

**Visibility Monitoring Data Analysis**

August 28-29, 2001 Fort Collins,  
Colorado

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

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**HOTEL DEADLINE**

July 27, 2001

**REGISTRATION DEADLINE**

July 27, 2001

Visibility Monitoring Data  
Analysis Workshop

**WESTAR, NPS  
& EPA EOG**

**Visibility  
Monitoring Data  
Analysis  
Workshop**

**August 28 - 29, 2001**

Colorado State University  
Weber Building, Room 224D  
Fort Collins, Colorado

**For Additional Training Opportunities  
see WESTAR's Website:**

**[www.westar.org](http://www.westar.org)**



# Visibility Monitoring Data Analysis

## Tuesday, August 28<sup>th</sup>

7:30	AM	Registration
8:00	AM	Welcome and Introductions (Bob Lebens/William Malm):
8:15	AM	Regional Haze Rule Requirements (Marc Pitchford & Rodger Ames): <ul style="list-style-type: none"> <li>• Monitoring Data Analysis Requirements</li> </ul>
9:00	AM	Introduction of Visibility Concepts (William Malm): <ul style="list-style-type: none"> <li>• Scattering: Forward-Back</li> <li>• Absorption</li> <li>• Path Radiance</li> <li>• Contrast &amp; Contrast Transmittance</li> </ul>
9:30	AM	Visibility Perception (William Malm): <ul style="list-style-type: none"> <li>• Visibility Metrics - Visibility Range, Extinction, &amp; Deciview</li> <li>• Human Perception &amp; Values</li> </ul>
10:00	AM	Break
10:15	AM	Aerosol Concepts (Derek Day) <ul style="list-style-type: none"> <li>• Primary vs. Secondary</li> <li>• Bimodal Distributions</li> <li>• Five Major Aerosol Species</li> <li>• Hygroscopicity</li> </ul>
10:45	AM	IMPROVE Overview (Bob Eldred - UCD) <ul style="list-style-type: none"> <li>• Equipment Overview</li> <li>• Analytical Methods</li> <li>• Precision &amp; Bias</li> <li>• Sitting Criteria</li> <li>• QAPP Overview</li> </ul>
11:45	AM	CIRA QA/QC Procedures (Jim Sisler)
12:00	PM	Lunch (on your own)
1:00	PM	IMPROVE Trends (emphasis on the Western U.S.) <ul style="list-style-type: none"> <li>• Know Biases in Current Data set: Sulfate and Nitrate Issues (Bret Schichtel)</li> </ul>

			<ul style="list-style-type: none"> <li>• Spatial Patterns (Jim Sisler)</li> <li>• Temporal Trends (Jim Sisler &amp; Kristi Gebhart)             <ul style="list-style-type: none"> <li>▶ Seasonal Variability</li> <li>▶ Diurnal Variability</li> <li>▶ Long-Term Trends</li> </ul> </li> </ul>		
2:00	PM	Source Receptor Relations: Receptor Models & Source Apportionment (Kristi Gebhart) <ul style="list-style-type: none"> <li>• Chemical Mass Balance (CMB)</li> <li>• Tracer Mass Balance Regression (TMBR)</li> <li>• Back Trajectory Analysis</li> <li>• Empirical Orthogonal Function (EOF)</li> <li>• Unmix (Rich Poirot)</li> </ul>			
3:00	PM	Break			
3:15	PM	Air Quality Modeling (John Vimont/Jeff Collett) <ul style="list-style-type: none"> <li>• Wind Fields</li> <li>• Chemistry</li> </ul>			
3:45	PM	Optical Methods Equipment -- Demonstration (William Malm & John Molenar) <ul style="list-style-type: none"> <li>• Transmissometer</li> <li>• Nephelometer</li> <li>• Digital Camera Systems</li> <li>• Data Processing</li> <li>• Strengths &amp; Weaknesses Including Precision &amp; Bias</li> </ul>			
4:15	PM	Field Trip (or classroom demonstration) of Transmissometer, Nephelometer and Digital Camera at the Transmissometer/Test Facility			
5:00	PM	Adjourn for the Day			
<b><u>Wednesday, August 29<sup>th</sup></u></b>					
8:00	AM	EPA Guidance for Natural Background & Tracking (Rodger Ames & Marc Pitchford)			
9:00	AM	IMPROVE/WRAP Websites (Bret Schichtel)			

