# Agenda

**Presented by Daniel S. Fisher, P.G.**

**Overview of Groundwater Modeling**
- Common purposes and uses of groundwater models
- Types of groundwater models
- General process of groundwater modeling

**Principles of Groundwater Flow and Solute Transport**
- Aquifers and aquifer properties
- Groundwater flow and hydraulic gradient
- Solute transport concepts

**Type of Groundwater Models**
- Conceptual models
- Analytical models
- Numerical models

**Numerical Flow Modeling**
- Governing equation for groundwater flow
- Model domain and discretization
- Model boundary conditions (fluxes)
- Model material properties
- Model calibration

**MODFLOW Summary**
- Design of MODFLOW
- MODFLOW processes and packages
- MODFLOW discretization
- MODFLOW GUIs

**Groundwater Modeling Case Studies & Wrap-up**
- Case studies
- Course summary

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Recordings of this webinar are available for purchase. See course listing online for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

**Introduction to Groundwater Modeling**
Live, Interactive Webinar - Tuesday, July 16, 2024



HalfMoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

# Learning Objectives

***You'll be able to:***

***Examine*** common purposes and uses of groundwater models.

***Explore*** the general process of groundwater modeling.

***Review*** principles of groundwater flow and solute transport.

***Discuss*** conceptual, analytical and numerical groundwater models.

***Examine*** numerical flow modeling.

***Get*** a summary of MODFLOW functionality.

***Evaluate*** groundwater modeling case studies.

**HalfMoon Education Inc.,**
**Your LIVE Education Leader Presents**

# Introduction to Groundwater Modeling

*Live, Interactive Webinar - Tuesday, July 16, 2024*

***Explore*** common purposes and uses of groundwater models

***Learn*** about principles of groundwater flow and solute transport

***Examine*** conceptual, analytical and numerical models

***Study*** the design of MODFLOW and learn about MODFLOW processes and packages

***Discuss*** groundwater modeling case studies

## Continuing Education Credits

***Professional Engineers***
6.0 PDHs*

***Floodplain Managers***
6.0 ASFPM CEC

***Geologists***
6.0 PDHs*

*not approved in New York

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# Webinar Information

**Online - Tuesday, July 16, 2024**

**Log into Webinar**
8:30 - 9:00 am CDT

**Break**
12:00 - 12:30 pm CDT

**Morning Session**
9:00 am - 12:00 pm CDT

**Afternoon Session**
12:30 - 4:00 pm CDT

## Tuition

**$339** for individual registration.
**$309** for two or more registrants from the same company at the same time.

***Included with your registration:*** *PDF seminar manual.*

## How to Register

- Visit us online at www.halfmoonseminars.org
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# Faculty

**Daniel S. Fisher, P.G.** *Hydrogeologist with the Florida Geological Survey and Owner/Principal of Wetstone Solutions LLC*

Mr. Fisher has more than 30 years of experience constructing hundreds of customized, site-specific, calibrated groundwater flow and contaminant transport models for both private and public clients. As a senior level hydrogeologist, he brings a comprehensive understanding of geology, hydrogeology, chemistry, mathematics, and physics to the table while using specialized investigative techniques such as graphical analyses, statistics, groundwater flow modeling and contaminant transport modeling. His experience includes all aspects of remedial and hydrogeological investigations including soil/groundwater sampling programs; groundwater monitoring system design; monitoring and extraction well installation and development; aquifer characterization, testing and evaluation; and many types of environmental data collection, management, and interpretation techniques in many geologic terranes. He has experience with conceptual and actual designs for remediation of fuel and solvent-related soil and groundwater contamination at privately and publicly owned waste management sites. Mr. Fisher knows the natural chemical characteristics of groundwater, as well as the occurrence and behavior of man-made organic and inorganic contaminants. His experience allows him to conceptualize and describe complex problems and to present solutions in three-dimensions in order to bring clarity to complex technical discussions. Mr. Fisher uses a wide variety of mathematical and modeling tools including: GMS, MODFLOW, MODPATH, MT3DMS, RT3D and PEST as well as simpler, less labor-intensive analytical models.

# Credit Information

This webinar is open to the public and is designed to qualify for 6.0 PDHs for professional engineers and geologists in most states. *This course is not approved in New York and HalfMoon Education has not applied for state geologist continuing education approval in states requiring such; please refer to specific state rules to determine eligibility.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider License No: CEA362), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700) and North Carolina (S-0130).

This Association of State Floodplain Managers has approved this course for 6.0 CECs for floodplain managers.

Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

### On-Demand Credits

The preceding credit information only applies to the live presentation. This course in an on-demand format is not pre-approved by any licensing boards and may not qualify for the same credits; please consult your licensing board(s) to ensure that a structured, asynchronous learning format is appropriate.

# Additional Learning

**Generation Interconnection under the RTO Model and Changes Coming from Order 2023**
- Tuesday, June 25, 2024 | 2:00 - 4:00 pm CDT

**How to Design, Construct and Maintain a Reinforced Steep Slope**
- Tuesday, June 25, 2024 | 9:00 am - 12:00 pm CDT

**Urban Tree Preservation in the Eastern U.S.**
- Tuesday, June 25, 2024 | 8:00 am - 3:30 pm CDT

**Manure Storage Design, Environmental Impacts, and Impact Mitigation Approaches**
- Wednesday, June 26, 2024 | 9:00 am - 12:15 pm CDT

**Passive House Design and Construction**
- Wednesday, June 26, 2024 | 9:00 am - 4:30 pm CDT

**Deep Dive into Retaining Wall Layout for Site Designers**
- Tuesday, July 2, 2024 | 9:00 - 11:00 am CDT

**Modular Design and Construction**
- Tuesday, July 2, 2024 | 1:00 - 3:00 pm CDT

**How to Naturalize an Existing Stormwater Detention/Retention Basin**
- Wednesday, July 10, 2024 | 2:00 - 4:00 pm CDT

**Nevada's Great Basin Regional Aquifer System: Basic Groundwater Hydrology and Groundwater Flow**
- Monday, July 15, 2024 | 9:00 am - 12:15 pm CDT

**Servicing and Maintaining EV Battery-Backed Chargers**
- Monday, July 15, 2024 | 1:00 - 3:00 pm CDT

**It Doesn't End in August – Extending Interest in the Garden**
- Tuesday, July 16, 2024 | 8:30 - 11:15 am CDT

**Roadmap to Ethical Issues in Construction: A Primer for Design Professionals**
- Tuesday, July 16, 2024 | 11:00 am - 1:00 pm CDT

**Brownfield Planning and Redevelopment**
- Wednesday, July 17, 2024 | 10:00 am - 12:00 pm CDT

**Deep Dive into Cool Roofs and Cool Walls**
- Wednesday, July 17, 2024 | 12:30 - 2:30 pm CDT

**Landscaping for Pollinators**
- Thursday, July 18, 2024 | 10:00 am - 12:00 pm CDT

**Deep Dive into PFAS in Our Water**
- Wednesday, July 24, 2024 | 9:00 am - 12:15 pm CDT

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