

**Geophysical Applications in Near Surface (GAINS) Virtual Training Course**  
Presented by the Environmental and Engineering Geophysical Society (EEGS)

All course modules are on Wednesdays from 3-5PM Mountain Time

Curriculum Outline (Revised January 2025)

Week No.	Date:	Lecture Topic:	Subject Matter Expert:
1	Oct 9	Introduction and Overview	Sarah Morton Rupert, Ph.D., Bureau of Reclamation Dale Werkema, Ph.D., Environmental Protection Agency
2	Oct 16	Survey planning and initial site characterization	EEGS Education Committee
3	Oct 23	Utility locating, storage tank and metal detection, corrosive material mapping	Trever Ensele, Prospect Geophysics
4	Oct 30	Dam/levee integrity & seepage monitoring	Phil Sirles, Collier Geophysics LLC
5	Nov 6	Hydrogeology such as aquifer mapping, groundwater/surface wave interaction	Scott Ikard, Ph.D., U.S. Geological Survey
6	Nov 13	Voids, karst, and sinkhole mapping/detection	Jacob Sheehan and Mia Painter, Schnabel Engineering
7	Nov 20	Pavement and concrete slab thickness, transportation and infrastructure health	Ryan North, Ph.D., ISC Geoscience, Inc.
November 25, 2024 - January 28, 2025: Break for winter holidays			
8	Jan 29	Shallow mineral deposits and hydrothermal resources	Karen Christopherson, Chinook Geoconsulting, Inc.
9	Feb 5	Hydrostratigraphic characterization, contaminant monitoring	Judy Robinson, Ph.D., and James St. Clair, Ph.D., Pacific Northwest National Laboratory
10	Feb 12	Seismic hazard (Vs30) mapping including low-velocity zones, liquefiable layers	Koya Suto,Terra Australis Geophysica Paul Somerville, Ph.D., AECOM
No GAINS session Feb 19			
11	Feb 26	Freeze-thaw, permafrost, glacial terrain mapping	Esther Babcock, Ph.D., Logic Geophysics and Analytics LLC
12	Mar 5	Structural/geologic mapping such as faults, fracture zones	J. Sage Wagner, Terracon
13	Mar 12	Course Summary and Review	EEGS Education Committee
14	Apr 14	In-person field demonstration at SAGEEP 2025 in Denver, Colorado	SAGEEP vendors

EEGS Education Committee:  
Sarah Morton Rupert, Ph.D., Bureau of Reclamation  
Paul Schwering, Pacific Northwest National Laboratory  
Miriam Johnston, Bureau of Reclamation  
Nadia Fantello, S&ME