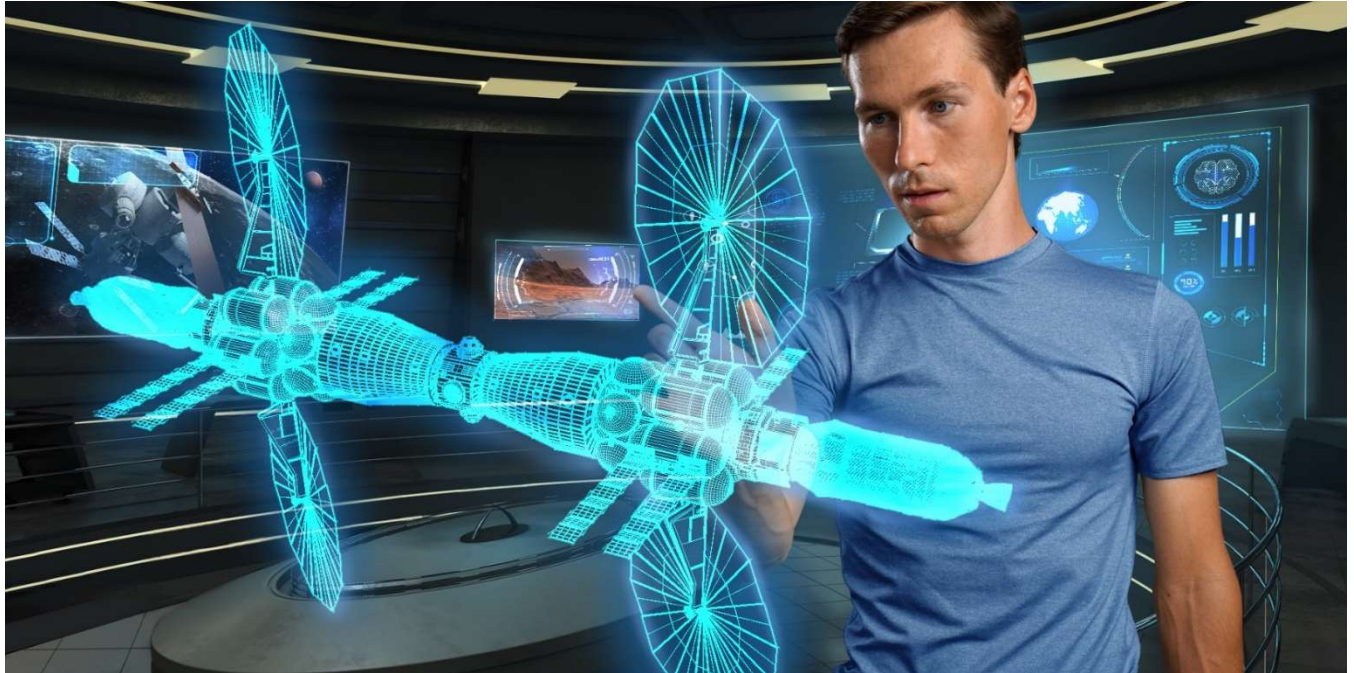




Welcome to the 3rd Annual Ethics in Engineering Case Competition



This Case Competition Guide contains information that will help you prepare for the competition, including the Agenda, Case, Guidelines for Presentation Materials, Judging Criteria for all rounds and more. Additional information can be found on the [event website](#).

Please contact [Jessica Walton](#) at Lockheed Martin with any questions.

WE LOOK FORWARD TO SEEING YOU IN BETHESDA FEBRUARY 27 AND 28!

