



34<sup>th</sup> **WERC**  
**ENVIRONMENTAL**  
**DESIGN CONTEST**  
NMSU COLLEGE OF ENGINEERING

**INNOVATING FOR A GREENER PLANET**

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## **TEAM SCHEDULES**

- 3-DAY
  - ORALS
  - POSTER
  - BENCH
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## Team Schedule

Sunday		April 7	
1:00–4:00 PM	Registration & Bench-Scale Set-up	Tortugas Gallery	
4:00–4:30 PM	Welcome Ceremony	Theater	
4:30–5:45 PM	Flash Talks, Round 1	Ventanas 1 and 3	
6:00–7:00 PM	Dinner and Keynote Address	Ventanas Ballrooms	
7:00–7:45 PM	Flash Talks, Final Round	Ventanas Ballrooms	
7:45–8:15 PM	Mandatory Safety Meeting	Ventanas Ballrooms	
8:15–9:00 PM	Bench Scale Set-up & Commissioning (No chemicals or use of major tools)	Tortugas Gallery	
9:00 PM	Bench-scale area Closes	Tortugas Gallery	
Monday		April 8	
8 AM–8 PM		<i>Bench-scale area open. PPE Required</i>	
8 AM–1:15 PM	Commissioning & Sample Distribution (Experiments run only after team is commissioned.)	Tortugas Gallery Safety Table Ventanas 1, 2, or 3	
8:00 AM–12:15 PM	Oral Presentations	Check schedule	
12:15–12:45 PM	Time allowed for observing Solar Eclipse (Max eclipse @12:25:59 PM)	Courtyard	
12:45–1:30 PM	Lunch served	Ventanas Ballrooms	
1:30–1:45 PM	Teams move posters to Ventanas	Ventanas Ballrooms	
1:45–2:30 PM	Poster Judging -Judges only	Ventanas Ballrooms	
2:30–3:30 PM	Poster Judging -Teams present	Ventanas Ballrooms	
8:00 PM	Bench-Scale Area Closes	Tortugas Gallery	
Tuesday		April 9	
8 AM–4 PM		<i>Bench-scale area open</i>	
8 AM-1:00 PM		<i>Peer Judging—Teams visit other booths as time permits</i>	
8:30 AM–12:30 PM	Bench-Scale Demonstrations	Tortugas Gallery	
12:30 PM–1:00 PM	Officially Scheduled Peer Judging Session	Tortugas Gallery	
1:00–1:45 PM	Lunch served	Ventanas Ballrooms	
1:00–1:45 PM	Faculty Advisors Lunch with Ginger	Rio Hondo	
2:00 PM	Sample Submission/Bench Reports Due	Safety Table	
2:00–4:00 PM	Decommissioning & Waste Disposal	Sign up at Safety Table	
4:00 PM	Waste Disposal Turn-in Due	Safety Table	
4:00–5:30 PM	Game Night, Reception, Taco Bar	Courtyard/Ventanas	
6:00 PM	Peer Judging Results Due	Information Desk	
Wednesday		April 10	
5:30–8:00 PM	Dinner & Awards Ceremony	Ventanas Ballrooms	

## Monday Morning, 8 April

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### Oral Presentation Schedule

Time	Ventanas 1 (Tasks 4 and 3)	Ventanas 2 (Task I)	Ventanas 3 (Tasks 5 and 2)
8:00 – 8:30 AM	03-WashU-4	16-LSU-1	13-Ohio-5
8:45 – 9:15 AM	11-MTU-4	05-Ole Miss-1	04-WashU-5
9:30 – 10:00 AM	17-LSU-4	09-Cal Poly, SLO-1	02-NMSU-5
10:15 – 10:45 AM	08-Cal Poly, SLO-4	10-MTU-1	20-U of A-5
11:00 – 11:30 AM	07-Cal Poly, SLO-3	19-WSU-1	18-LSU-5
11:45 – 12:15 PM	12-UI-3	01-NAU-1	15-NMSU-2
Break: 12:15—12:45 PM	Maximum partial Solar Eclipse in Las Cruces, NM @ 12:25:59 PM. Pick up eclipse-viewing glasses and enjoy viewing in the Courtyard! Teams may be in the bench-scale area as well.		
12:45 – 1:30 PM	Lunch		
1:30 – 1:45	Teams will set up posters on easels in Ventanas Ballrooms for Poster Session		
1:45—2:30	Private Poster-Judging Session. Judges only.		
2:30 – 3:30 PM	Open Poster Session. Teams Present. See schedule below.		

