

SUSTAINABILITY INNOVATION STUDENT CHALLENGE AWARD (SISCA)

Rules and Guidelines Fall 2017

DOW SISCA 2017 OVERVIEW

- ◆ The Dow Sustainability Innovation Student Challenge Award (SISCA), a program of the Institute on the Environment (IonE) and the Dow Chemical Company, recognizes and rewards graduate students for innovation and research that encourages and promotes sustainable solutions to the world's most pressing social, economic, and environmental problems.
- ◆ Awards include a \$10,000 grand prize and a \$2,500 runner-up prize. The competition is open to full time graduate and professional students enrolled at all campuses of the University of Minnesota.



Sustainability Innovation Award '14 Winner: Md Al Mehedi, with the project: "Rare Earth-Free Permanent Magnets"

GOALS AND OBJECTIVES

- ◆ The objective of the Sustainability Innovation Award is to develop practical and innovative solutions that address global environmental challenges.
- ◆ We aim to encourage student action.
- ◆ We encourage students to reach out and understand how to apply their knowledge to solve important problems in the world. This means identifying and understanding a real problem. It means developing not only a solution, but a plan for implementing that solution.

- ◆ We want students to understand these problems don't occur in a vacuum, but require multi-disciplinary teams and solutions to achieve outcomes.

APPLICATION PROCESS

- ◆ If you are interested in applying, contact Fred Rose rosex122@umn.edu to discuss your intended application.
- ◆ An info session will take place on Wednesday September 27 from 11:30 - 12:30 in ME 1130, (Minneapolis East Bank.)
- ◆ Initial applications are due by 6pm CT, Tuesday October 24th. The complete application can be found online.
- ◆ By November 7th, finalist teams selected from the initial applications will be announced. The number of finalists will be approximately 6-8 teams. These finalist teams will be asked to submit a complete written application, due by November 21st.
- ◆ Each finalist will make a 15-minute presentation to a panel of judges December 6th. An electronic copy of the presentation is due the day before. This presentation will take place at the Institute on the Environment on the St. Paul campus.
- ◆ Applications may come from an individual or a team. Every team member must meet eligibility requirements. There is no limit on number of team members. All financial awards will be evenly distributed across the listed team members.
- ◆ Judge names and backgrounds will be listed on the UMN Dow SISCA webpage before the final presentations.



AWARD CRITERIA

- ◆ The topic must be aligned with the spirit of Dow's Sustainability Goals. The specific criteria are:
- ◆ **Excellence in research.** The core solution proposed should be solidly researched, validated in some way and based on sound principles. (30%).
- ◆ **Innovation of idea.** The solution should be new, or at least taking a solution from somewhere else and applying it in a new way. (20%).
- ◆ **Sustainability.** Sustainability problems involve many dimensions, is this solution multi-dimensional? What is the relationship to the Dow Sustainability goals. (20%).
- ◆ **Scale and Importance of Problem Being Addressed.** The solution needs to be financially viable in order to scale, and it needs to address a large problem. (15%).
- ◆ **Moving the Research into Practice.** We want the research to have a real and viable path out into the marketplace or world in general. How would this idea actually be done? (15%).

Judges will review the written application and final presentation. Final scores will be based on the written application, final presentation, and verbal questions and answers at the end of each presentation.

AWARD DETAILS

- ◆ First place award is \$10,000. Second place (runner-up) award is \$2,500. Winners receive cash awards that may be used however the winner sees fit.
- ◆ There is no requirement for the financial award to be used to pursue the project; however, pursuit and implementation of the project idea is encouraged and part of the selection criteria.

ELIGIBILITY

- ◆ Each team member must be a full time UMN graduate or professional student.
- ◆ There is no restriction on number of team members. The financial award is split evenly among members listed on the application. Be aware the financial award may impact financial aid status.
- ◆ Advisors and mentors, and their affiliations, should be listed in the written application. There is no restriction on affiliation. They may be professors, industry mentors, students or any other affiliation.
- ◆ The solution can be your graduate research or another project idea entirely.
- ◆ If you are unsure of your status or have questions regarding eligibility, contact Fred Rose <rosex122@umn.edu>.

