss the materials.
- B. ISUEO shadowing (students will select two of the following three options).
  1. Plant and Insect Diagnostic Clinic (4 hours). Assist diagnosticians with sample processing.
  2. Field days (4 hours).
    - a. Attend 1 field day.
    - b. Participate in 1 hands-on demonstration or lecture, including preparing handouts, samples, and other materials appropriate for the audience.
  3. Shadow an ISUEO faculty/staff member (4 hours).
- C. Extension communications (students will select two of the following three options).
  1. Written communication (students create 3 different written forms of communication).
    - a. Co-author 2 newsletter articles with an instructor.
    - b. Write 3 blog posts.
    - c. Review and update 2 encyclopedia articles.
    - d. Compose and post 10 tweets.
    - e. Compose and post 5 Facebook updates.
    - f. Participate in recording and/or producing 2 podcasts.
    - g. Have another idea (e.g., Snapchat, TikTok, etc.)? Let us know!
  2. Develop a YouTube video (2–3 min). The goal of the video should be to deliver research-based information to Iowa’s stakeholders (agronomists, farmers, seed dealers, ag businesses). The subject of the video can be an overview of the student’s project, a key finding from their research, or a different topic of choice.
  3. Curate a collection. Collect and curate a disease/insect/weed display for a crop of your choice. Specimens must have collection labels and include common name labels.

2021). When the federally regulated invasive Asian longhorned beetle (ALB) was found in South Carolina in 2020 (Coyle et al. 2021), DRC’s extension focus immediately shifted to nearly full-time ALB. Fact sheets needed to be written and media interviews conducted, and we had to coordinate with state and federal regulators to ensure consistent

messaging to the public and answer phone calls and e-mails from all different types of stakeholders.

Third, extension professionals must learn to work in little chunks of time and while on the road. Large blocks of uninterrupted time are a rarity, as it seems there’s always another “fire” to put out. (It could



even be fire ants!) Yes, every academic is saddled with meetings and e-mails, but extension professionals also field an inordinate amount of phone calls, drop-in visits, samples, and so on. Many extension workers also use social media, and we can spend five minutes a day or five hours a day creating content. Extension professionals generally spend a lot of time on the road, visiting stakeholders or attending meetings. The ability to work effectively from the front seat of a vehicle, in a hotel room, on an airplane, or in the corner of a public building isn't a skill everyone naturally possesses—for many, it has to be developed. Throw in the requested and/or required site visits, and each week turns into a hodgepodge of little chunks of time. Using these little chunks of time effectively is one of the keys to a successful extension career.

### Types of Extension Training

There are two main types of extension training, both with unique benefits to the student (Etling 1993). Formal (or structured) extension training consists of courses taught by extension professionals. Not all universities offer these types of courses, but when offered, they range from one-credit courses that meet as needed or have flexible goals to more developed courses with a formal schedule, syllabus, and expectations (Box 1). Objectives for these courses typically revolve around giving the student a greater awareness of extension history and best practices, including relevant experiences of creating materials and interacting with stakeholders. Formal extension courses can be very beneficial to future extension professionals because they can provide instruction on everything from the history and goals of extension to specific guidance on how to create extension materials. Formal courses allow for more focused instruction, peer-to-peer learning and critique, and a wider variety of possible experiences. Conversely, as with any formal course, a significant amount of effort is required on the part of the instructor, who is likely an extension professor or professional, and who already has significant limitations on available time (or may not even have a formal teaching appointment).

What if your university doesn't offer a formal course in extension? Or what if you live in a place where there isn't a land-grant university nearby, or you don't attend a land-grant university? The second approach to

extension training—informal, unstructured learning—offers ways to practice these skills and become a strong communicator. After all, communicating is the primary activity of extension professionals! This type of training comes in many forms; here, we offer three ways to get started:

1. Do your homework. Learn about educational programs in your area and understand that groups are always looking for experts. Maybe it's working with youth, the city, gardening or bee-keeping clubs, or your local community college. Understand their history, the hierarchy, current roles, etc. Reach out to them—you get nothing if you don't ask, so take that plunge and ask if there is a way you can participate or assist.
2. Shadow (or creep on?) fellow professionals. Find people (in person and online) doing extension and outreach—even outside entomology—to see how they communicate. Literally follow them around. In most cases, they'll probably love the extra help! Be there to help set up a meeting, pass around handouts, and answer questions or participate in the discussion. There truly is no better experience than on-the-ground training.