## Monday Afternoon, 8 April

Poster Session Judging, Ventanas Ballroom (P. 1 of 3)

Time	Task 1 – Stormwater Management for Community Resilience		
Poster Judging Session. Teams present	<b>Judges:</b> Buahin, Jastrow	<b>Judges:</b> Howell, Gibbs	<b>Judges:</b> Sun, Tonander
2:30—2:40	19-WSU-I	05-Ole Miss-I	10-MTU-I
2:40—2:50	16-LSU-I	09-Cal Poly, SLO-I	01-NAU-I
2:50—3:00	05-Ole Miss-I	10-MTU-I	19-WSU-I
3:00—3:10	09-Cal Poly, SLO-I	01-NAU-I	16-LSU-I
3:10—3:20	10-MTU-I	19-WSU-I	05-Ole Miss-I
3:20—3:30	01-NAU-I	16-LSU-I	09-Cal Poly, SLO-I

Time	Task 2 – DERMS Resource Management Systems for the Electrical Grid	
Poster Judging Session. Teams present	<b>Judges:</b> Calvillo, Hightower	<b>Judges:</b> Salazar, Sosa
2:30—2:40	15-NMSU-2	
2:40—2:50		15-NMSU-2

## Monday Afternoon, 8 April

Poster Session Judging, Ventanas Ballroom (P. 2 of 3)

Time	Task 3 – Sodium Sulfate for A Circular Economy – Community-based Solutions		
Poster Judging Session—Teams present	<b>Judges:</b> Aragon, Cappelle	<b>Judges:</b> Olave, Pena	<b>Judges:</b> West, Lopez
2:30—2:40	07-Cal Poly, SLO-3	12-UI-3	
2:40—2:50	12-UI-3	07-Cal Poly, SLO-3	
2:50—3:00			12-UI-3
3:00—3:10			07-Cal Poly, SLO-3

Time	Task 4 – Modular Carbon Dioxide Removal for Community Integration		
Poster Judging Session—Teams present	<b>Judges:</b> Leodinh, Anyanwu	<b>Judges:</b> Mondal, Neff, Woodall	<b>Judges:</b> Roberts, Struttman
2:30—2:40	03-WashU-4	11-MTU-4	17-LSU-4
2:40—2:50	11-MTU-4	17-LSU-4	08-Cal Poly, SLO-4
2:50—3:00	17-LSU-4	08-Cal Poly, SLO-4	03-WashU-4
3:00—3:10	08-Cal Poly, SLO-4	03-WashU-4	11-MTU-4

## Monday Afternoon, 8 April

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Poster Session Judging, Ventanas Ballroom (P. 3 of 3)

Time	<b>Task 5 – Treatment of Water Recovered from Salt Water Disposal Wells for Hydrogen Production</b>		
Poster Judging Session— Teams present	Judges: Delgado, Stearns Visairo	Judges: Fowlie, Griffith	Judges: Shaw, Karbakhsh Shi
2:30—2:40	13-Ohio-5	02-NMSU-5	18-LSU-5
2:40—2:50	04-WashU-5	20-U of A-5	13-Ohio-5
2:50—3:00	02-NMSU-5	18-LSU-5	04-WashU-5
3:00—3:10	20-U of A-5	13-Ohio-5	02-NMSU-5
3:10—3:20	18-LSU-5	04-WashU-5	20-U of A-5



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**DIAMOND**

**THANK  
YOU  
SPONSORS!**

**DIAMOND**

**PLATINUM**

**PLATINUM**

**GOLD**

**GOLD**

**SILVER**

**SILVER**

**COPPER**

**IRON**

**IRON**



## Tuesday, 9 April

### Bench-scale Judging, Tortugas Gallery (P. 1 of 3)

Time	Task 1 – Stormwater Management for Community Resilience		
	Judges: Buahin, Gibbs	Judges: Howell, Sun	Judges: Jastrow, Tonander
8:30—9:00	19-WSU-1	05-Ole Miss-1	10-MTU-1
9:00—9:30	16-LSU-1	09-Cal Poly, SLO-1	01-NAU-1
9:30—10:00	05-Ole Miss-1	10-MTU-1	19-WSU-1
10:00—10:30	09-Cal Poly, SLO-1	01-NAU-1	16-LSU-1
10:30—11:00	Break	Break	Break
11:00—11:30	01-NAU-1	19-WSU-1	05-Ole Miss-1
11:30—12:00	10-MTU-1	16-LSU-1	09-Cal Poly, SLO-1
12:00—1:00	Judge your Peers and Complete the Survey		

Time	Task 2 – DERMS Resource Management Systems for the Electrical Grid	
	Judges: Calvillo, Sosa	Judges: Salazar, Hightower
9:00—9:30		15-NMSU-2
9:30—10:00	15-NMSU-2	
10:00—1:00	Judge your Peers and Complete the Survey—any time until 1:00 PM.	



## Tuesday, 9 April

### Bench-scale Judging, Tortugas Gallery (P. 2 of 3)

Time	Task 3 – Sodium Sulfate for A Circular Economy – Community-based Solutions		
	Judges: West, Cappelle	Judges: Olave Aragon	Judges: Pena Lopez
9:00—9:30	07-Cal Poly, SLO-3	12-UI-3	
9:30—10:00	12-UI-3	07-Cal Poly, SLO-3	
10:00—10:30			12-UI-3
10:30—11:00			07-Cal Poly, SLO-3
11:00—1:00	Judge your Peers and Complete the Survey—any time until 1:00 PM.		