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Agenda

Thursday – February 27th	
8:00	<ul style="list-style-type: none"> • Bus departure from Bethesda Marriott at 8am (<u>location: 5151 Pooks Hill Rd</u>), escorted by Lockheed Martin Event Contact Jessica Walton.
8:15 – 9:00	<ul style="list-style-type: none"> • Arrival at Lockheed Martin’s Center for Leadership Excellence (CLE) at 8:15am; please take elevator to the 1st floor. <i>Registration at security desk will include a visitor badge that you should keep on you at all times, including the second day of the event.</i> • After security registration, groups will be escorted to the event registration table to receive a package that includes a gift bag, name card, info packet and room assignment for the rounds.
9:00 – 9:15	<ul style="list-style-type: none"> • Welcome and review of program by David Gebler.
9:15 – 9:45	<ul style="list-style-type: none"> • For students: Intro to Lockheed Martin speech by Blair Marks, VP Ethics and Business Conduct. • For judges and faculty advisors: Briefing by David Gebler for judges and faculty advisors only.
9:45 – 10:15	<ul style="list-style-type: none"> • Round 1 – 90-second “elevator pitch”: Teams will be escorted individually to their assigned breakout rooms.
10:15 – 10:45	<ul style="list-style-type: none"> • Remarks from Dr. Leo Mackay, SVP of Ethics and Enterprise Assurance.
11:00 – 1:30	<ul style="list-style-type: none"> • Round 2 – 15 minute “internal” briefing: Teams will be escorted individually to their assigned breakout rooms.
1:30 – 2:15	<ul style="list-style-type: none"> • Lunch • Remarks from Stephanie Hill, SVP of Enterprise and Business Transformation.
2:15 – 2:45	<ul style="list-style-type: none"> • Ethics Awareness Training session.
3:00 – 4:00	<ul style="list-style-type: none"> • Travel to the Global Vision Center (GVC) in Crystal City.
4:00 – 4:30	<ul style="list-style-type: none"> • Arrival at GVC, including registration and receipt of visitor badges.
4:30 – 6:30	<ul style="list-style-type: none"> • GVC tours showcasing Lockheed Martin’s technologies.
6:30 – 8:00	<ul style="list-style-type: none"> • Dinner at GVC.
8:00 – 9:00	<ul style="list-style-type: none"> • Buses departs from GVC for Bethesda at 8pm: first stop at the Marriott on Pooks Hill Road, second stop at the CLE.

Friday – February 28th	
<i>If participants are checking out on Friday, we suggest they bring their luggage with them to the CLE for safekeeping in the front office.</i>	
8:00 AM	<ul style="list-style-type: none"> • Bus departure from Bethesda Marriott at 8am (location: 5151 Pooks Hill Rd), escorted by Jessica Walton.
8:15 – 8:30	<ul style="list-style-type: none"> • Arrival at the CLE and breakfast.
8:30 – 12:00	<ul style="list-style-type: none"> • Round 3 – Full 30-minute presentation: Teams will be escorted individually to their assigned breakout rooms. • In between round participation, there will be 3 activity options: <ol style="list-style-type: none"> 1) Lockheed Martin Information (Recruitment) Tables: Learn more about employment opportunities at Lockheed. 2) Ethics Table: Learn more about Lockheed’s values and ethics programs. 3) Global Employee Operations Center (GEOC) tours: Explore Lockheed’s world-class security apparatus delivering global threat intelligence and crisis management communications across the enterprise.
12:00 -- 1:00	<ul style="list-style-type: none"> • Lunch
12:30	<ul style="list-style-type: none"> • Finalists announced • Each finalist team will use one of the breakout rooms for presentation preparation between 12:30 – 1:15pm.
12:30 -- 1:00	<ul style="list-style-type: none"> • For non-finalist teams, remarks from a guest speaker on a cutting-edge technology topic.
1:15 – 2:45	<ul style="list-style-type: none"> • Semi-Finals: This event is open to all participants to view, split between two rooms.
3:00 -- 4:00	<ul style="list-style-type: none"> • Final Round: The two remaining finalist teams compete, open to all participants to view.
4:00 -- 5:00	<ul style="list-style-type: none"> • Discussion with Lockheed Martin Engineers on how they would solve the case • Awards Ceremony • Presentation of the competition winners, award prizes, and a celebration of all the teams’ hard work. • Verbal feedback will also be provided to the finalist teams by the judges (judges may be approached by all teams for feedback if they wish).
5:00	<ul style="list-style-type: none"> • Program End – (Students are responsible for their own transportation from the CLE.)

2020 Ethics in Engineering Case

ResQ Inc.

With some friends from college, Eduardo Guadalupe started ResQ Inc. to bring Artificial Intelligence (AI) and Machine Learning (ML) technology to support humanitarian disaster relief. ResQ's vision is to "Rescue the World," which has been an attractive draw for young engineers to join the company.

