



CTEMPs Summer Workshop 2025

Hands-on Workshop in Fiber-Optic Distributed Acoustic and Temperature Sensing for Environmental Monitoring



 **Dates:** August 11-15, 2025

 **Location:** University of Nevada, Reno & Nearby Field Sites

 **Website:** ctemps.org

Overview

The Center for Transformative Environmental Monitoring Programs (CTEMP) is hosting a **four-day, hands-on workshop** on **Distributed Acoustic Sensing (DAS)** and **Distributed Temperature Sensing (DTS)** for environmental monitoring applications. This workshop is designed for **early-career scientists, graduate students, postdocs, and faculty members** interested in applying fiber-optic sensing technology in **geophysics, hydrology, ecology, and structural monitoring**.

Participants Will Gain Experience In:

- ✔ Designing and deploying fiber-optic sensing experiments
 - ✔ Data acquisition and processing for DAS/DTS
 - ✔ Analyzing seismic, hydrological, and thermal data
 - ✔ Practical applications in environmental research
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Instructors

- **Mark Hausner** – Desert Research Institute
 - **Eileen Martin** – Colorado School of Mines
 - **Adrian Harpold** – University of Nevada, Reno
 - **Chris Kratt** – University of Nevada, Reno
 - **Sara Sayyadi** – University of Nevada, Reno
 - **Scott Tyler** – University of Nevada, Reno
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Field Setups

This year's workshop will feature **three distinct fiber-optic sensing setups**:

- **Dark Fiber:** Connected to the Reno cable network for real-world infrastructure monitoring
 - **Pre-installed DAS & DTS Cables:** Existing fiber-optic installations used for seismic and environmental sensing
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Program Highlights

- ◆ Introduction to DAS & DTS technology
 - ◆ Hands-on installation and calibration of fiber-optic sensors
 - ◆ Data collection and real-time DAS data observation
 - ◆ Field experiments on seismic activity, groundwater flow, and environmental processes
 - ◆ Networking and collaboration opportunities with field experts and new users
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Who Should Attend?

- ✔ Graduate students, postdocs, and faculty incorporating fiber-optic sensing in their research
- ✔ Scientists and engineers in geophysics, hydrology, civil engineering, and environmental sciences

✓ Researchers interested in seismic hazard assessment, hydrology, and structural health monitoring

Registration & Costs

💰 **Fee:** \$250 (includes lunches)

🚗 **Accommodation & Travel:** Self-funded (lodging and transportation can be arranged with workshop organizers; discount on accommodation is available)

🎓 **Student & Early Career Discounts:** Available upon request

📌 **Limited Spots Available – Register Early!**

🔗 **Registration Link:** [CTEMPs Summer Workshop Registration](#)

✉️ **Contact:** Sara Sayyadi, ssayyadi@unr.edu

What to Bring?

💻 Laptop with MATLAB/Python installed (if possible)

👕 Sturdy field clothing & boots

☀️ Sun protection (hat, sunscreen) & cold-weather gear

🚀 Enthusiasm to learn and collaborate!

Organized by:

CTEMPs – ctemps.org

Sponsors:

🌐 **National Science Foundation, University of Nevada Reno, Oregon State University, Colorado School of Mines, Desert Research Institute**

Join us in advancing environmental sensing technologies! 🚀

Workshop Agenda

The workshop will follow a structured agenda covering key aspects of **Distributed Acoustic Sensing (DAS)** and **Distributed Temperature Sensing (DTS)**. Participants will start with an **introduction to fiber-optic sensing technologies**, followed by hands-on installations of **DAS**

and DTS systems. Field exercises will focus on **data collection, troubleshooting, and real-time observations** of environmental processes.

Dedicated sessions will explore **data processing and analysis**, including:

- ◆ **Seismic event detection**
- ◆ **Groundwater monitoring applications**
- ◆ **Urban structures with DAS**

The workshop will also feature **collaborative discussions, networking opportunities, and industry partner demonstrations.** On the final day, participants will present their projects and take part in **wrap-up discussions** to consolidate learning outcomes and foster future collaborations.