Time	Task 4 – Modular Carbon Dioxide Removal for Community Integration		
	Judges: Leodinh, Neff, Roberts	Judges: Mondal, Anyanwu	Judges: Struttman, Woodall
8:30— 9:00	03-WashU-4	11-MTU-4	17-LSU-4
9:00—9:30	11-MTU-4	03-WashU-4	08-Cal Poly, SLO-4
9:30—10:00	17-LSU-4	08-Cal Poly, SLO-4	03-WashU-4
10:00—10:30	Break	Break	Break
10:30—11:00	08-Cal Poly, SLO-4	17-LSU-4	11-MTU-4
11:00—1:00	Judge your Peers and Complete the Survey—any time until 1:00 PM.		

## Tuesday, 9 April

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### Bench-scale Judging, Tortugas Gallery (P. 3 of 3)

Time	Task 5 – Treatment of Water Recovered from Salt Water Disposal Wells for Hydrogen Production		
	Judges: Delgado, Fowlie Karbakhsh	Judges: Shi Griffith	Judges: Shaw Stearns Visairo
9:00—9:30	18-LSU-5	02-NMSU-5	20-U of A-5
9:30—10:00	20-U of A-5	13-Ohio-5	18-LSU-5
10:00—10:30	02-NMSU-5	04-WashU-5	13-Ohio-5
10:30—11:00	Break	Break	Break
11:00—11:30	13-Ohio-5	18-LSU-5	04-WashU-5
11:30—12:00	04-WashU-5	20-U of A-5	02-NMSU-5
12—1:00	Judge your Peers and Complete the Survey		

# WERC Safety — An Imperative

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## Introduction

Best safety practices are very important and in fact imperative to the WERC Design Contest. This event is being conducted in a multi-use public building and not a dedicated laboratory with specialized facilities. This same space hosts weddings, dinners, conferences, dances, and other special events. Hence, all of your bench scale demonstrations must be conducted safely within a small, open area. Take care to report to the safety staff about any spills or incidents.

## Safety Staff

Juanita Miller, M.S., P.E., — NMSU COE Safety and WERC Bench Scale Safety Coordinator

Daniel Gulino, Ph.D. — WERC Analytical Testing

## Bench Scale Setup

You may unpack your equipment after you register but may not start using chemicals until you have been commissioned (see below).

- **Secondary Containment** If your work involves large amounts of water or dirt, you will be provided with secondary containment in the form of a kiddie wading pool or tarp. All water-containing equipment must be located inside or directly above one of these containments.
- **Slips, Trips, and Falls** Any cord, hose, or wire that may present a trip hazard must be routed away from traffic and/or secured. Only 'yellow' gaffers tape is permitted to be used on the floor, and we have plenty of rolls available, so please just ask.
- **Tethering** If your work involves pumping of water or other fluid, you must secure and tether all lines. We suggest twine, fishing cord or wire, of which we have twine available. We will be glad to assist you with securing tethers on your equipment
- **Bench-Scale Operation** Teams may begin operations with chemicals and hazardous conditions on Monday at 8 am, provided they have completed commissioning.
- **PPE:** Wearing of safety glasses, long pants and close toe shoes will be enforced beginning Monday at 8 am.

## ESP Process – Commissioning and Decommissioning

**Commissioning:** Starting Sunday afternoon, One of the Safety Staff members will review the ESP you submitted prior to the event with the equipment setup and chemicals present to ensure everything is same or similar. When everything is OK, you will be given approval to run and, if applicable, issued synthetic water samples

- **Deviations:** We will discuss the issue(s) with you and make notes of the changes.
- **Unsafe Conditions:** We will meet with your team to determine how best to resolve the problem and still allow you to run your experiment (s).

# WERC Safety — An Imperative

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**Decommissioning:** On Tuesday, after any samples are submitted, you may tear down your bench area and equipment. You need to thoroughly clean that space and prepare any wastes for disposal (e.g. package/container with NMSU Tracking Form). When you are ready for an inspection of your area, you can sign the request sheet, and one of the Safety Staff will meet with you to verify that your bench area is clean and your waste is properly labeled for disposal. When complete, you are considered decommissioned. Decommissioning and waste disposal must be complete by 4 pm on Tuesday, April 9.

## **Hazardous and Non-Hazardous Waste**

All waste will be collected for disposal at this year's event. Do not pour water, even clean water, down a drain. You need to completely fill out an NMSU Waste Tracking Form for each container or package. Tape those forms securely onto that container or package, and show them to the Safety Staff during decommissioning. Then you move them to the WERC Hazardous Waste Accumulation area.

## **Emergency Procedures**

If someone is overexposed to a chemical or a spill occurs, notify a WERC Safety Team member immediately. A spill kit is available to address a release of chemicals. A mop and bucket are available to clean up water-related spills. If no one is immediately available, and the situation is urgent, call 911.

Emergency Exit for Tortugas Room will be through the main door, across the hallway, and onto the courtyard patio. Alternatively, you can use the regular door or rollup door on the opposite end of the Bench Scale area to exit the room. If any other emergency situation arises, the WERC Safety Team will make an announcement.