ResQ's first product, GRID, is a Quick Reaction Capability (QRC) system for disaster relief search and rescue (SAR) missions. ResQ markets GRID's capabilities to save lives while significantly reducing the financial and personnel strain on non-governmental organizations (NGO) and government relief organizations.

At the heart of GRID is an advanced AI and ML software algorithm that uses large-scale data analytics and situational awareness of both live and recorded data to define rescue priorities, and then develop real-time complex mission rescue plans as natural disasters unfold. GRID uses airborne UAVs to fly over disaster regions to collect data, assess damaged areas, identify people in need, and then develop a rescue strategy involving multiple platforms simultaneously. GRID's open-system architecture integrates with its customers' land, air, and sea resources to carry out SAR missions.

The cornerstone of GRID is its ability to use social media, crowd sourcing, government databases, and collected live data to gather information to best identify and analyze the most impacted areas to determine priorities for the most rapid, effective, and impartial rescue mission.

GRID uses ML to generate a growing database of information from different scenarios and events to more precisely direct responses. Thanks to its numerous successful US pilot programs to date, the system has been trained with years of data, continuously improving itself to identify highly accurate patterns in different disaster relief situations.

ResQ's demonstrated success in the US has resulted in strong international interest for GRID. ResQ's European business development teams are in final negotiations with three large European Union (EU) countries, with an option for full EU deployment.

With the business now expanding to other countries and the growth of AI and ML across innovative industries, ResQ established an ethics board to help govern the development of new products.

An undisclosed Asian-Pacific country (UAP) has expressed strong interest in a complete GRID system. In pursuit of a potential major contract, ResQ deployed a prototype system with the mutual understanding that if all tests were successfully passed, UAP would purchase a full GRID system.

In the contract negotiations UAP identified a risk with governing export-control laws and requested the ability to modify the input data parameters and data storage methodology of the software to tailor the platform to their specific geographical location, natural disasters, and country's needs. UAP highlighted to ResQ that its own country's social media platform would work in parallel with GRID to help expedite SAR missions and mitigate the risk in data sharing. UAP informed ResQ that they wouldn't finalize a contract without this capability.

ResQ's leadership put the challenge to the engineering team. They found a way to partition a customer's proprietary data (which is encrypted on ResQ's servers) from the rest of the datasets, allowing a customer to tailor their needs while benefitting from the rest of ResQ's huge database. Additionally, ResQ added an interface to allow the customer to modify the social media platform data sourcing implementation. UAP stated that the change would help aid in data collection and rescue strategy development. With this requirement met, UAP entered into the contract with ResQ.

During in-country testing, the system had an unexpected deviation in its rescue strategy and prioritization. On the final set of tests, GRID continually failed to allocate sufficient rescue resources to a geographically-specific group of individuals. To debug this issue, the engineering team moved the location of this group to an area that was always included in the rescue strategy in all previous tests, but the group was still excluded from the mission plan. ResQ quickly called off the demonstration to attempt to minimize any concerns, citing that the system had a small bug that needed to be resolved.

ResQ's engineering team said that to truly identify whether the errors are a systematic problem or simply a coincidence, they would need to analyze the data going into the system. However, UAP refused to provide the data. Instead, UAP's engineers said that the failure was only a coincidental anomaly, and they would accept the system as is. In fact, UAP was so anxious for full deployment they informed ResQ that any modifications to the system that was tested in-country would be rejected, and UAP would deem ResQ in breach of its contract and subject to significant penalties.

While the business development team was working through these issues with UAP, back at headquarters ResQ initiated an internal Root Cause Analysis (RCA) to determine what caused the unexpected issue with the algorithm. Jack Jonas, the lead software engineer, strongly advocated against deploying GRID until the deviated behavior had been fully solutioned. Jack theorized that the original algorithms and ML framework were developed, tested, and proven using the extensive data collected in US-based missions. As a result, the system could have implemented a bias towards "Western" cultures and environments which led to the deviation in behavior in UAP.

Nicole Nickels, the Engineering Project Manager (EPM), pushed back and stated that the issue isn't the algorithm, but rather biased data entering the system from the country's social media and information systems, which was intentionally causing the system to not prioritize the individuals in the rescue strategy.

Shari Samson, the AI Subject Matter Expert (SME) for ResQ, stated that this small deviation in behavior is simply due to the fact that the US-based system was extensively trained over time using a bottoms-up ML approach and that due to the data partition agreed upon in the contract, initial deployment of the system in a foreign country would need time until it had conducted enough missions to learn and correct itself.

