



## **The Scientist in the Courtroom: Sex, Lies, and Videotape**

**Presented by Dr. Don Siegel,**  
Syracuse University, Syracuse, New York

October 18, 2007

The burden of proof in applied and academic branches of hydrogeology has different standards in the practice of hydrogeology. A generally high burden of proof in academic hydrogeology results comes from rigorous peer review. In contrast, lower burden of proof is required for applied hydrogeology that provides information to resolve legal disputes and arrive at regulatory political consensus on environmental issues. The difference between how hydrogeology is practiced appears most striking in civil actions, when the burden of proof consists of “more likely than not.” Since, expert witnesses cannot effectively be tried for perjury, this low standard of proof leads to outright scientific fraud under oath in the courtroom.

Recently, the 2007 Intergovernmental Panel on Climate Change (IPCC) report “quantified” scientific expert opinion within a numerical scale. This quantification may have unanticipated consequences. Forcing a hydrogeologist to quantify his or her professional judgment is inappropriate. When quantification cannot be scientifically made, the integrity of the scientific method and proper decision making are both compromised.

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Presenting October’s September’s talk is Don Siegel of the Department of Earth Sciences, Syracuse University. Dr. Siegel has taught and done research on a broad range of topics related to hydrogeology and aqueous geochemistry at SU for over 25 years. Prior to this, he served as a hydrologist and geochemist for the U.S. Geological Survey. Dr. Siegel’s areas of research expertise include various aspects of wetland hydrology and biogeochemistry, groundwater-surface water interaction, stable isotope geochemistry, and contaminant hydrogeology.

Siegel’s current interest in the application of hydrogeology in the regulatory and legal process stems from his experience providing scientific expertise to State, Federal, and private entities and his long-term experience serving on environmental panels for the National Research Council of the National Academy of Sciences.



**MEETING LOGISTICS:** The meeting will take place on Thursday, October 18, 2007 at Onondaga Community College, Room 369 Ferrante Hall (3<sup>rd</sup> Floor). Directions to OCC are provided below.

A social hour will start at 5:30 pm and will be followed by a dinner starting at 6:30 p.m. The main presentation by Mr. Kappel will begin at about 7:30 p.m.

The cost of dinner is \$15 for members; \$17 for non-members, the first five students will receive free sponsorship to the meeting. People may also attend the presentation only for a nominal fee of \$3. Please RSVP by Monday, October 15th to Annette at [info@pwinc.com](mailto:info@pwinc.com) or (315) 437-1429.

**Directions to Onondaga Community College (OCC)** <http://www.sunyocc.edu/>

**From North of Syracuse, Route 81**

- Take Rt. 81 south to exit 17 (Brighton Ave.).
- Take first left onto State St.
- Continue to second light, take right turn, followed by a quick left onto Salina St.
- Continue to intersection of Rt. 173 (W. Seneca Turnpike), take a right.
- Continue on Rt. 173 1.8 miles to intersection of Rt. 175. Bear left onto Rt. 175.
- Continue 0.8 miles to second traffic light. Turn right at College entrance.

**From South of Syracuse, Route 81**

- Take Rt. 81 north to exit 16 (Nedrow).
- Turn left off exit on to Salina Street (Rt. 11) to Rt. 173 (W. Seneca Turnpike).
- Turn left on to Rt. 173 and continue 1.8 miles to intersection of Rt. 175. Bear left onto Rt. 175.
- Continue on Rt. 175 0.8 miles to second traffic light. Turn right at College entrance.

**From Downtown Syracuse**

- Take Salina St. south to Rt. 173 (W. Seneca Turnpike) and turn right.
- Continue on Rt. 173 1.8 miles to intersection of Rt. 175. Bear left onto Rt. 175.
- Continue on Rt. 175 0.8 miles to second traffic light. Turn right at College entrance.

**From New York State Thruway, East or West**

- Take Thruway exit #39 to Rt. 690 East.
- Continue on Rt. 690 to Rt. 695.
- Bear left on Rt. 695 to Fairmount/Rt. 5.
- Turn right on Rt. 5 (West Genesee St.) and follow to third traffic light.
- Turn left to Rt. 173 (Onondaga Rd.) and proceed 4 miles. Turn right at College entrance.

**Location of Ferrante Hall: See map on next page.**

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