

# Scientist of the Month



## Spencer Baysinger

Spencer Baysinger is a third-year BLaST scholar and a junior at UAF, pursuing a bachelor of science degree in computer science with a minor in mathematics. He is also a UAF Honors student, President of the UAF National Society of Leadership and Success and a UAF Residence Life resident assistant. Spencer is interested in the impacts that software development, data science, and cybersecurity have on the aerospace industry. Last summer, he spent three weeks studying abroad in Jiangsu, China, at the Nanjing University of Astronautics and Aeronautics. He also recently enlisted in the Air Force as a cyber operations specialist. In his free time, he enjoys hiking, playing guitar, and toying around with new technology.

### Research

Baysinger's current research project, "Explorative Research Development in Cloud-Integrated Systems," focuses on many data platforms in the Alaska Satellite Facility under the Geophysical Institute at UAF. The ASF facility processes, archives, and distributes remote-sensing data to scientific users. This project provided Baysinger with valuable experience with the Amazon Web Services (AWS) in a SCRUM-based development environment (an online data tool), where he collaborates at the intersection of Geographic Information Systems (GIS) and web-integrated platforms. Through this work, Baysinger has been involved in learning about, designing, and developing tools that empower scientists who analyze and interpret geospatial data. Previous experience in research, Baysinger joined the UAF Robotics Team in building a Lunar Mining Rover for the NASA Human Exploration Rover Challenge, where his efforts helped advance the rover's capability to operate in challenging extraterrestrial environments. Baysinger also collaborated with Dr. Devin Drown, UAF associate professor in the Department of Biology and Wildlife and Institute of Arctic Biology. They examined the use of small-form factor (SFF) CUDA-powered NVIDIA embedded GPU systems for efficient genetic data processing. By using Nanopore AI technology, Baysinger analyzed the performance of the NVIDIA systems using permafrost samples to understand how they support genetic sampling in both field and laboratory settings.

### Mentoring

Through Baysinger's research experiences, he was able to join teams focused on researching and developing technology that make positive ecological impacts. He extends his heartfelt gratitude to his first mentor, Dr. Drown, "He was the one who introduced me to research and helped cultivate a rigorous scientific approach to data science." Baysinger also thanks his current mentor Brian Buechler, UAF software engineer, and supervisor James Milburn, product development manager at Alaska Satellite Facility for their guidance; and Dr. Orion Lawlor, professor of computer science, for mentoring him during his time with the UAF Robotics Team. Baysinger also expressed deep appreciation for Lori Gildehaus, his BLaST RAMP advisor, who has been a steadfast supporter throughout his UAF research journey, and to everyone that has made BLaST such an amazing program. Spencer plans to continue working at the Alaska Satellite Facility, pursuing projects that relate to his interests.



**Top left:** BLaST Scholar Spencer Baysinger at the Geophysical Institute, UAF Troth Yedda Campus. (January 2025, Photo credit: A. Topkok)

**Left:** Baysinger enjoying a hike at Canwell Glacier, Delta Junction, Alaska. (January 2024, Photo courtesy of S. Baysinger)

**Right:** Baysinger with James Milburn at the Arctic Region Supercomputing Center, UAF. (January 2025, Photo credit: A. Topkok)