WRITTEN APPLICATION

The written application is more extensive than the initial application. The written application should not be more than 10 pages and should contain:

Title Page (Excluded from 10 page limit)

- **Title.** Name of your project
- **Contact.** Name, Email Address, and Phone Number of each team member
- **Major.** Major and status of each team member
- **Advisors.** List any advisors and mentors, plus their affiliates.

Executive Summary. Description of problem you are addressing, your solution and characteristics that are most important. Relationship to 2025 Dow Sustainability goals. What is the impact of your solution and how can it be achieved.

Problem Statement. Description of the problem or challenge you are addressing. Include the larger scale challenges and specific problem your solution targets. It is important to clearly describe how you identified the problem and how it relates to sustainability. Depth and quality of research into the problem is part of the criteria. The problem (and solution) description should be understandable by a broader audience, not just a specialist in your area. Judges may not know much about the problem, your application should clearly state what it is, and how you have determined it is a real problem.



Solution Description. This is the heart of your application. Be clear on how your

solution works, how you have validated it, what's innovative about it, how it adds value, how it compares to other alternatives and why people will use it. Be sure to include:

- **Customer.** Who is the customer for this solution and how have you validated what they want and need?
- **Function.** What is your solution and how does it work?
- **Competition.** How is the problem solved now? What are competing solutions? Why is yours better? Why will people (or companies or governments) buy your solution? What is the value to them? Even if your solution isn't a business, it still has customers and they still have alternative options. Be as specific as possible in the competitive analysis.
- **Innovative aspects of your solution.** Don't make judges hunt for this. Be clear about what the innovation is. It could be a technical breakthrough or a market or business model innovation. If your solution has Intellectual Property (IP) potential (patent, copyright or trademark), make sure you include that in your application materials.
- **Context.** Include more than just the technical aspects of your solution. What are the cultural, business, and economic issues and challenges around implementing your solution?
- **Solution validation.** Have you developed and tested a prototype or pilot?
- **Trends.** What are the overall market and technology trends supporting your idea?

Scale, impact and business plan. It is important your solution addresses a problem that is not just small and localized. Define the size of the problem, how the solution could be commercialized to address it and next steps.

- **Scale.** Your solution should have potential to scale. It may not be global, but could be nation or statewide. The solution doesn't have to be for the U.S.; it could be anywhere. Scale is key regardless of location. Your first implementation or pilot is small scale, but your solution should have potential to expand; your plan should address a large market.
- **Impact.** How big is the problem? Does it impact many people? Is it a major impact or a minor annoyance? Does it relate to Dow's Sustainability goals?
- **Business plan.** SISCA is not a business plan competition, but realistically no solution can scale or have an impact without a clear plan. A solution in a lab has to have a path to implementation and impact. It is not required that you

have a business plan, but it is important that you address how scaling and impact will happen. You could license your solution to others, which still requires a business plan. The point here is judges will be looking to see how your solution will apply in the "real world." They will assess your technical solution and how it will be implemented. That's why both are individually weighted criteria.

Next steps. What happens after the competition? Are you going to do further work on the plan?

Team. A description of your team, your background experiences, and why you are the right team to do this.

Assumptions and risks. Every plan and solution has inherent assumptions and risks. Identify what are your biggest risks and how you will mitigate them. Also describe what your assumptions are, and how you can validate them.

Appendices. If you have detailed financial, technical data, or other important information to share, you may use up to five pages of appendices (excluded from 10 page written application limit).

Links. Links to further documentation, videos, web sites, etc. may be included in the written application but should not be integral. Links may or may not be reviewed by the judges. application but should not be integral to it. Links may or may not be reviewed by the judges.

QUESTIONS

Contact Fred Rose rosex122@umn.edu

Or visit:

<http://environment.umn.edu/leadership/dow-sisca-challenge/>