

# General Session

Moderator: *Rob Lynch*

## Crossing over the mountain: how to create memes that outcompete fear and misinformation

Vance Crowe

Monsanto Company, 800 Lindbergh Blvd, St. Louis, MO 63167

### Abstract

This talk will offer attendees the opportunity to think about how they communicate their scientific discoveries so that the general public can both understand and help carry messages forward to their own networks. This talk will demonstrate the art of storytelling, discuss how ideas are packaged into memes that must compete with all other information available, and show examples of people in a wide variety of networks WHO are successfully engineering memes that outcompete fear and pseudoscience.

**Key words:** communication, science, agriculture

### Résumé

Cette présentation va permettre aux participants de mener une réflexion sur la manière de communiquer des découvertes scientifiques pour faire en sorte que le grand public puisse à la fois comprendre et aider à disséminer les messages à grande échelle. Cette présentation va se pencher sur l'art du propos, discuter comment les idées sont ficelées sous la forme de *memes* qui compétitionnent avec les autres éléments d'information présents et présenter des exemples de personnes dans un grand ensemble de réseaux QUI sont capables d'engendrer des *memes* capables de concurrencer la peur et la pseudoscience.

### Keynote Overview

Over the last 10,000 years, agriculture has empowered civilization by lowering the percentage of individuals' time spent procuring calories. In the last 100 years, improved technology has fueled the greatest human migration in history; allowing millions of people to leave their farms and move into cities where they can apply their time, skills, and passion into other pursuits. This massive flowering of urban living has created unimaginable opportunities. This opportunity brings with it new challenges because most people are so distant from where their food is grown, they are vulnerable to believing myths about where and how it is produced.

In an increasingly complicated world, human beings do not have time or the capacity to understand all of the questions that are encountered on a regular basis. One major evolutionary advantage that allowed humans to thrive is the ability to take vast quantities of information and compress it so that it can be transmitted, understood, and transmitted again if it provides information that helps an individual address questions they are confronted with. This compression and sharing of information was referred to by evolutionary biologist Richard Dawkins as "memes." In many ways memes behave similar to genes in that they will only survive, propagate and thrive if they provide a competitive advantage to those that absorb that way of thinking. However, because we cannot have complete information about any subject, human beings utilize their social networks to help them understand which memes they should absorb and which to reject. This creates an effective system for transmitting valuable information, and in many cases this crowd-sourced knowledge is superior to any one individual's ability to address complex situations. However, crowds are not impervious to mistakes and one way to short circuit one's ability to detect the validity of a meme is to add a component of fear or threat of danger into a meme which both captures attention and provides a social benefit for individuals to spread.

In the past, fears that were responded to kept groups alert and wary of things that could harm them. But in the context of science and agriculture, meme fear/danger mechanisms can be used to stop evidence-based conclusions and often outcompete nuanced answers to complicated questions. This is compounded by the reality that we are more likely to absorb memes that are given to us by our social networks, and sharing these memes is not the same as sharing evidence, it is instead a signal of group loyalty. This often leaves scientists in the position of not knowing how to respond effectively. If one responds negatively, even with evidence, to the person who put the meme forward, the perception is not that the idea is faulty, but that you are criticizing the opinion holder's social network. This seldom has positive results and often ends in rejection of the idea and further alienation.

But it is not impossible to connect with people and package science-based ideas so that they are competitive

memes. People are far more likely to accept and share memes that are:

1. Surprising
2. Educational
3. Align with their loyalties

While it is difficult to imagine what ideas could be packaged in this way, it is critical to understand that the first goal to effectively spread memes is to build out diverse networks of people that see that the things you value are similar to what they value. Your ability to connect with others dramatically increases the likelihood that they will look to you when confronted with a novel concept and they need help understanding. This trust begins by helping individuals become fascinated by things that are likely common to you, but seem foreign or out of reach to them. It is advisable to imagine those moments when you were starting to struggle while learning your field, if you can remember the special teacher that caught your attention with something interesting, or the experience you had that made you feel a sense of fascination, then you can begin to offer others that same sense. Over time they will not only look to you to provide that again, but also trust your judgment when they do not understand a complex subject.

Explaining science is not enough. To truly outcompete fear and pseudoscience each person must focus on building

their networks, sharing things of value, and finding ways to connect on values so that it is easy to imagine having loyalty to the same community.

Below are individuals that I will reference and places people in the audience can go to find people sharing interesting ideas that want to hear and be connected with this community:

@AmyEMathe

@RachelLaudan [www.RachelLaudan.com](http://www.RachelLaudan.com)

@Julie\_Kelly2

@TheFarmerslife <https://www.youtube.com/user/thefarmerslife03>

@PrecisionNerd

Science Moms (Facebook) <https://www.facebook.com/ScienceMomsDoc/?fref=ts>

@TheLeagueofNerd <https://www.youtube.com/user/LeagueOfNerdsPodcast>

@MAMyths <http://www.mamyths.org/>

@Ecomodernism <http://www.ecomodernism.org/>

1. Twitter: #AgChat (Tuesdays 8 pm EST)

2. Podcasts: Talking Biotech Podcast;

3. Blogs: [risk-monger.com/](http://risk-monger.com/)

4. Facebook: GMOLOL;