

Course Goals

8/5/26 18:00 - 20:00 ET



Yohn Jairo Parra

Mentor 1: Felicia Doswell- [Norfolk State University](#)

Home Institution: Florida A&M University

Target Course: Artificial Intelligence

Target Course Number: CAP-4620

Anticipated Enrollment: 10

Science Gateways Resource Needs/Questions:

- *How many students will be active simultaneously?*
- *What are memory and storage quotas per user?*
- *When and how frequently is this course offered?*

Project Goals:

- *Explore LLMs that can be tested and use by my students in HPC systems*
- *Explore datasets with environments that can be used on gateways.*

Joseph Aneke

Mentor 1: Sabrina Perry - Austin Peay State University

Home Institution: Hampton University

Target Course: Introduction to Python Programming

Target Course Number: CSC 291

Anticipated Enrollment: 22-30 (Spring 2027)

Science Gateways Resource Needs/Questions:

- *Need/Question 1: What Science Gateways AI tools are available and easily usable in classrooms ?*
- *Need/Question 2: What training and computing resources are available?*
- ...



Science Gateway Goal: Use classroom-friendly Gateway resources (Jetstream2, Cornell Virtual Workshop, HPC Carpentry) to experience computing beyond the desktop

Project Goals:

- *Goal 1: Introduce students to Programming with HPC Perspectives*
- *Goal 2: Explore resources e.g Data sets with a view to produce reproducible projects*
- *Goal 3: Train students to integrate and visualize results from multiple science gateway platforms.*

Mary K. Beals, PhD

Mentor 1: Subil Abraham - Oak Ridge National Laboratory

Mentor 2: First Last Name - Affiliation

Home Institution: Southern University A&M College

Target Course: Ecology

Target Course Number: 404B

Anticipated Enrollment: 15

When and how frequently is this course offered? Fall and Spring as needed

Science Gateways Resource Needs/Questions:

- *What practices should be built into the course-based undergraduate research experience, or CURE, to ensure that student workflows are accessible, reproducible, reusable, and sustainable beyond the Faculty Hackathon?*
- *How can Science Gateways help students move through the full ecological research process, including asking research questions, accessing data, analyzing patterns, visualizing results, and interpreting findings connected to real-world Louisiana ecosystems?*
- What scaffolding, tutorials, or support materials are needed to help biology majors who are new to computational tools feel confident using Science Gateways for ecological inquiry and data analysis?

Project Goals:

- Use **Jetstream2** through **ACCESS** as the primary Science Gateway resource for Ecology students to explore Louisiana ecological, environmental, and climate-related datasets.
- Build a scaffolded CURE workflow using **Jetstream2**, **Jupyter notebooks**, and **ecological datasets** to guide students through research questions, data analysis, visualization, and interpretation.
- Create an accessible implementation plan using **Cornell Virtual Workshop** and **HPC Carpentry** tutorials to support student onboarding, reproducibility, and low-bandwidth backup options.



Tanganika Johnson, Ph.D.

Mentor 1: Mohammed Elmellouki -Mississippi Valley State University

Mentor 2: First Last Name - Affiliation

Home Institution: Southern University and A&M College

Target Course: Environmental Science

Target Course Number: 271

Anticipated Enrollment: 10-15

When and how frequently is this course offered? Spring or Fall Semester

Science Gateways Resource Needs/Questions:

Project Goals:

- Integrate an accessible science gateway and authentic South Louisiana datasets from **Designsafe** into the 16-week 271 course.
- Develop four scaffolded gateway activities using **Jupyter Notebook** that move students from data discovery and visualization to interpretation
- Support the Jaguar Environmental Resilience CURE on urban heat, tree canopy, stormwater, water quality, soil, or biodiversity by using **JetStream 2** through **ACCESS**.
- Create a reproducible workflow that ends with a research report, accessible poster, and community-facing environmental product.

- Which browser-based gateway best supports Louisiana environmental and geospatial datasets for beginning users?
- How can we provide reliable student accounts, data access, and a low-bandwidth backup for a class of 10-15?
- What resources and support are available to help adapt scaffolded notebooks for mapping, data visualization, basic statistics, and analysis of student-collected field data?
- What practices will make our Course-based Undergraduate Research Experiences (CUREs) accessible, reproducible, reusable, and sustainable for future course sections after the hackathon?



Your Name

Mentor 1: First Last Name - Affiliation

Mentor 2: First Last Name - Affiliation

Home Institution:

Target Course:

Target Course Number:

Anticipated Enrollment:

- When and how frequently is this course offered?

Science Gateways Resource Needs/Questions:

- *Need/Question 1*
- *Need/Question 2*
- ...

Project Goals:

- ...

Oyebade Kunle Oyerinde

Mentor 1: Dr. Elijah MacCharty - Oak Ridge
National Laboratory

Home Institution: Clark Atlanta University

Target Course: Economics and Data
Science for Public Administrators

Target Course Number: CPAD 504

Anticipated Enrollment: 20

- When and how frequently is this course offered?
Fall & Spring as needed

Science Gateways Resource Needs/Questions:

- *Need/Question 1: What Gateways AI tools to use?*
- *Need/Question 2: What are available Gateways sources?*

...



Project Goals:

- **Goal 1:** Identify and explain the principles and concepts of microeconomics, macroeconomics, and data science that are applicable in decision-making by organizations
- **Goal 2:** Analyze economic data using software programs and programming languages, such as R, Python, and Excel in Jetstream2 and CloudBank Hubs.
- **Goal 3:** Communicate through storytelling about data visualizations in R and/or Python.
- **Goal 4:** Construct alternative policy options to remedy a market failure through problem.

