



New to the contest? Here is what you need to know.

[Video Conference Recording](#)

1. **The contest is primarily for undergraduate students**, although we allow graduate students who are in the early stages of their studies to join a team. A team must be at least 50% undergraduates.
2. **The contest is modeled after an engineering Request For Proposals (RFP)**. It is not a science fair project. It involves a full engineering design with bench-scale testing and business plan for implementing the full-scale design. Teams are also expected to address government regulations and health and safety issues.
3. **Teams should expect to spend 3–6 months on their designs prior to the contest**. The contest dates are reserved for oral presentations and bench-scale demonstrations.
4. **What Judges are looking for**. Watch the one-hour Video Conference (see link) that helps first-time teams understand what judges are looking for. The video conference slides are also available to download online in pdf.
5. **There are 5 tasks offered, plus the Open Task**. The five specific tasks are fully designed and help students learn to be engineers while faculty are freed from developing a task. This allows them to enjoy working as mentors and advocates for their team(s). Teams interested in the Open Task are urged to examine other tasks offered to ensure they are designing a project that is sufficiently challenging.
6. **Teams select from real-world tasks designed by engineering professionals** to meet an immediate environmental need. Alternatively, teams may identify their own topic and compete in the Open Task division.
7. **The projects are student-run**—entirely organized, designed, and built by students, with faculty serving as mentors for the teams.

8. **Timeline (see Team Manual for specifications for each stage of the contest):**

1. Before arrival at the contest:

1. Teams usually start their research in the Fall semester and build their bench-scale models in the Spring. Many start their projects before registering, just to make sure they are able to tackle the project and to select team members who are dependable.
2. Safety Plan due February: To ensure safety for all in attendance, our safety officer will guide each team through the safety protocols, including requiring an Experimental Safety Plan (ESP) for operating their bench-scale apparatus. See the task problem statement (last page) for this year's submission dates.
3. Teams submit a fully researched written report 2 weeks prior to the April contest.
4. Teams prepare an oral presentation, a conference-style poster, and build a fully functioning bench-scale model of their design.

2. At the contest, students present:

1. An oral report (15 minutes) presented to environmental professionals (the judges) and members of the Las Cruces Community
2. A conference-style poster discussion. This is posted on a display board (provided by WERC) in the bench-scale area.
3. Their working bench-scale model that can perform the required task. For example, if the task is to filter a chemical out of water, the team will be handed a sample of impure water, they run it through their bench-scale apparatus, and hand the judges their cleaned water sample. This sample is tested in our labs to determine the effectiveness of their apparatus. If the task is to measure soil moisture wirelessly, they place their sensor in soil and we test it against our sensors. We also test ability to send the information to their data logger at a given distance.

9. **Tasks have benchmark deadlines in January, February, and March.** Some tasks require that a preliminary plan be submitted in January, in addition to the ESP due in February. The written report is due in March. The preliminary plan helps teams by ensuring that they are heading on a path to success. The ESP is described above. The written report is a major component of the competition judging. See the task problem statement (last page) for this year's submission dates.

10. **Registration:**

1. Registration opens in early November and is handled online through the werc.nmsu.edu portal.
2. Faculty and students register as teams.
3. There is a registration fee per team (includes one Faculty member and up to 5 students per team). Additional team members require an additional fee. The registration fee covers less than 1 / 4 of our costs, but it helps us out tremendously.
4. One faculty member can sponsor multiple teams from their university. There is a substantial discount for bringing more than one team to the contest.

11. **werc.nmsu.edu portal. This portal, separate from our website, is your connection to the contest for:**

1. Registration (you may wish to prepare a photo and a bio beforehand–We ask faculty to upload these)
2. Registration payment via credit card
3. Report submissions (preliminary plans, ESP, written report)
4. Survey submissions (What did you like? How can we improve?)
5. Scores and judges' comments (find your scoring results)

12. **Audits:** Audits are an important part of an engineering RFP and must be taken seriously. Find outside auditors who have never seen your project and can help you strengthen your technical report.

13. **Judging:**

1. Teams are judged by experienced engineering professionals who ask tough questions, but also encourage teams. They introduce teams to new ideas and approaches, and also appreciate teams' innovations and forward thinking.
2. Each judge is assigned to specific tasks. The same judges (usually a team of 4–6 judges) evaluate all teams within a given task.
3. Judges individually grade the written report before the team arrives at the contest. Scores are tabulated on the WERC portal.
4. Judges listen to the 15–minute oral presentations and are given 10 minutes after the presentation to ask questions. They will not interrupt the presentation. They first listen to all reports from the same task and then apply final scoring to the oral reports immediately following the presentations.
5. Judges visit the bench–scale presentations, in groups of about 2 judges at a time, for all teams in their assigned tasks. Since there are 4–6 judges, a team will be visited 2–3 times by judges. At the bench scale, judges take the time to discuss the team's poster and delve more deeply into each team's design. Students often

comment that this is their favorite part of the competition because they feel they are treated as peers by the judges, instead of being “judged.”

6. On day 4, judges who are assigned to the same task convene and determine the awards in each category (see below for award information).

14. Team logistics

1. Teams provide their own transportation to/from the event, as well as their own lodging. On our website, we list hotels in the area.
2. Some teams bring their bench-scale models with them, others ship them to us about one week prior to the contest.
3. The first day of the contest is time to check in and to start setting up the bench-scale demonstrations. We hold a very nice welcome dinner (round tables and table linens). Afterwards, there is an orientation meeting to discuss detailed contest logistics and safety protocols for setting up bench-scale models.

15. Order of events:

1. Day 1: Check-in, Welcome dinner, Orientation, Safety meeting, Bench-scale setup
2. Day 2: Oral presentations, bench-scale testing by WERC staff
3. Day 3: Bench-scale testing by WERC staff and poster presentations
4. Day 4: Teams are free to explore the area* in the morning while judges tally scores. In the evening is the Awards Banquet and Ceremony
5. *There are a number of nearby sites you may want to see on your morning off: White Sands National Monument, Organ Mountains, Prehistoric Trackways, A Mountain, and many others listed on our website.

16. **Awards:** Each year, WERC and its sponsors award more than \$30,000 in cash prizes. Successful completion of every stage of the design project qualifies teams for the following awards.

1. Task awards (First Place \$2500, Second Place \$1000, Third Place \$500; minimum amounts).
2. The Flash Talk Award (\$1000 – \$200). Students present an “Elevator Speech” geared toward the general public. (Helps meet ABET Student Outcome #3)
3. WERC Resources Center Pollution Prevention/Energy Efficiency Award (\$1000)
4. Judges’ Choice Award (\$500)
5. Peer Award (\$250)
6. Terry McManus Outstanding Student Award. (\$500–\$1000, according to funding). Faculty nominate a student from their team. See our website for more details.
7. *Award amounts listed above are minimum amounts and may increase with available funding.*