

**S1071 : A framework for secondary schools agriscience education programs that emphasizes the STEM content in agriculture**

May 17, 2022

**Attendees:** Kevin Curry, Penn State, Kevincurry@psu.edu Tyson Sorensen, Utah State, Tyson.sorensen@usu.edu Jonathon Ulmer, Kansas State, julmer@ksu.edu Kasee Smith, University of Idaho, klsmith@uidhaho.edu Aaron McKim, Michigan State, amckim@msu.edu Catherine DiBenedetto, Clemson, cdibene@clemson.edu Brian Myers, U. Florida, bmyers@ufl.edu Laura Hasselquist, South Dakota State U., laura.hasselquist@sdstate.edu Barry Croom, University of Georgia, dbcroom@uga.edu

**Objective Updates**

**Objective 1:** Identify practices, cross-cutting concepts, and disciplinary core ideas to be included in a secondary school agriscience program.

No discussion here as this objective has been deemed to be completed. See 2021 minutes.

**Objective 2:** Identify teaching methods, resources (facilities, equipment, materials, etc.), and techniques currently utilized by exemplary teachers.

The previously created instrument was piloted and deemed to have serious problems with reliability. So, a different approach to have each individual researcher examine aspects of this objectives. Multiple studies are being conducted to meet this objective. See member updates below for a summary.

**Objective 3:** Develop an innovation configuration for implementing an agriscience program.

(Curry & Myers) Little discussion here since the IC map has been completed, reviewed, finalized, submitted to UF. Next step is to offer PD for the IC map.

**Member Updates**

Member	Institution	Update
Sorensen & McKim	Utah State & Michigan State	SocioScientific Issues (SSI) from science discipline being examined in two states to identify exemplary teaching through integration of SSI
Ulmer	Kansas St.	Examining STEM in Agricultural Systems courses. Also examining STEM in virtual and online settings. What methods, resources, techniques being used?
Hasselquist	South Dakota St.	Examining Interactive notebooks in the context of STEM- what methods, resources, techniques being used?

Curry	Penn St.	Examining STEM literacy among students and teachers, how do they identify (and teach) what is reliable source? What methods, resources, techniques being used?
Smith	U of Idaho	What frameworks are SBAE teachers using? Hosting world food prize. Examining science teachers who integrate agriculture- what methods, resources, techniques being used?
Croom	U of Georgia	Survey of curriculum. Technical content needs of SBAE teachers in STEM.
Myers	U of Florida	Focus on Middle and high school teachers increasing technical STEM content by enhancing methods, resources, and techniques being used. Perception of principals towards SBAE in STEM teaching.
McKim	Michigan State	Urban science teachers and NGSS integration. what methods, resources, techniques being used? Land-based curriculum project Students and farmers have teamed up to work on sustainable agriculture issues through on-farm projects. Students take an active role in problem solving, learning about the food system, and discovering careers in agriculture.
DiBenedetto	Clemson	“STEM it up” project focused on enhancing STEM education through floriculture. Illuminating STEM practices through Ag Science projects. What methods, resources, techniques being used?

## Replacement Proposal

Update from Chair. The proposal has been submitted- thanks to the team for helping complete the proposal. It is in review but so far good feedback. Overview of the new project:

- **Objective 1: Curriculum - Facilitate the adoption, and evaluate the impact, of agricultural STEM curriculum.** Objective one seeks to utilize the document that was prepared by the previous multistate efforts related to this project to indicate the integration across the Disciplinary Core Ideas identified by the expert panel, the AFNR Performance Indicators, and the NGSS Performance Expectations this iteration of the project intends to disseminate the curriculum framework to secondary agriculture teachers and teacher educators through states represented on this project.
- **Objective 2: Teaching Methods and Instruction- Identify teaching methods, resources (facilities, equipment, materials, etc.), and techniques currently utilized by agriscience teachers during exemplary Agricultural STEM instruction.** The purpose of objective two aligns with previous attempts of the S1057 and S1071 multistate projects to gain an in-depth analysis of current methods of STEM content integration utilized by exemplary agriscience teachers.

- **Objective 3: Professional Development: Design and evaluate professional development as it relates to Agricultural STEM Education.** Objective three seeks to describe the nature and impact of professional development (PD) related to agricultural educator integration of STEM concepts within a school-based agricultural education (SBAE) program.

#### **Election of new leadership:**

3-year term- 2022-2025.

Chair: Aaron McKim, MSU

Vice Chair: Tyson Sorensen, USU

Objective 1 coordinator: John Ulmer, KSU

Objective 2 coordinator: Barry Croom, UGA

Objective 3 coordinator: Laura Hasselquist, SDSU

#### **Plans for next steps and other discussion items:**

A discussion about developing a website for dissemination of our work, research, and projects to stakeholders. Discussion about how Ag Literacy has a website. Should we develop a website of our own? Should we piggy back on an existing site? Ulmer tasked to look at options.

Invited presentations were discussed. The possibility of creating a STEM webinar series and opportunity for graduate students to engage. No action taken. McKim to explore further.

All identified an objective. Work on accomplishing the objective in coming months.