Agbeli Ameko

Mentor 1: Dr. Mohamed Elbakary, ECSU

Mentor 2: First Last Name - Affiliation

Home Institution: Howard University, Applied Data Sci & Analytics

Target Course: Intro to Open Source Future: Decolonizing Technology & Data Sovereignty

Target Course Number: TBD

Anticipated Enrollment: 15-25

- Spring/Fall

Science Gateways Resource Needs/Questions:

- *Jetstream2: VMs, JupyterHub, Docker, metabase, Ollama/AI*
- *Backup classroom server & remote compute*
- ...

Project Goals:

- *Understand local open-source tools, OS, automations, and ethical computing vs digital colonialism*
- *Tour of useful open source data skills via JupyterLab, Metabase, Python for EJ analysis*
- *Critical analysis of big tech power and building confidence to utilize open source solutions*

Cheryl A. Swanier

Mentor 1: Anas AlSobeh - Utah Valley University

Home Institution: Voorhees University

Target Course: Intro to Computing

Target Course Number: CMP 224

Anticipated Enrollment: 12

- When and how frequently is this course offered? Fall & Spring Semesters

Science Gateways Resource Needs/Questions:

- *Need/Question 1: Which Gateway Resources can be used to assist students with AI?*
- *Need/Question 2*

Project Goals:

- *Goal 1: Develop foundational computing and programming skills.*
- *Goal 2: Apply artificial intelligence and cloud computing responsibly using Jetstream2*
- *Goal 3: Use artificial intelligence as a learning and productivity tool*



Your Name

Mentor 1: First Last Name - Affiliation

Mentor 2: First Last Name - Affiliation

Home Institution:

Target Course:

Target Course Number:

Anticipated Enrollment:

-

Science Gateways Resource Needs/Questions:

-
-

Project Goals:

- *Goal 1*
- *Goal 2*
- *Goal 3*
- ...

Kristine Christensen

Mentor 1: Dr. John Holmen, ORNL

Mentor 2: Charlie Dey, TACC

Home Institution: Moraine Valley Community College

Target Course: IoT Fundamentals (no prereqs)

Target Course Number: LAN 120.300 (Freshman/Sophomore)

Anticipated Enrollment: 24

Offered: Fall & spring, with at least one section offered each semester

Science Gateways Resource Needs/Questions:

- Guidance selecting an appropriate science gateway, cloud, or HPC environment.
- Assistance setting up instructor and student accounts and educational access.
- Help creating a beginner-friendly, browser-based Jupyter environment and recommendations for introductory IoT, sensor, cybersecurity, and critical infrastructure datasets.
- Support adapting or developing scaffolded notebooks for data exploration and visualization.
- Guidance for allowing students to upload and analyze data collected from their own sensors.
- Recommendations for maintaining and reusing the environment and notebooks.



Project Goals:

- Introduce entry-level IoT students to science gateways, public datasets, Jetstream 2, Jupyter notebooks, cloud computing, and HPC resources.
- Develop foundational notebook and visualization skills through scaffolded activities designed for students with no prior Python or HPC experience.
- Help students run prepared code, modify selected variables, visualize authentic IoT and industrial data, and interpret the results.
- Introduce AI-assisted anomaly detection, cybersecurity, and critical infrastructure applications in an approachable manner.
- Guide students in transferring these skills to a sensor-based final project in which they collect, analyze, visualize, and report on their own data.

Joshua Gbadebo

Mentor 1: Prof. Ojo - Auburn University

Mentor 2: First Last Name - Affiliation

Home Institution: Voorhees University

Target Course: Computer Architecture

Target Course Number: CMP 411

Anticipated Enrollment: 15

- When and how frequently is this course offered? Fall and Spring

Science Gateways Resource Needs/Questions:

- *Need/Question 1: How does JetStream2 map onto computer architecture concepts.*
- *Need/Question 2: Understanding how AI has enabled modern computer architectures evolution.*
- *Need/Question 3: Which other Science Gateway AI resources can help students understand architecture in Cloud Computing*

Project Goals:

- *Goal 1: Understand the concept of Computer Architecture.*
- *Goal 2: Integrate the concept and understanding of cloud architecture as it relates to traditional computer architecture.*
- *Goal 3: Analyze how computer architecture principles support artificial intelligence workloads by examining the interaction between processors, memory systems, storage, parallel computing, and specialized AI hardware accelerators.*
- *Goal 4: Prepare students to understanding the importance of computer architecture in traditional on-prem and modern cloud computing models in IaaS, PaaS, SaaS.*



Antigone Anthony

Mentor 1: Ahmad Al-Omari - Our Lady of The Lake University

Mentor 2: First Last Name - Affiliation

Home Institution: Southern University A&M College

Target Course: Anatomy & Physiology

Target Course Number: SBIO 221B

Anticipated Enrollment: 25

When and how frequently is this course offered? Fall & Spring

Project Goals:

- *Integrate science gateway resources into teaching and research activities.*
- *Expand student access to computing tools, data, and hands-on learning.*
- *Provide faculty and students with training and technical support.*

Science Gateways Resource Needs/Questions:

- *Need/Question 1: How can science gateways support our courses and research?*
- *Need/Question 2: What training and computing resources are available?*