Due to the lack of system output data from the testing, these three experts could not conclusively decide on the formal cause of the problem. When they presented their analyses to ResQ's executive leadership team and the ethics board, there was strong support for Shari's claim based on her years of experience and personal credibility. They dismissed the possibility that there could be a cultural bias in the system's algorithm, calling it an unsubstantiated accusation against the product. Word of a cultural

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bias would create a public-relations nightmare that could lead to grounding all GRID systems, putting the US at risk if a natural disaster occurs.

Additionally, the ethics board, contracts, and legal all dismissed Nicole's theory. The data entering the system is not the responsibility of ResQ and that the system and company are legally compliant with US laws and regulations, satisfying all the requirements of the system.

ResQ went ahead and agreed to UAP's acceptance criteria. Following Shari's recommendation, ResQ immediately deployed GRID to begin teaching the system to quickly correct the deviated behavior.

Soon after deployment, a major cyclone hit UAP, causing significant and widespread damage. Within 24 hours, UAP's news service reported that GRID worked perfectly, and casualties were minimal.

However, independent news sources discovered that many heavily impacted areas with large non-indigenous populations did have high casualty rates, despite GRID being deployed in those areas. The Western media called this a failed rescue due to unjust bias against these residents.

Upon hearing the reports coming out of UAP, the European customers froze negotiations, demanding clarification as to why ResQ would permit racial profiling and other bias in its GRID system. These actions prompted officials from the EU to contact ResQ with the warning that if GRID violates EU Anti-Discrimination Laws, ResQ would be precluded from doing business within the EU.

Eduardo Guadalupe does not know what to do. He is not sure how to proceed with UAP, as well as with the European prospects. ResQ's ethics board has been unable to come to a consensus.

Eduardo contacts your consulting firm to provide an unbiased recommendation on the situation. Your team is tasked with analyzing the ethical, engineering, and business issues at stake. ResQ is seeking a clear path forward that will continue to keep its business profitable and its values intact.

Due to security requirements, your team will not get access to GRID's proprietary intellectual property during your review. Eduardo has asked that you state any technical assumptions you have made in developing your recommendations.

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Case v7.3

Notes on the Case

This Case will be used for all rounds of the competition.

Because the situation described above is fictional and intentionally ambiguous, there is no one correct solution. Teams can leverage whatever resources they wish (professors, colleagues, internet, scientific journals, etc.) to prepare their recommendations, with one exception: teams are not permitted to contact current Lockheed Martin employees for guidance.

Teams can assume that ResQ's [core values](#) and [code of conduct](#) are very similar to those of Lockheed Martin.

Any questions about the case can be directed to [David Gebler](#), who will determine with the case competition planning committee whether and how to respond to the question. *If* a response is provided, it will be posted to the [FAQs tab of the event website](#), and all participants will be notified via email that new information about the case is available.

Guidelines for Presentation Materials

Deadline

All teams must submit electronic files with their presentation materials to [David Gebler via email](#) **before 11:59pm ET on Wednesday, February 19, 2020**. No modifications or additions will be accepted after the deadline. Teams that do not submit their presentation materials by the deadline will not be able to use any materials during the competition and will be penalized by the judges accordingly (see *Judging Criteria*).

Format

We are deliberately using the vague term “presentation materials” because we do not want students to feel compelled to create a PowerPoint. PowerPoint slide decks, probably the most common type of “presentation materials” in a business setting, are certainly welcome. However, we understand that some teams may prefer to illustrate their recommendations using an infographic (electronic or in print), interactive webpage, interpretive dance, diorama, etc.

If you are planning to use a format other than PowerPoint for your presentation materials, please reach out to [David Gebler](#) in advance for help determining what to send in the electronic file, and how to send it (Lockheed Martin email security restricts certain file types and sizes).

Logistics

All files received will be tested and loaded on Lockheed Martin computers before the competition. For security reasons, teams will not be permitted to bring their own laptops to the Lockheed Martin facility. The Lockheed Martin computers will have internet access and sound, but keep in mind that they can only be operated by Lockheed Martin employees.