			10:30	AM	Working with IMPROVE Aerosol Data (Bret Schichtel/Jim Sisler/Scott Copeland) <ul style="list-style-type: none"> <li>• Retrieving Data from the WRAP Website &amp; Importing to Excel</li> <li>• Apportionment of Fine Mass by Season and Year</li> <li>• Reconstruct Light Extinction and Apportion Aerosol Contributions by Season and Year</li> </ul>
			12:00	PM	Lunch (on your own)
			1:00	PM	Working with IMPROVE Aerosol Data (continued) <ul style="list-style-type: none"> <li>• Examine Fine Mass, Fine Mass Constituents and Light Extinction Seasonal Trends</li> <li>• Examine Long-Term Trends By Season and Year for:             <ul style="list-style-type: none"> <li>▶ Fine Mass, Sulfate, Organics, Elemental Carbon, Fine Soil and Coarse Mass;</li> <li>▶ Reconstructed Light Extinction, Light Scattering Due to Sulfate, Organics, and Soil, and Light Absorption from Elemental Carbon</li> </ul> </li> </ul>
			2:00	PM	Win Haze/Visual Haze (John Molenar & Rodger Ames) <ul style="list-style-type: none"> <li>• Exploration of the Impact of Aerosol Chemistry</li> <li>• Physical Properties &amp; Relative Humidity on the Scene</li> </ul>
			3:00	PM	Retrieving & Using Back Trajectories from the READY Website

3:30	PM	The Unmix & CMB Receptor Models (Kristi Gebhart)
4:00	PM	Source Contribution to Visibility at Brigantine New Jersey (Rich Poirot) <ul style="list-style-type: none"> <li>• Integration of Unmix Results</li> <li>• Airmass History Analysis</li> </ul>
4:45	PM	Weight of Evidence (Bret Schichtel & Rich Poirot) <ul style="list-style-type: none"> <li>• Use of Alternative Information</li> </ul>
5:00	PM	Adjourn

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## ■ ABOUT THE WORKSHOP

WESTAR's Western Region Training Center, in cooperation with the National Park Service (NPS), and EPA OAQPS's Education and Outreach Group (EOG), will host this workshop for air quality staff. The emphasis of the workshop will be on helping state agency monitoring/data analysis staff become familiar with IMPROVE and other visibility monitoring data and techniques for manipulating the data to support regional haze rule SIP development.

The training is intended for air staff and is open to state & local air regulatory air staff and EPA & FLM staff. Staff from WESTAR member states receive registration preference.

## ■ HOTEL INFORMATION

**Best Western University Inn**  
914 S. College Avenue  
Fort Collins, CO 80524  
Phone: (970) 484-1984  
Toll Free: (800) 528-1234

NOTE: PLEASE IDENTIFY YOURSELF AS AN ATTENDEE OF THE CSU - IMPROVE CONFERENCE AT CSU.

WESTAR has arranged discounted room rates of \$55.00/day (single+ tax).

Please make your reservation by calling **(970) 484-1984** or **(800) 528-1234**; be sure to identify yourself as an attendee of the CSU/WESTAR IMPROVE Conference. Cut off for making hotel reservations is **July 27, 2001**. After this date, rooms will be available on a space-available basis and cannot be guaranteed at the WESTAR rate. All attendees and presenters need to make their own reservations.

IT IS APPROXIMATELY 500 YARDS FROM THE BEST WESTERN INN TO THE WEBER BUILDING

## ■ WORKSHOP LOCATION INFO

**Colorado State University**  
Weber Building, Room 224D  
Oval Drive  
Fort Collins, Colorado

SEE ATTACHED MAP or Visit Colorado State University's webpage for a campus map at: [www.colostate.edu/Level2/friends.htm](http://www.colostate.edu/Level2/friends.htm)

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## ■ AIRPORT TRANSPORTATION

Two shuttle providers can transport attendees from Denver International Airport to the Best Western University Inn:

- 1) Shamrock Shuttle: (970) 686-9999
- 2) Airport Express: (877) 482-0505

Please call the providers for rates and schedules.

