

# Coordinates to Move Your Science Forward

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## Inside This Issue

- Message from the Principal Investigator
- Meet the Family
- Project Spotlight
- Cyberinfrastructure Focus
- Get Involved

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*More than 150 schools around the world have used MyGeoHub for courses in the past 32 months.*

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## Message from the Principal Investigator

As we wrap up the summer, we would like to share some exciting news and recent developments on MyGeoHub and hear your input on making our geospatial science gateway more usable for your research and education work.

-- Carol Song, Rosen Center for Advanced Computing, Purdue University

## Meet GABBs

MyGeoHub.org is a public science gateway supporting broad geospatial modeling, data analysis and visualization needs of research and education communities through hosting and management of groups, datasets, tools, training materials, and educational contents. Built on HUBzero, it features geospatial data capabilities developed under the GABBs project efforts.



**GABBs** is an NSF-funded project to create a powerful Web-based system that will allow researchers worldwide to manage, curate, share, analyze and visualize geospatial data for purposes ranging from predicting damaging floods to studying climate change effects on the global population. In GABBs 2.0, we are developing an extensible geospatial data framework (**GeoEDF**) to add novel geospatial data building blocks (reusable data connectors and processors) making large scientific and social geospatial datasets directly usable in scientific models and tools in multiple disciplines.

## Project Spotlight – MyGeoHub Courses

MyGeoHub features a flexible and easy-to-use course facility to support teaching and learning in classrooms and self-paced studies from a browser. The instructors and students do not need to download or install any software. For instructors, the DIY-style course creation allows them to develop a course outline and fill it with learning materials and hands-on exercises, e.g., using interactive tools on MyGeoHub. For students, they can not only use the online course and resources to learn and practice but also stay on as a user to continue their research and learning after a class or training event.

In the past 32 months, more than 1,000 users from approximately 150 schools worldwide, including K-12 and colleges, have used MyGeoHub in classes, training workshops, and self-paced learning.

## CyberTraining in Focus

*CyberTraining Fellows practice the FAIR principle and skills they learned by publishing their research tools and teaching modules on MyGeoHub science gateway*

### A High School Class on MyGeoHub

In the Fall semester of 2021, MyGeoHub was used to support several classes taught by Mr. Nishimura at Toyama University of International Studies High School located in Toyama city, Toyama Prefecture, Japan. Around 120 students took Mr. Nishimura's frontier class that teaches GIS and remote sensing skills using the interactive Multispec tool on MyGeoHub. Each class had 40 students who met twice a week. The students learned the basic knowledge of remote sensing and used the MultiSpec tool for hands-on practices, for example, to learn and visualize the difference of NDVI numerical values like water shed, bare land, botanic area and so on.



## Get Involved

Interested in learning more, please contact: [info@gabbs-project.org](mailto:info@gabbs-project.org)

Follow Us on Twitter: 

[@MyGeoHub\\_](https://twitter.com/MyGeoHub_)

[@gabbs\\_project](https://twitter.com/gabbs_project)

### GABBS Project:

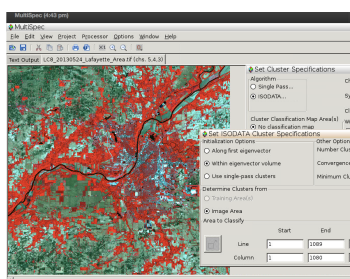
[mygeohub.org/groups/gabbs/](https://mygeohub.org/groups/gabbs/)

### GeoEDF repository:

[github.com/geoedf](https://github.com/geoedf)

### StreamCI information:

[streamci.org](https://streamci.org)



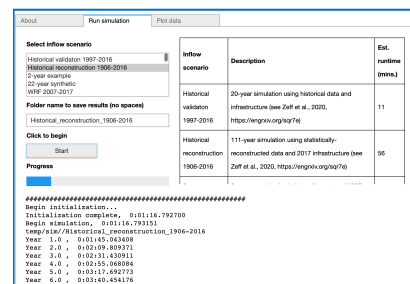
**MultiSpec Online** - Developed by Larry Biehl, MultiSpec Online is an open-source processing system for interactively analyzing Earth observational, multispectral image data such as that produced by the Landsat series of Earth satellites and hyperspectral image data from current and future airborne and spaceborne systems such as AVIRIS. It has found significant use in other applications such as multiband

medical imagery and in K-12 and college level educational activities. Currently MultiSpec has several thousand known registered users, a significant uptake since MultiSpec was brought online from its desktop version.

### FAIR CyberTraining (FACT) Fellows

We partnered with a CyberTraining team led by Drs. Merwade and Huber to train future researchers in making their research FAIR (Findable, Accessible, Interoperable & Reusable). Since 2020, the team has hosted and trained 10 FACT Fellows in climate and water sciences to use cyberinfrastructure and tools for their research. FACT Fellows

are graduate students from universities across the U.S. They attended a virtual workshop using an online CyberTraining course developed and deployed on MyGeoHub, worked with their advisors and Purdue mentors to conduct research following the FAIR principles. The fellows used a mix of open-source tools in their FACT research to practice FAIR best practices, and created cyber training materials based on the work accomplished through this fellowship.



Andrew Hamilton, a 2020 fellow from University of North Carolina at Chapel Hill, published an [online tool](#) (screenshot above) on MyGeoHub for his CALFEWS model. CALFEWS is an open-source, Python-based model for simulating the integrated, multi-sector dynamics of water supply in the Central Valley of California. He also developed an [online course](#) titled "Python for Environmental Research" to introduce students to python programming through the lens of environmental research.