3. Practice. Get involved. You have something to contribute with your entomology expertise! Try translating your work into several delivery formats. Writing is hard, and writing for different audiences is even harder, and it takes practice. Stretch your comfort level with using technology and honing “toastmaster” skills. Get feedback from experts and your peers. Would you use different words, examples, or tone if you were talking to kids, or non-academic adults, or a skilled audience? Start small and then take on bigger projects as you gain more confidence. Know how your audience benefits from a certain delivery method (or by repetition with various methods). Meet with different networks and learn what they think is important.

### What Are the Different Kinds of Extension Products?

What do extension professionals do all the time? To put it bluntly, we talk and make stuff, which in academic terms means that we use different extension delivery methods to convey information to our stakeholders. Written materials can be in paper or digital format, and include (1) field guides, fact sheets, brochures, and other handouts; (2)



Fig. 1. Erin W. Hodgson (in the yellow shirt) at her very first field day when she was a student at the University of Minnesota in 2005: “I felt so appreciated by the participants after sharing my research on soybean aphid that I decided to look for extension jobs after graduation!” (Photo by David Nicolai.)



**Fig. 2.** David R. Coyle leading an afternoon insect outreach event for 6th graders when he was a student at the University of Wisconsin in 2006: “This was just one of many such events that slowly changed my thoughts on what type of career I wanted, because for a long time, I was convinced that I wanted to run a research lab. But, over time, I realized how much I liked doing all facets of extension.” (Photo by Shannon Cotter Marsella.)

peer-reviewed journal articles (e.g., in the *Journal of Integrated Pest Management* or *Journal of Extension*); or (3) newsletter articles and blogs. There are certainly other types of delivery methods, but this list gives examples of the diverse outlets available. Oral presentations may be live, virtual, or on-demand, and may include traditional lectures, workshops, field or demonstration days, podcasts, Zoom/Skype talks with different stakeholder groups, and short and long videos. Social media (e.g., Twitter, Facebook, Instagram, YouTube, TikTok, etc.) is a rapidly emerging area for extension and science communication, and of course information can be shared via websites. And don't forget the old standards: phone calls (yes, a lot of people still pick up the phone and call), texts, e-mail, and paper letters (many samples come through “snail mail”). Anything you can imagine might serve as an extension delivery method.

### The Role of Extension Faculty in Training the Next Generation of Extension Professionals

If the next generation of extension professionals is to be created, the current generation must be successful—and to be successful in academic extension, the program needs to be deliberate. The program needs a direction and process, and logic models can help guide activities. Programs generally benefit from conducting needs assessments and identifying learning objectives, and then creating and distributing pertinent materials, evaluating their impact, and making improvements (e.g., Diehl and Galindo-Gonzalez 2011, Hartmann and

Martin 2021, Kesheimer and Kelton 2021). Current extension professionals should, in turn, teach students the things we have already learned. Both DRC and EWH were “volun-told” to participate in a variety of extension activities, like speaking at field days (Fig. 1), offering outreach events for K–12 students (Fig. 2), and writing fact sheets (e.g., Coyle and Lewis 1999). But in the end, our advisors gave us the foundation to be competitive for faculty extension appointments as a career.

### Why Should You Think about Extension and Outreach as a Career?

If the last few years have shown us anything, it's that understanding how to effectively communicate about science fundamentals and research is important. Science communication (#SciComm) expertise is critical. We all need to communicate with our bosses and stakeholders to justify our existence, attain tenure, get funding, and develop collaborations. Effective communication is a cornerstone of creating positive change and advancing our careers.

The skills you acquire will be beneficial if you become a teacher or mentor or serve in university, society, and community roles. Pests (insects, fungi, nematodes, etc.) are a part of everyone's life, and you will become the go-to local expert for identification and general questions for the extent of your career (and perhaps beyond). You don't need an official extension appointment to “do extension.”

Professionals already working in extension should allow students to observe presentations, outreach events, and other

extension activities so that they can see different styles. After all, they'll have to find their own style someday.

Have fun and try extension!

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**David R. Coyle** is an assistant professor and extension specialist of forest health and invasive species at Clemson University ([dcoyle@clemson.edu](mailto:dcoyle@clemson.edu); [@drdavecoyle](https://twitter.com/drdavecoyle)). **Erin W. Hodgson** is a professor and extension entomologist of field crops at Iowa State University ([ewh@iastate.edu](mailto:ewh@iastate.edu); [@erinwhodgson](https://twitter.com/erinwhodgson)).

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