

Engaging Secondary Teachers in CALS Research for Agricultural Literacy

June 17 – 21, 2024

Hotel for Lodging: The Inn at Virginia Tech

901 Prices Fork Rd

Blacksburg, VA 24601

Conference Location: VT Campus Laboratories & Meeting Rooms

Monday, June 17, 2024

12:00 PM **Registration – 200 Litton Reaves Hall, Virginia Tech**

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

Lunch – Litton Reaves

1:00 PM **Instructional strategies for addressing complex real-world problems**
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”.

5:00 PM *Break*

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

Tuesday, June 18, 2024

8:15 AM **Breakfast Buffet** @ Preston’s Restaurant in the Hotel

Travel to 411 Latham Hall

9:00 AM **DNA extraction lab: Collecting environmental samples** Dave Haak, Faculty Facilitator. From DNA extraction to full sequence using DNA extraction kits, you will be taking back to use in your classrooms.
Collect environmental swabs from plants outside Latham, Extract DNA, and discuss Quantitate via Gel Electrophoresis.
Tour of the Genomics Core on the second floor of Seger

12:30 PM **Lunch** – Outside Latham Hall if weather permits, or in Latham 311



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1:00 PM **Spice Lab** – 200 Litton Reaves Hall
William Taylor, Faculty Facilitator A culturally relevant way to engage students in agriculture education and STEM through the use of herbs and spices.

4:00 PM **Reflection** on the day's experiences

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

Wednesday, June 19, 2024

8:15 AM **Breakfast Buffet**

Travel to campus lab @ HAAB1

9:00 AM **Food Science: Sensational Sensing and Jamming with Jam** – Herbert Bruce, Marlon Ac-Pangan and Joell Eifert, Faculty Facilitators

HABB1 108 and HABB1 Sensory Lab

Overview of the Food Science and Technology Department and food science major; active demonstrations using PROP strips (“supertaster” test), jellybean test (nose pinch), and sorting task with dark chocolates; understanding water activity through jam production. Lesson plans will be available for all demonstrations.

12:00 PM **Lunch** – HAAB1 108

1:00 PM **Chemistry and physics of gummy bears** - Justin Barone, Faculty Facilitator
HAAB1 108

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

4:00 PM **Working Dinner & Reflection.** Hannah Scherer, Faculty Facilitator

5:30 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



Thursday, June 20, 2024

8:15 PM **Breakfast**

Travel to lab

9:00 AM **Sea Urchin Embryology Lab** Alan Ealy, Jessica Keane, Faculty Facilitators
Sea Urchins are a commonly used model for fertilization and early embryological events.

12:00 PM **Lunch** in Litton Reaves

1:00 PM **Repro rocks! How do cows get pregnant?** – Vitor Mercadante, Faculty Facilitator
Infertility that leads to the failure of a cow or heifer to become pregnant and deliver a calf results in the single largest economic loss of cow-calf production systems. Advances in reproductive technologies over the last 50 years enhanced our understanding of the physiology and the dynamics of the reproductive system of the cow. During this workshop, you will learn more about the anatomy and physiology of the female bovine reproductive system. In addition, you will be exposed to the different reproductive technologies currently available for beef and dairy producers. This workshop will take a hands-on approach (literally!), and you will have an opportunity to experience and perform rectal palpation and ultrasonography, as well as learn how to manipulate and thaw frozen semen, load artificial insemination guns, and visualize and grade bovine embryos using microscopes.

4:30 PM **Reflection** – Hannah Scherer

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

Friday, June 21, 2024

8:15 AM **Breakfast**

Travel to Squires Student Center

9:00 AM **Leadership Development** – Rick Rudd, Faculty Facilitator
Cascades Conference Room



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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** – (Location TBD) Conference Wrap-Up and Departure



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