

**Life Sciences Communication Program Industry Needs Assessment**

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### Introduction

The communication needs and preferences of agricultural industry professional and agricultural communication stakeholders are changing at a rapid pace (Warwick et al., 2021; Dymont, 2022). Additionally, the dynamic nature of agricultural communications and the increasing incorporation of technology into the communication needs of professionals in this space calls for the evaluation of the curriculum that underpins the training needs of practitioners to align content with industry needs. Therefore, it is vital universities, such as Virginia Tech, tailor their curriculum to properly equip students for the job market. To properly equip students for the workforce, institutions must work closely with industry, who are key beneficiaries of the students produced to ensure relevant curriculum (Okolie et al., 2020). Therefore, the purpose of the study is to gather insights from communications professionals in the agricultural and life sciences industries, identifying the skills, knowledge, and competencies students need to meet the needs of their organizations in Virginia and surrounding areas.

### Conceptual Framework

This study adopted the Employability Skills Framework (Perkins Collaborative Resource Network, n.d.). This framework was developed as part of the support for States Employability Standards in Career and Technical Education (CTE) and Adult Education project, an initiative of the Office of Career, Technical, and Adult Education, U.S. Department of Education. According to the framework, for individuals to be considered employable, they need to satisfy nine conditions namely, interpersonal skills, personal qualities, technology use, systems thinking, communication skills, information use, resource management, critical skills, and applied academic skills.

### Method

We interviewed eight communication managers working in agricultural and life sciences industry organizations in Virginia and the surrounding region, found through an online search. We recruited participants via email to participate in a semi-structured Zoom interview that lasted between 45 and 60 minutes. Interviews were conducted between the first week of December 2024 and ended in January 2025. The initial stage of the analysis included transcribing each of the eight interviews verbatim. We then used ATLAS.ti to analyze data through thematic coding. Two researchers coded the data, increasing trustworthiness through intermittent peer debrief.

### Results

This study's results demonstrated evidence of all skills from the Employability Skills Framework. However, five skills emerged as strong themes among the participants: *interpersonal skills, personal qualities, technology use, communication skills, information use, and applied academic skills.*

Participants stressed the need for *applied academic skills* above all else. Several described their either agricultural or science-based academic background, or their communications background, both expressing lack in the opposing area; this led to emphasis on the need for academic preparation in both areas. Additionally, participants described the importance of applied classroom learning and internships to apply learned skills in a "real world" experience. A participant explained, "communication is a very hands-on kind of job. And probably students would benefit from doing work in a variety of different fields. So, if there could be a semester set up where students shadowed communications professionals or worked on short-term internships or something in that regard, I think that would be super helpful."

Juxtaposing the need for academic training, prioritization, flexibility, self-discipline, willingness to learn, time management and having strong organizational skills are some of the *personal qualities* participants highlighted as being important for science communicators. One participant explained, “it’s not like you’re going to, you know, come out of school with your bachelor’s degree or your master’s degree and you’re done... it’s always evolving and so I think you know, that’s probably one of the biggest challenges. I think for any new graduate, for any role it is just to be open and flexible and constantly trying to improve on what you already know, and the skill set that you already have and use that to the best of your ability.”

Participants described *technology use* as critical for their communications roles, the need to understand technology applied to communications needs, and how communications technologies are constantly evolving. They named graphic design tools such as Adobe Creative Suite, various social media platforms, website tools, data analytics, newsletter and email management tools, and social media management tools, such as Hootsuite, as specific software and technology used in the field. When describing AI use and importance, participants stressed the need for communicators to be aware of AI’s proper application to aid communication roles and its possible downfalls.

Participants consistently underscored the critical role *information use* skills required for research, interpretation, organization of information, and especially audience analysis as crucial. Beyond these, they agreed that dissemination of information is meaningless unless communicators can effectively analyze the audience who consumes the information shared. As observed by one participant “we want to make sure that we know who our target audience are whenever we’re doing any kind of communication plan or digital plan.”

Participants explained many instances in which *interpersonal skills* were critical in their roles, or critical in what they said agricultural communicators require. This was described as the need to work well with others, building relationships, responding to customer needs, and—above all else—teamwork skills.

Aside from writing, public speaking, visual communication, one common theme that resonated with participants when it came to *communication skills* was storytelling. “You need to be able to, you know, say things in a way that captivates people and then adapt it to your audience, and you know, think about what imagery or graphics would go along with it. It always comes back to storytelling and then you must be able to take that story and tell it in multiple different channels,” noted one participant.

### **Conclusions and Recommendations**

Based on the results of this study, we recommend universities, namely Virginia Tech, incorporate applied academic experiences within agricultural communications courses to enhance their curriculum, ensure communication students are equipped with agricultural and scientific skills and knowledge, and foster partnerships with relevant, local industry to curate internship opportunities for students’ enhanced applied skill development. We also recommend coursework that emphasizes transferable skills such as storytelling and audience analysis. It will be vital for student success to involve activities that foster opportunities to build teamwork, leadership, and other relationship development interpersonal skills. Lastly, we recommend the continued involvement of up-to-date technology use, particularly on the best ways to utilize AI as a communicator. Incorporation of these recommendations into agriculture communications curriculum will prepare students for successful future careers in Virginia, and beyond.

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