



All intellectual property (IP) generated during the contest will be wholly owned by the inventors. CWRU, C.I.A., and Saint-Gobain will not claim a stake in your IP due to participation in the Saint-Gobain Student Design Competition.

Proposal Requirements: Write a 1-2 page abstract briefly describing:

- Proposal Goal/Thesis
 - This section of the proposal should describe not only the “problem,” but also the method by which your team intends to address and hopefully resolve the problem.
- IP and Technical Literature Review
 - This section should include an overview of the different types of technologies or approaches currently employed to address the “problem” as well as a focused review of specifically relevant literature, including patents and technical literature. Who are the main competitors?
 - Is the project potentially patentable, either via a design or utility patent? If not, can it be practiced (it must be able to be practiced), and what makes it unique? Is there some element of the invention that is suitable for development as a trade secret?
- Design Specification
 - This section will specify the design criteria that addresses the stated design problem and controls the design process. It will provide the criteria against which alternative designs, and ultimately the final design, will be evaluated.
 - Where possible, specify ‘objective’ rather than ‘subjective’ design criteria; objective criteria (e.g., mass less than 5kg) can be measured and tested, whereas subjective criteria (e.g., design is good-looking) can only be evaluated by opinion. Most design specifications will contain BOTH!
- Proposal Materials, Method, and Design
 - This should include a detailed proposal of how your team plans to address the “problem.” The proposal can include several approaches, but each approach must be reviewed from an IP perspective (above).
 - Materials: What specific materials will be used, modified, or developed for the project?
 - Methods: What methods will be used to make the prototype and ultimately the product?
 - Design: What will the prototype and final product look like?
 - Note: This proposal does not have to be strictly adhered to once you begin the design phase. However, you are required to explore the proposed ideas experimentally and justify all changes made.

- Cost
 - Provide a rough outline of how your team intends to use your budget (you are not to exceed \$500).
- Project Planning
 - Include a detailed project plan of the main tasks and resources associated with the project, from inception to completion.
 - The project plan should be in the form of a Gantt chart and a network diagram with all project milestones clearly indicated. This will help in determining the critical tasks, resource management and anticipating bottlenecks.
 - The project plan will assist you in determining lead times for items that need to be ordered ahead of time.
- Suggestion: Use project management software (e.g., Microsoft Project) to create and maintain the project plan.
- Are there any Saint-Gobain materials your team will need?

Competition Rules

The Saint-Gobain Student Design Competition is a team-based competition. Teams must include at least three members and no more than five members. All students must be full-time undergraduates or graduates. Students scheduled to graduate in May or later are welcome to participate.

Teams must include at least one member from either: macromolecular science and engineering, materials science and engineering, chemical engineering, physics, or chemistry; with a keen background on materials properties.

Team success is driven by diversity of thought, so additional members can come from any other department in the School of Engineering, any science department in the College of Arts and Sciences, any major from the Weatherhead School of Management, and from the Industrial Design program at the **Cleveland Institute of Art (CIA; strongly encouraged)**.

Faculty and staff are allowed to advise and consult with teams, but may not be official team members.

For an entry to be considered, teams must design and build a prototype device using materials that create a new and innovative solution to a problem in society.

Judging Criteria for Competition

Judging of entries to the Saint-Gobain Student Competition will be carried out by a panel consisting of at least one representative from each of the following: Saint-Gobain Corporation, the Case School of Engineering Macromolecular Science and Engineering Department, Case School of Engineering Materials Science Department, and the Cleveland Institute of Art (if available).

Teams will be judged on the following:

- Novelty/Technology (30%)
 - Has this idea or product been done before, or is there something like it?
 - How innovative is the technology?
 - How creative is the technology?
 - How advanced is the technology?
- Practicality/Marketability/Profitability (30%)
 - Can this product/idea be introduced into the market with relative ease?
 - Is it practical?
 - Is there a market for this product?
 - What is the business implication? Can a profit be made from this product? What is the profit margin based on current and future material costs? **A business plan that outlines the costs must be included.**
- Design (25%)
 - Is there aesthetic appeal to the design? What is the artistic merit and quality of the design?
 - How simple is the design? Unnecessary complexity is not desired.
- Theme/Presentation/Written Report (15%)
 - Is this relevant to the theme? Were all criteria met?
 - Was the presentation professional? Were the main points presented in a clear and easily understandable manner?
 - Does the written report cover the judging criteria? Were all components submitted on time?

Semi-finals

The semi-finals will consist of a presentation from each team. Presentations should be 20 minutes long. An additional 20 minutes will be reserved for questions, discussion, and possibly advice for finals.

Presentation Content:

- Overview of Novelty/Technology/Design/Practicality/Marketability/Profitability/Theme
 - Review of closest prior art. What is the novelty and advantage associated with this product?
 - Detailed description of approaches for technology development.
 - Detailed description of technology/product development to date.
 - Design review.
 - Rough cost estimates and projected large-scale and future cost estimates. While cost should be non-limiting, it must be addressed.

- Presentation of working prototype or prototype developed to date. May consist of prototype component demonstration/explanation and prototype proposal if final product is not complete.

Prizes for the semi-finals will be distributed as follows:

- First Prize: \$400
- Second Prize: \$200

Finals

Competition finals will consist of a closed poster session with the judges, open poster session for guests, as well as a short presentation from each team.

Teams are expected to fulfill the following requirements for the finals:

- A written report detailing:
Novelty/Technology/Design/Practicality/Marketability/Profitability/Theme
 - **Must be submitted ONE WEEK prior to the finals.**
- Poster that summarizes the written report.
- Presentation content (10 minutes for presentation and Q&A).
 - Brief overview of Novelty/Technology/Design/Practicality/Marketability/Profitability/Theme
 - Highlight updates and changes from semi-finals presentation.
 - Focus on technology development and description of technology and design of final product.
 - Sales/marketing proposal: What are the next steps to bring this product to market? A business plan that includes detailed cost information must be presented.
 - Demonstration of working prototype or prototype developed to date. May consist of prototype component demonstration/explanation and prototype proposal if final product is not complete.

Prizes for the Finals will be distributed as follows:

- First Prize: \$9,000
- Second Prize: \$4,000
- Third Prize: \$2,000

In addition, the first place team will be invited to travel to Boston and spend a day at the Saint-Gobain Northboro Research Facility. Prize winners will be invited to display their concepts at ASM's downtown Cleveland facility, where a materials library and related educational outreach opportunities are planned. Also, media coverage will be secured for the competition.

Please note that the awards are not guaranteed if the teams do not meet the minimum criteria (which will be determined by the judges).