If the materials must be printed, color copies for both team members, the faculty advisor(s) and all judges will be printed by Lockheed Martin and provided to the relevant participants at the event. David Gebler will work with the team to accommodate any unusual paper sizes or other requirements.

Recommendations

- Don't forget to proofread your presentation materials and have a peer review them. There is nothing worse than seeing a typo on your materials as you're presenting.
- Don't write every word you plan to say on your presentation materials; rely on images more than words to support your presentation. First, no one likes looking at a wall of words. Second, if you write everything you are planning to say by February 21, there will be no way to adjust your presentation in the week leading up to the competition.
- If technology is not your strong suit, or you don't want to worry about a webpage loading while you're talking, stick to the basics and use a file that can be saved as a PDF.

Note: The competition organizers reserve the right to adjust or clarify these guidelines. We expect any changes to be minor but will communicate them to all participants ASAP.

@ Lockheed Martin

LM Visit

You will be visiting a facility that requires pre-screening of visitors. You should have received an email from vms.lmsecurity@lmco.com, asking you for additional personal information to complete your visitor registration. If you have not already done so, please provide the requested information ASAP so we can approve you in our LMVisit system.

While on Lockheed Martin premises, non-Lockheed Martin visitors are expected to wear their visitor badge above the waist, where it is easily visible, and must always be accompanied by a Lockheed Martin employee. Participants should listen carefully to the instructions of their Lockheed Martin escorts.

A few additional guidelines regarding the use of electronic devices:

- The Center for Leadership Excellence (CLE) and the Global Vision Center (GVC) permit the use of cell phones and cell phone cameras. The CLE & GVC will provide free guest wi-fi information upon arrival.
- Smoking on our campus is strictly prohibited.

Dress Code

The dress code for this event is business casual (or military attire for cadets). There will be an opportunity to take professional pictures so participants should dress to impress but not feel obligated to buy a new wardrobe.

Participants should not wear jeans, shorts, t-shirts, sweatshirts or athletic wear of any type. Clothing should not contain any profanity or potentially offensive messages. Shoulders, chests, thighs and toes should be covered. The facility tends to be cold, so consider wearing layers.

Competition Guidelines

Qualifications

Each of the invited schools must bring one team of two undergraduate students, along with a faculty advisor. As the case will address an engineering issue, we recommend that at least one of the students be studying engineering.

Students who have interned at Lockheed Martin may participate but students who have participated in a previous Lockheed Martin case competition may not.

Students of all nationalities are welcome.

Roles and Responsibilities

Student Competitors

Students are responsible for submitting their presentation materials on time and coming prepared to compete. They should also take advantage of this great networking opportunity and enjoy their time in Bethesda.

Students are ambassadors of the organizations they represent, and they are expected to treat everyone with respect and comply with the letter and the spirit of all competition and [facility rules](#).

Faculty Advisors

Faculty advisors should support and encourage the students as they prepare for the competition. Faculty advisors can suggest resources for students to use in their research, provide feedback on the students' ideas, proofread their presentation deck or talking points, and/or listen to the students practice their presentations. Faculty advisors should help students think through their ideas to determine whether they are reasonable and defensible; faculty advisors should not provide students with what they believe to be "the correct answers" or put together the presentation for them.

While in Bethesda, the role of the faculty advisor is to provide moral support and encouragement, as well as feedback that will help the students learn from their experience. Faculty advisors are not permitted to advise the teams between the start of Round 1 and the end of Round 2. Faculty advisors of teams that are not advancing to the Final Round may provide feedback to their team during lunch. Faculty advisors may sit in only on their school's presentations, and not in any other's.

Judges

Judges are required to disclose any potential conflicts of interest. Every effort will be made to avoid assigning judges to teams with which they could be reasonably believed to have a personal or professional relationship. Judges will evaluate teams' performances using the [Judging Criteria](#) defined in this document.

Moderators

The Lockheed Martin moderator in each room will be responsible for operating the computer with the team's presentation materials, for timing each presentation and saying "stop" when time has elapsed, for ensuring that judges complete their scoring forms correctly, for escorting teams in and out of the

room, and for relaying any issues or questions to the conference organizers. Moderators will not judge the competition and will serve more as a facilitator/host.

