

The Cutting Edge of Fiber Optics: Temperature and Acoustic Applications in Earth Science

Principles, Operation,
Data Analysis, and Demonstrations

December 10-11, 2016
Stanford University



The NSF Centers for Transformative Environmental Monitoring Programs (CTEMPs) will offer a two-day hands-on workshop on the theory, application and analysis of distributed fiber sensing. We are expanding the scope of this annual workshop to include both distributed temperature sensing (DTS) and distributed acoustic sensing (DAS). The workshop will accommodate a wide range of practitioners, from those interested in an introduction to the methods, to those wanting to learn state of the art data processing to getting the greatest possible precision from your data. Day 1 of the workshop will focus on fiber-optic physics and how distributed sensing can be used to infer temperature and strain. Day 2 (Sunday) will break out into two sessions, one focusing on temperature applications and the second on acoustic applications. Examples will be taken from the Ross Ice Shelf, the Dead Sea, atmospheric turbulence in Colorado, deep rock installations in Nevada, active and passive seismic monitoring and acoustic monitoring in pipes. All participants will have the opportunity to work directly with a wide range of DTS and DAS instruments, instrument manufacturers and cables designed specifically for environmental sensing. DTS and DAS manufacturers, fiber optic cable manufacturers, and CTEMPs staff will lecture and be available for consultation on special issues. Please feel free to bring data sets.

Day 1 (Dec. 10) will introduce the theory of distributed sensing on optical fibers as well as provide hands-on experience with instrument and fiber handling.

Day 2* (Dec. 11) will concentration of DTS aspects of field installation and data processing and calibration (Break-out group DTS) and applications and issues of acoustic sensing (Break-out Group DAS).

*Note that CTEMPs will also be offering a one day workshop on Unmanned Aircraft (UAS) Environmental Sensing in an adjacent venue on Sunday, December 11. It is possible to attend Day 1 of this workshop, and attend the UAS workshop on Day 2. See the attached flyer for UAS registration information.

Instructors

[John Selker](#) – Oregon State University (John.Selker@OregonState.edu) (for urgent issues: cell 541-829-0137)

[Scott Tyler](#) – University of Nevada, Reno. (styler@unr.edu)

Sponsors

[CTEMPs](#), through the National Science Foundation EAR Instrumentation and Facilities Program [Oregon State University](#); [University of Nevada Reno](#)

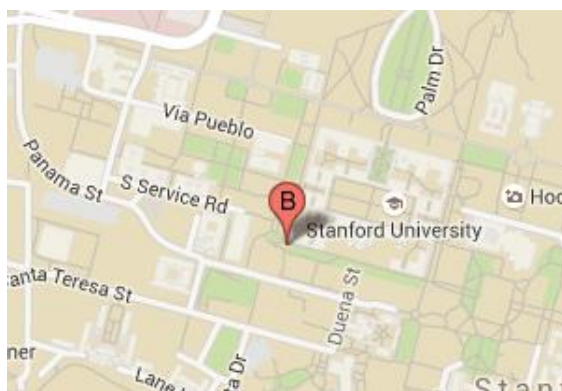
Participation: (Limited to 30 participants; by order of registration)

Registration: To reserve a space, contact Amy Zimmerman (541-737-2041 or amy.zimmerman@oregonstate.edu):
Registration is not binding until payment is received.

Cost: Participants may register for individual days (\$150/day professionals, \$75/day students) or for both days (\$200). If attending Day 2, please indicate your choice of Break-out Group (DTS or DAS). Light breakfasts, lunches, and light snacks included. Feel free to bring a typical treat from your locale. Please make your checks payable to “Oregon State University” and send them to the attention of Amy Zimmerman at Biological & Ecological Engineering, 116 Gilmore Hall, and Corvallis, OR 97331. For wire transfers, please contact Amy for directions. **We cannot accept credit card payments.**

Location

Stanford University
Bldg. 320 (Braun Bldg.)
Geology Corner
450 Serra Mall
Stanford, CA 94305



Accommodations

We have set aside a block of room at the Creekside Inn with a discounted rate. You can reserve by calling 650-493-2411 and using the Group code “DTS”.

www.creekside-inn.com

3400 El Camino Real
Palo Alto, CA 94306

