

# Engaging Secondary Teachers in CALS Research for Agricultural Literacy

June 19 – 23, 2023

Hotel for Lodging: The Inn at Virginia Tech

901 Prices Fork Rd

Blacksburg, VA 24601

Conference Location: VT Campus Laboratories & Meeting Spaces @ The Inn

## Monday, June 19, 2023

12:00 PM **Registration –**

12:30 PM **Welcome/Introductions/Icebreaker**

*\*\* Refreshment Break items are available all day in the Upper Quad*

1:00 PM **Instructional strategies for addressing complex real-world problems**  
(Westfall-Rudd)

Systems thinking within the FEW Nexus will be used as a unifying framework for our Immersive On-campus Experience for Teachers. Real-world FANH challenges, such as food security, are inherently complex and interdisciplinary; most could be called “wicked problems” because there is a “mismatch between how real-world systems work and how we think they work”.

1:30 PM **Working Lunch –** Preston’s at The Inn

2:00 PM **Instructional strategies for addressing complex real-world problems** (cont.)

5:00 PM Break

7:00 PM **Dinner with the group –** off campus

## Tuesday, June 20, 2023

8:30 AM **Breakfast Buffet @** Preston’s Restaurant in the Hotel

9:00 AM Travel to 411 Latham Hall

9:15 AM **DNA extraction lab: Collecting environmental samples** (Haak)

From DNA extraction to full sequence using DNA extraction kits you will be taking back to use in your classrooms.



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Collect environmental swabs from plants outside Latham, Extract DNA, discuss Quantitate via Gel Electrophoresis.

12:30 PM **Lunch**

1:00 PM **Analyzing next-generation sequencing data** (Haak)

4:00 PM Travel back to the hotel

*\*\* Refreshment Break items are available all day in the Upper Quad*

4:30 PM **Reflection @ The Inn** (Westfall-Rudd)

7:00 PM **Dinner** with the group off campus

### **Wednesday, June 21, 2023**

8:30 AM **Breakfast Buffet @ Preston's Restaurant** in the Hotel

9:00 AM Travel to HAAB

9:15 AM **Chemistry and physics of gummy bears** (Barone)

Virginia Tech researchers will work with secondary school teachers to identify the latest trends in gummy and the effect they have on processing and final texture and flavor.

12:30 PM **Lunch**

1:00 PM **Chemistry and physics of gummy bears** (Barone)

4:00 PM Travel back to the hotel

*\*\* Refreshment Break items are available all day in the Upper Quad @ The Inn*

4:30 PM **Working Dinner & Reflection** in the 1872 Salon in Preston's Restaurant (Westfall-Rudd)

7:00 PM Travel to Glenvar HS to visit a Science Department that has an apiary, school garden, greenhouse, student-run business, and outdoor classroom.

*Sci Dept Head, Charlie Filer is our Host*



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## Thursday, June 22, 2023

- 8:30 AM      **Breakfast Buffet** @ Preston's Restaurant in the Hotel
- 9:00 AM      Travel to lab
- 9:30 AM      **Food Science & the Senses** (Herbert)  
Active demonstrations using PROP strips (supertaster test), jellybean test (nose pinch), grapefruit juice + salt (sensory interactions), and perhaps the chocolate bar audio match demo. Other demonstrations will include the production and preservation of berry jam. Lesson plans will be available for all demonstrations.
- 12:30 PM     **Lunch**
- 1:00 PM      **Discovery With Bio- and Environmental Sensing**  
Developing and using biosensors to collect data on biological systems and the environment can support the integration of problem-solving, coding, data analysis, decision-making, and critical thinking through creative, hands-on learning. In this workshop, we will build 2 biosensors: one that can measure heart rate and carbon dioxide concentrations; and one that can measure soil moisture and light spectra. We will explore using the first sensor to understand physiological responses to exercise. The second sensor will be used to understand the relationships between soil parameters and plant growth.
- 4:00 PM      **Travel back to the hotel**  
*\*\* Refreshment Break items are available all day in the Upper Quad @ The Inn*
- 4:30 PM      **Reflection** in the Drillfield Conference Room @ The Inn (Westfall-Rudd)
- 7:00 PM      Dinner with the group off campus

## Friday, June 23, 2023



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- 8:30 AM      **Breakfast Buffet** @ Preston's Restaurant in the Hotel  
              \*\* Refreshment Break items are available all day in the Upper Quad @ The Inn
- 9:00 AM      **Leadership Development** - Drillfield Conference Room (Rick Rudd)  
              We will focus on skills to lead teams, communicate, solve problems, make decisions and think critically. This particular component of the program will enhance the overall focus on systems thinking to address complex problems in agriculture and in life.
- 12:30 PM     **Lunch** in Preston's - Conference Wrap-Up and Departure



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