MISCELLANEOUS INFORMATION

- UNG Public Safety contact information: (706) 864-1500 or publicsafety@ung.edu
- Need a PLU? Email April.Nelms@ung.edu your full name and mailing address. Put "ELIPSE 11 PLU" in subject line.

Agenda – Saturday March 8, 2025

REGISTRATION, 8:30 AM TO 8:55AM

REGISTRATION AND BREAKFAST

SCIENCE BUILDING ATRIUM

PLENARY SESSION, 9:00AM TO 9:55AM

WELCOME AND OPENING REMARKS

GAINESVILLE SCIENCE & TECHNOLOGY, ROOM 103

Frank Lock

ELIPSE Conference Committee

OPENING PLENARY SESSION: Room 103

Introducing Science Vocabulary: To Frontload or not to Frontload?

Laura Canepa- Redondo

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In this keynote, we will examine different scenarios about utilizing vocabulary. I will share lived experiences of the pitfalls due to multiple meaning words, but also offer a solution on how to proactively navigate those pitfalls. Furthermore, as a science educator, I will connect how encountering new science vocabulary in context of figuring out a phenomenon is an effective strategy to construct new meaning. Thus, shifting our practice and strengthening our efforts to support all students in communicating with more precision language for science.

CONCURRENT SESSIONS STARTING AT 10:10 AM
SESSION 1 – 10:10 – 11:00 AM

Loraine Ramirez-Villarin and Derek Piper (grades 6-12)
Presider: Lisa Wilbanks
Room: 1 (213)

Argument- Driven Explanations for Middle and High School

. Our research group has developed instructional scaffolds that help students purposefully evaluate connections between lines of evidence and alternative explanations of phenomena, involving all aspects of 3D learning. This includes participating in specific Science and Engineering practices such as analyzing and interpreting data, constructing explanations and engaging in argument from evidence. In doing so, students construct a deep understanding of Earth science topics employing crosscutting concepts such as cause and effect, systems and system models, and stability and change. In this workshop-style session, teachers will learn about and use these instructional scaffolds as an effective sensemaking strategy. These scaffolds cover complex socio-scientific issues including climate change, extreme weather, dead zones and food security, and are provided through support from NSF.

Karen Henman and Julie Carbaugh – (grades K-5)
Presider: none
Room: 2 (216)

Bringing Science to Life: Integrating Picture Books and Hands-On Activities in Elementary Classrooms

In this session, you'll discover how to incorporate both fiction and nonfiction picture books into elementary science lessons, along with creative, hands-on activities that make physical science come to life for your students.

Laura Cantu and Kelley Brock-Simmons (grades 4-8)
Presider: Max Vazquez Dominguez
Room 3 (232)
Super Science Vocabulary Instruction: Integrating the New Literacy Laws and Standards(Grades 4-8)

Participants will explore inventive ways to teach science content vocabulary to 4th through 8th grades to address and meet the new literacy laws and standards in the science classroom. Participants will engage in interactive, hands-on learning and leave with creative strategies and assessment tools to use with students in 4th through 8th grade.

Cary Sell and Rylan Wade (grades 9-12)
Presider: None
Room 4 (225)

We Want S'More Chemistry

In this workshop we will explore how making s'mores in lab can be used to teach the concept of limiting and excess reactants. Participants will have the opportunity to determine the limiting and excess reactants from provided materials and will then make s'mores.

Mark Spraker and April Nelms (grades 6-12)
Presider: Aliyah Johnson
Room 5 (201)

Teaching Radioactive Decay With Simple Activities

Radioactive decay is a complex topic taught in middle and high school Earth Science and Physics. In this presentation, a nuclear astrophysicist and science educator will share a few simple ways to demonstrate radioactive decay. We will use easily obtainable materials with limited budgets.

BREAK – 11:00 – 11:10 AM

SESSION 2 – 11:10 – NOON

Loraine Ramirez- Villarin (grades K-5)
Presider:
Room 1 (213)

Argument -Driven Explanations in Elementary Science

Critique and evaluation are central to the scientific enterprise. A Framework for K-12 Science Education identifies critiquing, arguing, and analyzing as evaluative processes that are foundational to science and science learning. However, it can be challenging for elementary students to think critically and scientifically about controversial topics like climate change. This session introduces a storybook-like scaffold that helps students purposefully evaluate connections between lines of evidence and alternative explanations of phenomena. In doing so, students construct a deeper understanding of the topic. Students are also introduced to negotiating and evaluating claims and exercising argumentation among peers.

Romola Bernard, Max Vazquez-Dominguez, Caitlyn Wall, Imelda Razo
(grades 6-8)
Presider Karen Henman
Room 2 (216)

Engineering lessons for 8th grade physical science: electromagnetism; force and motion

Participants will be provided with engineering lessons for two 8th grade physical science topics: electromagnetism plus force and motion. The focus is on how the lessons were implemented, student work was assessed, and discussions to improve instruction and student learning.