Competition Format

Rooms

Rounds 1, 2 and 3 will take place in five (5) dedicated meeting rooms. In each room will be a moderator and three judges. Typically, only the two student competitors, official judges, moderator and faculty advisors (from the team's school) will be in the room during a team's presentation. Other teams assigned to that room will wait in a separate area until they are called by the moderator to present. All participants will be able to watch teams compete in the Semi-Final and Final Rounds, except the other finalists, who will wait in a separate room until they are called.

Time Limits

A moderator in each room will time each team's presentation and say "stop" when time is up. Judges will be instructed to disregard anything said by the team after this point. Teams will not be given a warning when their time is almost up but may use their own watches or timers to monitor the time.

Score Calculation

Each judge in the room will assign a score, from 1 (worst) to 5 (best) to each team for each of the criteria for that round after they have heard all competitors for the round (See Judging Criteria below). The criteria will be weighted equally, and the judges' scores will be totaled to determine the team's score for each round.

Round 1

Room assignments and order of presentation for Round 1 are based on a random drawing.

Each team will define the engineering, ethical and business dilemmas of the case and present their solution in a 90-second "elevator pitch."

Teams may not use any notes or visual aids.

Judges will not ask questions during this round.

Round 2

Teams will present in the same room as Round 1, but they will present to a different set of judges for Round 2. Order of presentation for Round 2 will be based on a random drawing.

In Round 2 the judges serve as the internal leadership team of the students' "consulting firm." The team is lining up its presentation to the client (in Round 3)

Each team will have 15 minutes to identify and address the ethical, engineering, and business issues of the case, and the strategy for presenting the issues to the ResQ leadership team.

Teams may use up to five (5) slides in their presentation. (Slides to be submitted prior to the competition. see [Guidelines for Presentation Materials](#) for more information).

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There will be a 10-minute Q&A period after the presentation, during which judges may ask teams to explain, clarify or defend specific aspects of their arguments or overall presentation.

Round 3 Room Seeding

The total of each team's points from Rounds 1 and 2 will determine only the team's seed for Round 3 and will not be used in determining finalists for subsequent rounds.

On Day 2, the teams will be provided with room assignments for Round 3. The assignments will be seeded based on the aggregate scores from Rounds 1 and 2. For Round 3 there will be six rooms.

Room	Ranked Teams in each Group
A	1, 12, 21
B	2, 11, 20
C	3, 10, 19
D	4, 9, 16, 13
E	5, 8, 17, 14
F	6, 7, 18, 15

Neither individual team scores nor their ranking will be revealed. The teams will only be told their room assignment.

Round 3

This round is the formal presentation to the ResQ leadership team, and the judges will play that role.

Each team will have 30 minutes to present their engineering, business, and ethics solutions for the case only using the presentation materials they submitted prior to the competition (see [Guidelines for Presentation Materials](#) for more information) and any printed notes.

During the presentation, the judges are permitted to interrupt the presentation to ask teams to defend or clarify specific aspects of arguments or overall presentations.

There will be a 10-minute Q&A period after the presentation, during which judges will ask teams to explain, clarify or defend specific aspects of their arguments or overall presentation.

Semi-Finals

The team with the most points from each of the six Round 3 rooms is the winning team for that room and will advance to the semi-final rounds.

By random drawing, three teams will be assigned to one room and three teams will be assigned to another.

This round is open to all, except for faculty advisors and members of the six finalist teams

The ResQ leadership team has asked you to present your findings to a new group of ResQ stakeholders. Five judges will serve in the role of these new stakeholders.

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Each team will have 15 minutes to present their engineering, business, and ethics solutions for the case using some or all of the Round 3 presentation materials submitted prior to the competition (see [Guidelines for Presentation Materials](#) for more information), as well as any printed notes.

A Lockheed Martin moderator will be assigned to each team and will implement each team's instructions as to which, if any, of the presentation materials to not display in the presentation.

During the presentation, the judges are permitted to interrupt the presentation to ask teams to defend or clarify specific aspects of arguments or overall presentations.

There will be a 10-minute Q&A period after the presentation, during which judges may ask teams to explain, clarify or defend specific aspects of their arguments or overall presentation.

The Finals

The team with the most points from each of the two Semi-Final rounds will advance to the Finals.

This round is open to all, except for faculty advisor and members of the other finalist team.

The Final Round will be the same format as the Semi-Final round..

