



# MICHIGANVIEW 2020 - 2021



## MICHIGANVIEW 2020 - 2021 ACTIVITIES

As a state-member of the AmericaView consortium, MichiganView strives to promote Earth observation science within the State of Michigan. MichiganView's primary goal is to develop strategic partnerships with organizations around the state to develop easy to use tools, tutorials, and activities that advance remote sensing and geospatial technology education.

Much of MichiganView's effort has focused on working with schools to help students develop geospatial literacy. By exposing students to remote sensing and geospatial technologies at a young age, MichiganView hopes to spark interest in science and technology career pathways, especially in populations that are typically underrepresented in STEM-related fields. Developing relationships with schools in underserved areas is a priority for MichiganView, and direct collaboration with educators has resulted in useful activities that augment existing curricula. Integrating Earth observation into science and social studies units, rather than presenting it as a standalone topic, has proven to be an effective strategy for establishing partnerships with teachers who have limited capacity for extra lessons.

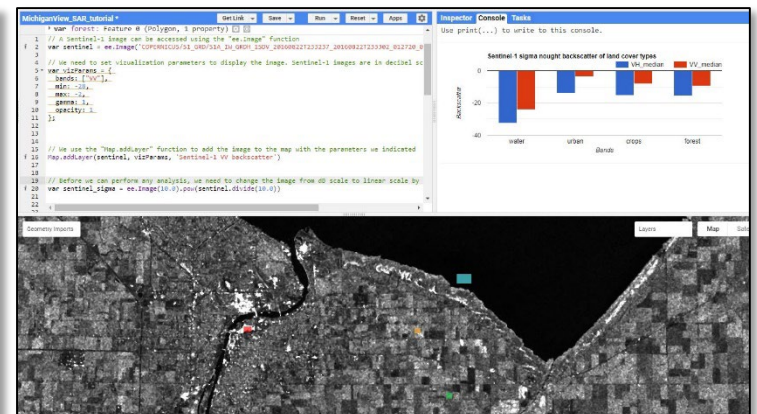
MichiganView also works with citizen-scientists and non-expert professionals on Earth science related topics, providing expertise at workshops and virtual meetings. Tutorials which utilize open-source software such as QGIS and cloud-computing environments such as Google Earth Engine are shared at MichiganView's website ([www.michiganview.org](http://www.michiganview.org)). MichiganView also maintains a list of remote sensing resources and a curated archive of Michigan-centric imagery.



April, July, and October cloud-free composites of Michigan's Upper Peninsula created with a MichiganView Google Earth Engine Tutorial



The thick blue line on the globe above is the Prime Meridian. The prime meridian is the starting point for lines of longitude. The thick red line is the Equator. The Equator is the starting point for lines of latitude. We use units called degrees to measure latitude and longitude. You can click the lines above to see the degrees and directions associated with them. What latitude and longitude lines are closest to some cities you know of in different countries?



Screenshots of tools created by MichiganView in 2020-2021. The image on the left shows an ESRI StoryMap created to teach 4<sup>th</sup> graders the difference between absolute and relative location. The image on the right is from a Google Earth Engine code snippet designed to introduce users to synthetic aperture radar image interpretation and analysis.

MichiganView is a member of the AmericaView Consortium, a nationally coordinated network of academic, agency, non-profit, and industry partners and cooperators that share the vision of promoting and supporting the use of remote sensing data and technology within each state. AmericaView is funded by USGS grant agreement G18AP00077.



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## BENEFITS TO MICHIGAN

- MichiganView activities developed for K-12 students are designed to help educators meet science and social studies standards set by the Michigan Department of Education.
  - As part of a unit to teach 4<sup>th</sup> grade students to “think like a geographer” they participated in an activity that introduced them to reading maps, interpreting air photos, and understanding cardinal directions.
- Lab exercises created for community students utilize freely available remote sensing data, such as imagery from the Landsat archive.
  - Environmental science students at Washtenaw Community College used Landsat 8 images to understand how different surfaces reflect near-infrared light.
- MichiganView develops tutorials for open-source software that help organizations integrate remote sensing technology into their projects.
  - A stratified random point sampling tutorial implemented in QGIS was presented at a workshop on wetland mapping to help scientists collect data for a large-scale collaborative mapping project.



*A class from University Preparatory Academy in Detroit during a scavenger hunt designed with MichiganView.*



*Students used air photos to find changes in the neighborhood around their school.*

## MICHIGANVIEW CONSORTIUM MEMBERSHIP



**Michigan Tech**



**MICHIGAN STATE**  
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