Logan Kageorge (grades 9-12)
Presider Frank Lock
Room 3 (232)

Charged Up! Determining the number of excess electrons on typical charged objects.

Why does the smooth side of sticky tape cling to your hand after you rip it off the roll? It gets electrically charged! But just how charged is it? Is it positive or negative? How many electrons did it gain or lose?
In this activity, participants will deduce the number of excess charges on a piece of sticky tape by quantitatively comparing electric and gravitational forces acting on the it. This

activity uses everyday resources that are inexpensive and readily available to any educator!

Brittney Denier Cantrell and Allison Crouch (grades 6-12)
Presider:Winnifred Namatovu
Room 4 (225)

Obtain, Evaluate, Communicate – How the New ELA Standards support SEPs

The recent adoption of the new English Language Arts Georgia Standards of Excellence presents a unique opportunity to enhance interdisciplinary learning, particularly in the context of science education. This session explores how the ELA standards can be leveraged to support science and engineering practices and science literacy in all classrooms. By aligning ELA instruction with the demands of scientific inquiry, argumentation, and communication, teachers can foster students' ability to critically evaluate scientific texts, construct evidence-based arguments, and effectively communicate scientific ideas. This session will delve into practical strategies for integrating ELA and science curricula, providing examples of formative assessments that promote cross-disciplinary competencies. Participants will leave with a deeper understanding of how ELA standards can not only support but also enhance students' mastery of SEPs, ultimately preparing them for success in both academic and real-world scientific endeavors.

Steve Kuninsky (General Education)
Presider: Denise Webb
Room 5 (201)

A Class that Reads Together Learns Togethers

Learn two essential techniques for engaging students with reading scientific texts out loud and silently. Protocols, sample texts, and videos of implementation will be shared.

LUNCH – NOON – 12:50 PM

For All - Science Building Atrium

Special Lunch Panel for Preservice Teachers in Room 104

Moderated by: Winnifred Namatovu and Max Vazquez-Dominguez

If you are a student volunteer and an education major, this is an opportunity for you! In this session, administrators from nearby school districts will provide valuable insights tailored for preservice teachers, including details about the application process, hiring timelines, and available resources to support job preparation. The session will also feature a Q&A segment, along with opportunities for one-on-one conversations with administrators.

Panelists: Dr. Brad Brown – Hall County, Ms. Laura Corely – White County,

Dr. Rodriguez Johnson – Gwinnett County, and Dr. Jamie Brown – Forsyth County

SESSION 3 – 1:00 – 1:50 PM

Lisa Wilbanks (general education)
Presider Julie Carbaugh
Room 1 (213)

Empowering Physical Science Educators with AI for Deeper Learning

Discover how artificial intelligence (AI) tools can transform the way physical science educators approach inquiry and experiential learning. This session will introduce a range of AI-powered resources, such as Google's Notebook LM, ChatGPT, Perplexity AI, Canva, and Curipod, designed to help teachers streamline lesson planning, synthesize complex scientific research, and create engaging materials for hands-on activities. Participants will learn how to use AI to generate guiding questions, develop creative approaches to teaching, and integrate data-driven insights into their classrooms to foster critical thinking and deeper student engagement.

Vanessa Lynch (grades K-8)
Presider
Room 2 (216)

Tasty Earth Science Labs: Smash, Shake, and Snack!

Dig into Earth science, where playing with your food is the experiment! Crumble through cookie weathering, smash s'mores plate boundaries, and test your engineering skills in the earthquake challenge. Will your building survive the shake?

Max Vazquez-Dominguez, Melissa Sanchez, Yasmin Martinez, Winnifred Namatovu, Romola Bernard (grades K-5)
Presider: none
Room 3 (232)

Promoting engineering literacy with forces and motion in K-2 grades (with the use of AI)

In this workshop we will model how to use children's books to engage K-2 grade students in learning about forces and motion and use engineering to solve a problem. Working in small teams, you will experience the engineering tasks of helping Ricky the Rock roll down a hill so his friends enjoy playing with him outside. Using your observation and communication skills, you will test different materials to help Ricky the rock. We will use AI to develop some guiding questions for teachers to ask students while implementing this activity in the classroom.

Amanda Moffett (grades 6-12)
Presider Logan Kageorge
Room 4 (225)

How Likely is Finding Alien Life in our Galaxy?

The Drake Equation is a framework used by astronomers to estimate the number of alien civilizations in the Milky Way Galaxy that might possibly be trying to communicate with our civilization. This is clearly a complex problem to investigate, combining knowledge of astronomy, biology, technology, and history, so the Drake Equation works by combining a series of probabilistic factors, some of which we know reasonably well and others that are highly uncertain. In this session, we will consider the Drake Equation by first introducing basic probability concepts and then applying those concepts to derive our own estimates of the number of communicative alien civilizations in our home Galaxy.