Judging Criteria and Scoring

In each round, each judge will assign a score from 1 (worst) to 5 (best) for each of the criteria below.

General guidelines for the scores are as follows:

- 1 point Did not achieve any of the objectives; totally incoherent and/or unprofessional
- 2 points Achieved, or partially achieved, some of the objectives but missed key elements
- 3 points Achieved most of the objectives but left room for improvement
- 4 points Achieved all of the objectives with no apparent shortcomings
- 5 points Significantly exceeded expectations; went above and beyond defined objectives

Judges may complete their scoring after each school's presentation or after the final presentation.

However, the judges will not confer with one another until their score sheets are submitted to the room moderator

Round 1 (total of 20 points possible)

Four criteria

Content

1. Did the team identify and clearly explain the engineering, ethical and business dilemmas of the case?
2. Did the team clearly summarize their recommended solution and high-level rationale?

Communication

3. Did the team present their ideas in a coherent, engaging and professional fashion?
4. Did the team make adequate use of the allotted time without exceeding the time limit?

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Round 2 (total of 45 points possible)

Nine criteria

Conceptual Foundation

1. Did the team demonstrate an understanding of the ethical aspects of the case?
2. Did the team appear to consider the competing interests of multiple internal and external stakeholder groups?

Content

3. Did the team identify and clearly explain the engineering, ethical and business dilemmas of the case?
4. Did the team present recommendations that were logical/defensible (i.e. adequately supported by facts, figures and rationale)?
5. Did the team consider multiple potential solutions?

Communication

6. Did the team present their ideas in a coherent, engaging and professional fashion?
7. Did the team make adequate use of the allotted time without exceeding the time limit?
8. Did the students present as a cohesive team?
9. Did the team respond clearly and thoughtfully to the judges' questions?

Round 3 (total of 50 points possible)

Ten criteria

Conceptual Foundation

1. Did the team demonstrate an understanding of the technical/engineering aspects of the case?
2. Did the team demonstrate an understanding of the business/financial aspects of the case?
3. Did the team demonstrate an understanding of the ethical aspects of the case?
4. Did the team consider the competing interests of multiple internal and external stakeholder groups?

Content

5. Did the team identify and clearly explain the engineering, ethical and business dilemmas of the case?
6. Did the team present recommendations that were logical/defensible (i.e. adequately supported by facts, figures and rationale)?

Communication

7. Did the team present their ideas in a coherent, engaging and professional fashion?
8. Did the students present as a cohesive team?
9. Did the team make adequate use of the allotted time without exceeding the time limit?

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10. Did the team respond clearly and thoughtfully to the judges' questions?

Semi-Final and Final Round (total of 55 points possible)

Eleven criteria

Conceptual Foundation

1. Did the team demonstrate an understanding of the technical/engineering aspects of the case?
2. Did the team demonstrate an understanding of the business/financial aspects of the case?
3. Did the team demonstrate an understanding of the ethical aspects of the case?
4. Did the team consider the competing interests of multiple internal and external stakeholder groups?

Content

5. Did the team identify and clearly explain the engineering, ethical and business dilemmas of the case?
6. Did the team present recommendations that were logical/defensible (i.e. adequately supported by facts, figures and rationale)?
7. Did the team consider multiple potential solutions?

Communication

8. Did the team present their ideas in a coherent, engaging and professional fashion?
9. Did the students present as a cohesive team?
10. Did the team make adequate use of the allotted time without exceeding the time limit?
11. Did the team respond clearly and thoughtfully to the judges' questions?

Note: The competition organizers reserve the right to adjust or clarify the judging criteria. We don't expect many changes, but if you see something that is confusing or incorrect, please let us know so we can discuss a modification. All participants will be notified of any changes ASAP.

Prizes

The winners will be announced at the Program End Friday afternoon.

Each student competitor on teams in the final rounds will receive an Amazon gift card:

- 1st Place: \$750
- 2nd Place: \$500
- Semi-Finalists (4 teams): \$150

Winners who are U.S. citizens or resident aliens will be required to complete a [W-9 Form](#) so that Lockheed Martin can send them IRS Form 1099-MISC in January 2019. Winners who are foreign nationals will be required to complete a [W-8BEN Form](#).

Contact Information

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Participating Schools

2020 Ethics in Engineering Case Competition



University of Colorado Boulder

