

American Ground Water Trust Ground Water Institute for Teachers™

[This program is closed to outside registration and is being presented exclusively for 70 teachers from El Salvador, Guatemala, Honduras, Nicaragua, and Dominican Republic.]



In cooperation with

The Cooperative Association of States for Scholarship Program (CASS)
Palo Alto College, 1400 W Villaret Blvd, San Antonio, TX 78224

October 14th (1:00 - 4:30 pm) and October 15th (8:00am - 4:00pm)

The Ground Water Institute for Teachers program is a content-focused training opportunity with applicability to many grades and to adult education initiatives. The exciting and practical “science” of ground water can be applied to existing curriculum in many traditional subject areas. This training program has applicability way beyond the typical “earth science” perspective. Institute presenters are all top experts with a wealth of expertise. The program provides real-life example of the applications of science and technology to water issues. The American Ground Water Trust has completed sixty Institutes in 17 states involving 1,500+ educators.

The Cooperative Association of States for Scholarship Program (CASS), provides intensive instruction to rural teachers from Central America and the Caribbean with funds provided by the U.S. Agency for International Development (USAID). This program provides higher education and training opportunities to students and young professionals from underserved communities in Mexico, Central America, and the Caribbean. Since 2000, the program has created and refined an intensive yearlong professional development program. The rural educators selected for the program are charged with implementation of local leadership initiatives in the rural schools of their home communities after their year of training at Palo Alto College.

INSTITUTE PROGRAM – Thursday, October 14th – Multifunction Room (Ozuna 126)

1:00 pm 1:30 pm

WELCOME AND INTRODUCTION

Greg Wukasch, San Antonio Water System, San Antonio, TX

Andrew Stone, American Ground Water Trust, Concord, NH

Ann Tihansky, United States Geological Survey, St Petersburg, FL

Julia Jarrell, Office of International Programs, Palo Alto College, San Antonio TX

- What we expect to achieve at the Institute
- The importance to teachers of a foundation of basic environmental concepts
- Adding “water and environmental issues” to traditional school subjects
- The importance of having citizens understand environmental “cause and effect”

1:30 - 2:15

THE BASICS OF ROCKS AND WATER

Andrew Stone, American Ground Water Trust, Concord, NH

- Geology (where do rocks come from? Why are there so many different types?)
- How water moves through the landscape (water cycle)
- Water budgets (rain, evaporation, flow in rivers, storage underground)
- How do we know how much water we have available underground?
- Water from springs (What keeps the water flowing?)

2:15 – 3:15

WATER SUPPLY CHALLENGES IN RURAL AREAS

John Lane, United States Geological Survey, Storrs, CT

- Facilitated discussion from teachers (El Salvador, Guatemala, Honduras, Nicaragua, Dominican Republic) about principal rural water supply problems

John Lane, USGS

- The interconnectedness of water resources and human water systems
- Selecting well sites, using geologic information to make sound decisions
- How water sources are selected in rural areas
- Comparing water types and related uses
- Technology and new science applications
- Village scale practical solutions
- How the water systems work (wells, pumps etc.)

GENERAL DISCUSSION

- The role of schools/communities in protecting local water supply and environmental quality

3:15 – 3:30

BREAK

3:30 – 4:30

SCIENCE USED TO ENHANCE MANAGEMENT OF WATER RESOURCES

George Ozuna, United States Geological Survey, San Antonio, TX

- Local water & environmental challenges in Texas,
- Problems with wells and water supplies
- How science helps solve problems

4:00 END OF DAY ONE (Hablamos)

INSTITUTE PROGRAM – Friday, October 15th – Multifunction Room (Ozuna 126)

8:00 – 9:00 am

THE MAIN THREATS TO WATER QUALITY

Andrew Stone, American Ground Water Trust, Concord, NH

- What is “good quality water” for drinking supply?
- Sources of biological and microbiological threats
- Sources of chemical compounds that could impact water quality
- Challenge of competing water demands for homes, agriculture and industry
- Comparison of risks from surface water and groundwater

9:00 – 10:00

LIMESTONE LANDSCAPES (KARST, CAVES AND SINK HOLES)

Ann Tihansky, United States Geological Survey, St Petersburg, FL

- Limestone geology basics (how limestone rocks were made)
- Simple chemistry of how limestone can dissolve
- How caves and subterranean passages are made

- How sink-holes are formed
- How do we know where the water flows underground?
- Video of a clean water cave and a dirty water cave
- How to protect groundwater quality in karst areas
- Demonstration of how to make a classroom sinkhole model

10:15 – 10:30 BREAK

10:30 – 12:00

GROUNDWATER HANDS-ON ACTIVITIES IN AND OUT OF THE CLASSROOM

Greg Wukasch and Lynne Christopher, San Antonio Water System Education, San Antonio, TX

- Groundwater Sleuthing – (Water drop detective work)

12:00 – 1:00 LUNCH

1:00 – 1:45 pm

USGS INTERNATIONAL (OBJECTIVES & PROGRAMS)

Jean Weaver, United States Geological Survey International Programs, Reston, VA

- USGS role in sharing earth science technology and expertise
- Examples of collaboration from the Caribbean and Central & South America
- Global partnerships in resource management, public health and safety

1:45 – 2:30

USGS EDUCATIONAL RESOURCES

Ann Tihansky, United States Geological Survey, St Petersburg, FL

- Importance of public education about earth science
- Guide to teacher materials and student-friendly web information

2:30 – 2:45 BREAK

2:45 – 3:15

MEASUREMENT OF WATER MOVING IN THE HYDROLOGIC SYSTEM

Andrew Stone, American Ground Water Trust, Concord, NH

- Simple “water” measurements and recording as the basis for student learning
 - Daily weather records
 - Classroom (evaporation, plant transpiration, water quality)
 - Outside (Rainfall, infiltration, stream flow, water quality)

3:15 – 3:45

LET’S LOOK AT ALL THE HANDOUT MATERIALS

Greg Wukasch, San Antonio Water System, San Antonio, TX

Andrew Stone, American Ground Water Trust, Concord, NH

Ann Tihansky, United States Geological Survey, St Petersburg, FL

- How can all the handouts best be used?

3:45 – 4:00

HOW CAN WE HELP YOU? FOLLOW-UP SUPPORT FOR CASS TEACHERS

4:00pm PROGRAM ENDS