



# MONTANAView 2021 - 2022

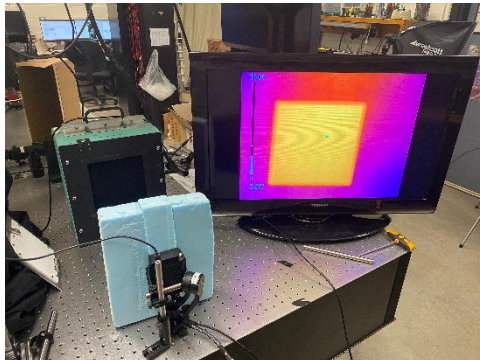
**AmericaView<sup>SM</sup>**  
Empowering Earth Observation Education  
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## MONTANAView 2021 - 2022 ACTIVITIES

MontanaView successfully completed the High Impact Activity “Fellowships for undergraduate and graduate students conducting applied remote sensing projects.” The goals of this activity were to 1) support students and provide encouragement and resources for them to pursue a career in geospatial sciences and remote sensing; and 2) benefit the state of Montana by providing information, data, and analysis that will improve the management of natural resources. MontanaView awarded 11 fellowships (\$1,000 - \$1,500 each) to students at six institutions across Montana.

The following is a list of the students and their institutions, project titles, and mentors (in parentheses):

- Michael McInenly, University of Montana, Using INSAR to measure seasonal changes in halite salt crust elevation in the Salar de Pajonales, Chile (Dr. Anna Klene)
- Spencer Vieira, University of Montana, Impacts of wildfires and climate change on western larch regeneration, western U.S. (Dr. Anna Klene)
- Nate Heili, Montana State University, Irrigation ditches as novel ecosystems that may provide ecological connections across aquatic-terrestrial boundaries (Dr. Wyatt Cross)
- Hayden Yates, Montana State University, Challenges and limitations of UAV-based thermal infrared (TIR) remote sensing with a FLIR Duo Pro R camera (Dr. Andrew Laskowski)
- Erin McGowan, Montana Tech University, Modeling the spatial distribution of stream power and lateral channel migration rates: A fluvial geomorphic tool for restoration practices (Dr. Glenn Shaw)
- Yihuan Gao, Montana Tech University, Measuring the glacier change in Glacier National Park using Landsat imagery (Dr. Xiaobing Zhou)
- Madisan Chavez, Montana State University Billings, Assessing change in acreage of irrigated agriculture in the Stillwater watershed of south-central Montana (Dr. Joe Hoover)
- Kalai'i Sim, University of Montana Western, Lateral channel migration and sediment transport of beaver dominated streams, Red Rock Creek, Montana (Dr. Arica Crootof)
- Megan Francois, University of Montana Western, Lateral channel migration of beaver dominated streams, Odell Creek, Montana (Dr. Arica Crootof)
- Randall Finley, Salish Kootenai College, Mapping historic forest management with aerial photographs for the Confederated Salish and Kootenai Tribes (Dr. Robert Kenning)
- Bryce Norling, Salish Kootenai College, Mapping historic forest management with aerial photographs for the Confederated Salish and Kootenai Tribes (Dr. Robert Kenning)



*Experimental setup for test of FLIR Duo Pro R radiometric thermal camera exposure to environmental conditions by Hayden Yates for her MontanaView remote sensing fellowship project.*

MontanaView 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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MontanaView continued to provide mentoring to graduate student Zach Fighter of Montana State University, on his research titled “Multi-scale analysis of *Ventenata* control treatments on the Crow Reservation.” *Ventenata dubia* is an invasive winter annual grass that impacts plant community diversity and forage production. Zach completed an ambitious field campaign during the 2022 growing season in which he acquired near-weekly drone measurements of his experimental *Ventenata* control treatment plots on the Crow Reservation, Montana.



*Experimental control plots and ground control points for invasive winter annual grass *Ventenata dubia* on the Crow Reservation in Montana.*



*Zach Fighter, graduate student at Montana State University, flying a drone at a field site on the Crow Reservation, Montana.*

## MONTANAView CONSORTIUM MEMBERSHIP



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