

## Extension and the Maker Movement

### Abstract

Involvement in the Maker Movement is growing across the nation. Extension has an opportunity to engage with new audiences by applying the existing skills and knowledge found in the Cooperative Extension System. Utah State University Extension has found success in engaging with the Maker Movement in a variety of ways.

**Dave W. Francis**  
Extension Associate  
Professor  
[dave.francis@usu.edu](mailto:dave.francis@usu.edu)

**Paul A. Hill**  
Extension Assistant  
Professor  
[paul.hill@usu.edu](mailto:paul.hill@usu.edu)

**GaeLynn Peterson**  
Extension Assistant  
Professor  
[gaelynn.peterson@usu.edu](mailto:gaelynn.peterson@usu.edu)

Utah State University

## Background

On July 2, 1862, President Abraham Lincoln signed the Morrill Act, providing each state with public lands to create universities specializing in home economics, mechanical arts, and other professions that were practical at the time (Comer, Campbell, Edwards, & Hillison, 2006). The Smith-Lever Act of 1914 established a system of Cooperative Extension Services, connected to the land-grant universities, in order to inform people about current developments in agriculture, home economics, leadership, economic development, and many other related subjects (Gould, Steele, & Woodrum, 2014). 4-H was developed as a strategy to disseminate information to youth, because they were more willing to try new ideas.

As society advanced, many of the skills taught by Extension, such as sewing, resources, and blueprints for farm buildings (Farm Building Plans, 2014), were considered less relevant and not taught as frequently. In addition to Extension reducing efforts in home economics and industrial arts, public schools have also lessened their efforts to teach "Shop and Home Ec" (Brown, 2012; Graham, 2013). Today, however, a growing Maker Movement provides Extension an opportunity to engage with a new audience interested in many of the resource-rich topics Extension has already developed.

## The Maker Movement

People around the world are using the technology of online social networks to connect and share their projects, they call themselves "Makers" (Hagel, Brown, & Kulasooriya, 2014). A Maker is someone who makes stuff: apparel, robots, crafts, food, furniture, art, or electronic gadgets. This term, "Maker," is described by Chris Anderson, editor-in-chief of WIRED magazine, as "a new category of builders who are using open-source methods and the latest technology to bring

manufacturing out of its traditional factory context, and into the realm of the personal desktop computer" (Gustin, 2012).

The Maker Movement is a subculture that pushes innovation to the limit, encouraging new applications of technologies. Within the culture there's an enthusiasm for invention, prototyping, and applying practical skills in new creative ways. Makers want to figure out how to make or do stuff on their own. They have a passion for creating, building, and sharing in a gamut of topics including recipes, gardening, sewing, mechanics, and many more. Enter the opportunity for Extension: We have the ability to apply a century of experience in these topics and connect with a thriving grassroots movement that is growing by leaps and bounds. A quick glimpse into the social networks of these Makers reveals that they are driven simply by their curiosity for creating and learning new things—they also generously share their handiwork and techniques with others online and face-to-face (Thomas, 2012).

A growing trend is for Makers to gather to show off their ideas at a "Maker Faire." Extension and the land-grant system have been providing information to individuals and encouraging them to share their efforts at county and state fairs for over 100 years. Extension has a chance to engage with the Maker Movement to disseminate research-based information and practical skills to better support Maker efforts.

## **Urban Makers**

Understanding and engaging with the growing Maker Movement is vitally important to Extension programs. The Maker Movement provides a new audience, especially in urban locations, for Extension to rebrand existing materials to provide quality, research-based content Makers need to be safe and successful in a variety of Maker projects from food preservation to electricity.

In the early days of Extension, educators began connecting youth with the work of the land-grant university. This proved successful because, in the early 1900s, corn clubs were established and educators found youth to be more receptive than their parents in adopting new corn planting techniques. Through young people's involvement and accomplishments in the corn clubs, the parents were exposed to new farming methods and convinced to adopt new practices (Rasmussen, 1989; Reyburn, 1980).

4-H involvement in the Maker Movement embraces the idea of igniting the spark in young people to create, collaborate, and develop science abilities. In the same way early corn and canning clubs created positive impacts on parents and communities, involvement with the Maker Movement is doing the same today (Van Horn, Flanagan, & Thomson, 1998).

Utah 4-H secured a pilot Maker grant and resources from Google and Maker Media to supply two Makerspaces in Cache and Washington Counties with equipment needed to host regular Maker Club activities and summer Maker Camps. The Discover 4-H curriculum used for these activities was all developed and rebranded using research-based information by USU Extension professionals from every domain of expertise (Discover 4-H Clubs, 2014).

## **Rural Makers**

The 4-H Maker Club in Wayne County, Utah (pop. 2700) was formed using the start-up equipment provided through the pilot Maker grant by youth and adults who already identified with the Maker Movement. Parents and friends who used Utah's Discover 4-H curriculum at this club have expressed a desire to be Makers themselves. Through word of mouth and via social media, interest continues to grow and new clubs form. New club members of all levels of expertise are learning to use soldering irons, sewing machines, rotary cutters, vinyl and cloth cutting machines, scroll saws, band sanders, and mitre saws to follow existing patterns as well as create their own designs.

## Conclusion

The Maker Movement is expanding from basements and garages to a global community. In fact, the White House even hosted its first Maker Faire in 2014 to raise awareness of the Maker Movement, and the President proclaimed June 18, 2014 a National Day of Making (White House, 2014). In the spirit of belonging, building, and sharing the things they're passionate about, the Maker Movement has emerged, giving voice and encouragement to all who seek to express themselves through the things they create (Denmead, 2013). Extension has an opportunity to apply the skills and knowledge of the land-grant educator and volunteer network to participate in a meaningful way. Doing so will increase the visibility of Extension and deliver content to a new audience. This effort will assist Extension in staying relevant in the 21st century.

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