Fisheries management in a flow-regulated river on a private ranch

1. **Faculty Mentors**
   (1) Yoichiro Kanno, Associate Professor, Dept. Fish, Wildlife, and Conservation Biology, Warner College. Email: yoichiro.kanno@colostate.edu
   (2) Brett Johnson, Professor, Dept. Fish, Wildlife, and Conservation Biology, Warner College. Email: brett.johnson@colostate.edu

2. **Other Mentors**
   (1) Brien Rose, Director of Natural Resources/Fisheries Biologist, Blue Valley Ranch.
   (2) Dan Schroder, Summit County Director, CSU Extension.
   (3) Nitsa Platis, Master's student, Dept. Fish, Wildlife, and Conservation Biology, Warner College.

3. **Study Region**
   Fieldwork and stakeholder engagement will take place on the Blue River at the Blue Valley Ranch in Kremmling, Grand County. Laboratory work will take place on the CSU main campus in Fort Collins. Slightly more time will be spent on campus than in the field.

4. **Internship Goals, Scope, and Objectives**
   The internship goal is to assist with fisheries management in a flow-regulated river on the Blue Valley Ranch, which owns a large segment of the Blue River. The intern will participate in fishery fieldwork involving electrofishing, food web sampling, and angling, and laboratory work, including processing fish diets (aquatic insect identification), preparation of stable isotope samples, and age estimation using scales and otoliths. The intern will work closely with the Blue Valley Ranch and other stakeholders in the area involved in the relationships among stream flow, habitat, and fishery production. The intern will also have the opportunity to engage with other natural resources tasks and maintenance activities on the Blue Valley Ranch.

5. **Project background**
   Water is a valuable resource in Colorado. Limited supply of water has resulted in intense water management including construction of dams. They have affected fisheries production in Blue River, which was once a Gold Medal trout fishery destination. Our project aims to improve a trout fishery in a river regulated by dams via flow and habitat management. Our applied research takes place on the Blue Valley Ranch which is located downstream of the Green Mountain Reservoir. Outcomes of this research will be applicable to other regulated rivers, on public and private lands, in Colorado.

6. **Stakeholder groups the intern will work with**
   Blue Valley Ranch, Trout Unlimited, Colorado Parks and Wildlife, Blue River Watershed Group

7. **Student Learning Outcomes and Opportunities for Professional Development**
   The intern will gain hands-on experience, learning field and laboratory techniques in fisheries and stream ecology. The intern will also work closely with a graduate student and gain insight into graduate school. The intern is expected to develop a poster focusing on their summer experience and present it at CSU Extension's Annual Forum and other opportunities (e.g., CO-WY American Fisheries Society meeting).

8. **Mentor Style**
   The intern should be truly interested in field and laboratory aspects of applied fisheries research and engaging private partners in fisheries management. The intern is expected to be a good team member and communicator, while also performing some tasks independently.

9. **Availability of travel funds**
   Travel funds are available for field data collection and stakeholder engagement. Housing can be arranged on the Blue Valley Ranch when field trips occur over multiple days.