**Activities for SCJAS Fall Workshop 2024**

**Furman University Saturday October 26th**

# Journey to the Center of the Atom

**Jon Guy and Bill Wabbersen (South Carolina Academy of Science)**

Students explore atomic structure using the hands-on Isotope Discovery Kit. The session will include brief descriptions of how important nuclear technologies are used within the state of South Carolina.

**Gamification of Biology Content: Teaching Ecological Concepts Through Tabletop Games**

**Matt Montrose (Montrose Biology)**

Attendees will play ecology-themed tabletop games developed by a biology teacher and evaluate the strengths and limitations of experiential learning through the process of playing games. Players will construct food webs in diverse biomes and attempt to achieve healthy ecosystems in order to unlock special abilities. The games are aligned with NGSS standards and throughout the game players will use authentic scientific vocabulary related to the study of ecology. (Optional) Attendees will also begin to design their own tabletop games focused on the content area of their choice.

**Forensic Anthropology**

**Chelsea Johnson (JL Mann High School)**

Students turn into “bone detectives” as they analyze human skeletal remains to solve “missing persons” mystery.  Possible age, sex, and race of bone remains are determined using simple tools.

**From Netflix to March Madness:  Using Simple Ideas in Data Analytics to Drive Predictions**

**Kevin Hudson (Furman University)**

 Three of the most commonly-encountered problems in data analytics are the classification problem (using past information to predict a certain behavior), the similarity matching problem (using proximity to predict similar interest), and the clustering problem (using proximity to classify).  While there are simple mathematical concepts underlying approaches to solving these problems, the techniques employed are powerful and can be applied to a variety of areas including sports prediction, e-commerce, and movie recommendations.

**Planetarium: Observing Space and Time**

**David Moffett (Furman University)**

Students will experience views of the Universe from the Timmons Planetarium, where they will watch the simulated time evolution of the night sky through the year, and travel through the Solar System, the Milky Way, and beyond.

# The Forgotten World of the Protozoan

# Deb Ezell (Chesnee HS)

What are the protozoa? Where do they live? What do they eat? Do they taste like chicken? You’ll discover protozoa’s place in the tree of life and learn why some are considered animal like and some plantlike. You will use microscopes and dichotomous keys to observe, classify, and identify various organisms.

# Science Trivia Competition

**Furman Students (Chemistry and AED)**

Ready to prove your team’s science prowess? Play against multiple teams in our two-round tournament. This competition is weighted toward chemistry and biology topics but may include questions from physics and mathematics as well. Get those thumb muscles toned, get ready to buzz in, get your science knowledge tested! Sign up is limited to the first eight teams, so sign up today!

# Shark Dissection

# Edna Steele (Converse University; Retired); Mark Bohler (Converse University)

A hands-on activity involving the study of the external and internal anatomy of the dogfish shark.

# The Neuroscience Times with Sheep Brain Dissection

# Riley Sayegh (Furman; Collaborative Neuroscience Society)

# Join us for an engaging and educational session that blends the excitement of games with hands-on interaction of all things neuroscience! Experience learning about the brain with activities inspired by The New York Times games, but with a neuroscience twist. Dive into hands-on exploration with a sheep brain dissection, where you'll gain firsthand insight into brain anatomy and function. Whether you’re a neuroscience enthusiast or just curious about the inner workings of the brain, this session promises a stimulating and interactive experience focusing on all things neuroscience!

# Exploring the Gas Laws

# Jeff Petty (Furman University)

Can you handle the pressure? Determine the MW of a common aerosol using our favorite gas laws.

**What’s Wrong With This Patient?**

**Blake Masters (USC SOM Greenville) and additional medical students**

As presented by USC School of Medicine Greenville medical students, this workshop will split students up in teams in an interactive, anatomy-driven competition to determine the primary problem with a patient’s presenting illness.

**Counting Rings and Reading Leaves: A Guide to Tree ID and Age**

**Faith Sulak (Furman University)**

Pines, Oaks, Magnolias, Oh my! In this session, students will learn key tree identification techniques and the unique characteristics of a handful of common trees of the South Carolina Upstate. Additionally, students will learn how to estimate a tree's age and life history through the analysis of tree cores! Overall, this session aims to enhance student's appreciation for some of the more forgotten aspects of Earth's biodiversity.

**Furman Campus Tour**

Join Furman STEM Majors as they provide an afternoon walking tour of campus including visiting 3 or more STEM departments.

**Possibly a few additional sessions in Math…**