

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Development, testing, and refinement of engineering systems for monitoring acoustic resources and other environmental conditions in National Parks

Discipline: Interdisciplinary
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Student Participation: Yes, University Students
Effective Dates: 8/1/2016 - 2/31/2018
Funding Amount: \$428,428

Investigators and Agency Representative:

NPS Contact: Lochen Wood, Natural Sounds and Night Skies Division, Natural Resource Stewardship and Science, National Park Service, 1201 Oakridge Drive, Suite 100, Fort Collins, CO 80525, 970-267-2121, lochen_wood@nps.gov

Investigator: Dr. Mahmood R. Azimi-Sadjadi, Professor, Department of Electrical and Computer Engineering, C201E Engineering Building, Colorado State University, Fort Collins, CO 80523, 970-491-7956, azimi@engr.colostate.edu

Project Abstract: This project will continue development and testing of instruments and software that provide new capabilities for monitoring acoustic resources and other conditions in National Parks for periods of one year or more. No viable commercial options exist, and this project will explore and evaluate technological options to meet these needs. This project will advance scientific understanding and engineering capabilities to support more effective management of acoustic resources on public lands and to provide a higher quality experience for visitors. The research activity is intended to address several public interests: expanding scientific capabilities for monitoring sensory environments, promoting collaborative conservation working groups consisting of academic professionals and natural resource managers, furthering the education and career development of university students and research staff, providing opportunities for project participants to produce peer-reviewed papers and outputs for scientific conferences reporting these research results, stimulating interdisciplinary research and education at CSU by promoting interactions between the Warner College and the College of Engineering. This promotion of interdisciplinary activity may extend to hosting scientific workshops or conferences.

The NPS Subject Matter Expert (SME), Dr. Kurt Fristrup, will partner with the CSU research team in all aspects of this cooperative agreement: identification of overall research priorities, development of specific research and monitoring projects, identification or development of appropriate instrumentation, preparation of reports and publications. The SME and the staff of the Natural Sounds and Night Skies Division (NSNSD) will regularly participate in meetings with the CSU research team. The SME will also help coordinate the activities and findings of this project in relation to several other NPS research projects. NPS will provide specialized equipment for many project tasks. The NPS ATR will ensure that the CSU performance conforms to the terms of this task agreement, and approve any significant changes to the scope or the budget.

Keywords: Acoustic resources, monitoring, engineering systems, National Park Service, Colorado State University