Cari Logreira and Becky Walker (grades 6-8)
Presider
Room 5 (201)

Reading, Writing, and Talking: Engaging Literacy Strategies in Science

This session describes literacy integration strategies in the middle grades classroom.

BREAK – 1:50 – 2:00 PM

SESSION 4 – 2:00 -2:50 PM

Celia Ayenesazen and Tricia Sung (grades 6-8)
Presider Romola Bernard
Room 1 (212)

Exploring Wearable E-Textiles

*Gain hands-on experience creating a simple wearable project using conductive thread and LEDs.
*Explore the features of the Teknikio Bluebird microcontroller to experiment with electronics, coding, and interactive projects.

This workshop offers a unique opportunity to explore the cutting-edge developments shaping the future of interactive wearables.

Aliyah Johnson (grades 6-12)
Presider Amanda Moffett
Room 2 (216)

Literacy and Physics

The goals of this session are to explore the relationship between technical literacy and student success in physics, to highlight the importance of hands-on learning, decoding technical language, and critical thinking skills, and to inspire educators to incorporate more engaging literacy lessons in their physics courses.

Frank Lock (general education)
Presider
Room 3 (232)

Science Saves and Generation Skeptics

Science Saves and Generation Skeptics are programs presented by the Teacher Institute for Evolutionary Science. Participants will be introduced to the Science Saves and Generation Skeptics programs. These provide numerous lesson plans and activities designed to help students learn about the value of science to our culture. All the materials can be freely accessed. Participants in this workshop will complete some of the activities. Active learning strategies will be used.

Denise Webb (grades K-5)
Presider Lorraine Ramirez Villarin
Room 4 (225)

Hands on Science in Elementary

You are going to participate in several hands-on lessons to excite and engage students in K-5 that supports GSE science standards. Lots of lessons you can implement right away and on a tight budget!

Lesley Simanton-Coogan (grades k-8)
Presider
Room 5 (201)

Playing with Light and Shadows

In March 2025, there will be a total lunar eclipse visible from Georgia, and it's a great opportunity to observe the Earth's shadow as it covers the Moon. In this session, we'll use flashlights to play with shadows, learning about lunar phases, eclipses, seasons, the Earth's shape, and more! These activities can be adapted for most grade levels.

Closing Session and Door Prizes – 3:00 – 3:45 PM

Logan Kageorge
Room 103

Peer Efficacy and the Importance of Participation

What does it mean to be a "science person"? Students' beliefs about how their peers recognize them as a strong science student are correlated with their persistence in science courses and careers, but this peer recognition and its motivation can change over time. This presentation follows a study at Brenau University which analyzes student nominations of strong peers across a two-semester introductory physics course. We use a combination of social network analysis and qualitative methods to show that while many students receive similar levels of peer recognition over time, the most highly-nominated students exhibit some change between semesters. Here we delve deeper into the causes of these changes through two case studies within the larger findings.

Amy Tinnell - Door prizes and information about GSTA

Karen Henman - Closing Remarks

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PRESENTER CONTACT INFORMATION

Karen Henman khenman@brenau.edu
Logan Kageorge lkageorge@brenau.edu
Frank Lock lockphys@gmail.com
Amanda Moffett amanda.moffett@ung.edu
Lorraine Ramirez Villarin lorraine.ramirezvillarin@ung.edu
Max Vazquez Dominguez max.vazquezdominguez@ung.edu
Aliyah Johnson johnsonan@fultonschools.org
Laura Canepo-Redondo laura.canepa-redondo@doe.k12.ga.us
Romola Bernard romola.bernard@ung.edu
Caitlyn Wall mcima5216@ung.edu
Imelda Razo irazo9721@ung.edu
Brittney Denier Cantrell bcantrell@forsyth.k12.ga.us
Melissa Sanchez cmsanc7649@ung.edu
Yasmin Martinez ymart2900@ung.edu
Winnifred Namatovu winnifred.namatovu@ung.edu
Lisa Wilbanks lwilbanks@jcss.us
Denise Webb dewebb@forsyth.k12.ga.us
Celia Ayenesazan celia.ayenesazan@gcpsk12.org
Julie Carbaugh carbaugh.julie@gmail.com
Cari Logreira cari.logreira@gcssk12.net
Laura Cantu lcantu@brenau.edu
Mark Spraker mark.spraker@ung.edu
April Nelms anelms@ung.edu
Steve Kuninsky steve.kuninsky@gcpsk12.org
Vanessa Lynch vlynch@georgiacyber.org
Lesley Simanton-Coogan lesley.simantoncoogan@ung.edu

SPECIAL THANKS TO OUR SUPPORTERS

The 2025 ELIPSE conference committee would like to thank the following sponsors for their generous support of ELIPSE 11:

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Click here
https://drive.google.com/drive/folders/1Td-kROLrV8Ad8SAl5LvbokItiZ50j4yA?usp=sharing

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MAKE PLANS TO ATTEND ELIPSE 12

Mark your calendars: Jan 24, 2026