Rain It In Student Competition

Fall 2022 Competition Guidelines

Introduction

Rain It In is a non-profit competition that challenges post-secondary students to create climate resilient solutions that have a specific focus on mitigating the impacts of intense rainfall and flooding. The competition provides a unique experiential learning opportunity for students to apply their knowledge and skills to a real-world problem affecting our communities. Afterwards, Rain It In connects interested students with resources, mentors and programs to help with the transition from an idea to entrepreneurship and product commercialization.

The competition tasks teams of post-secondary students to design and present a solution meeting the requirements of a specific challenge, provided by a project sponsor. Our fall 2022 challenge has been generously provided by The Corporation of the City of London.

About the Sponsor

The Corporation of the City of London is the municipal government for London (Canada), located in southwestern Ontario with a population of approximately 422,324. The City is the 11th largest metropolitan area in Canada and is among the fastest growing census metropolitan areas in Canada. Situated on the Thames River and within the Upper Thames River Conservation Authority (UTRCA) area, London experiences frequent flooding due to severe weather events, aging infrastructure, and lots of construction in low-lying areas and floodplains.

The City was one of the earliest in Ontario to implement a stormwater charge to support the implementation of stormwater infrastructure to protect the City, its residents, and the environment. Today, it continues to make rapid improvements to mitigate the impacts of climate change and the more frequent occurrences of severe storm events.

The Problem

Stormwater, its impacts, mechanisms, and mitigation strategies are poorly understood by the public. This results in challenges for civil services to justify large capital investments into infrastructure, or programs and policies to protect public property and environmental health. In addition, the public is often ill-equipped to understand the impacts of their own actions on aging infrastructure, are not informed of practices that can protect themselves, and may contribute to the problem through their own actions. Standard public information sessions, pamphlets, online information, and newsletters have not been effective in enlightening the public. This knowledge-gap is seen in all age groups and backgrounds.

The Challenge

From recent trials with elementary school students, hands on experiences were found to be much better at engaging and instilling understanding than traditional outreach methodologies. The challenge then is to create professional, safe, cost-effective, and easily deployable "experiences" that can educate the public on various stormwater topics. Competing teams are challenged to design and create "experiential" kits (similar to those by https://www.kiwico.com/) that can be manufactured by the City of London and made available for a target audience.

Ideally, the kits should be suitable for a large range of age groups; however, it would be acceptable if it only targets grades 3 to 8. The kits may be deployed by City staff at information workshops for large infrastructure projects to assist with understanding the value of stormwater projects, sent to schools for use in the classroom, or made available for loan in the library for the public. Simple and safe materials, reusability, and intuitive design are paramount. The City of London intends to create working prototypes and short runs using CNC machines, 3D printers, and laser cutters.

For the purpose of the competition, teams do not need to concern themselves with external packaging (e.g. what box everything will come in). If they do design packaging, it will be excluded from overall cost metrics for comparison purposes.

In general, activities work best when the "lesson" is concise and specific. Some examples of "lessons" are as follows:

- How drainage works on different surface types
- How homes are designed for drainage
- How soil type impacts drainage
- How engineered river infrastructure (such as those in the Thames River) work (Dikes, Dams)
- Stormwater pond design features
- A stormwater pond's purpose (sediment and erosion control, nutrient removal)
- The concept of a "subwatershed"
- How City infrastructure reduces flooding
- Low impact development measures
- Climate change considerations

Timeline

The competition will be facilitated virtually from **October 1st - November 30th, 2022**. The time commitment is estimated to be 10-15 hours. It should be noted that the dates are given only as a guideline and may be adjusted.

Important Dates

September 27th, 2022	1:00 PM - 2:00 PM	Informational webinar
October 1st, 2022	11:59 PM	Registration closes
October 15th, 2022	1:00 PM – 3:00 PM	Mentorship workshop
October 22nd, 2022	1:00 PM – 2:00 PM	Skills development workshop
November 6th, 2022	11:59 PM	Submission deadline
November 30th, 2022	1:00 PM – 3:00 PM	Live demonstrations for top five

** All times are presented in Eastern Standard Time*

The teams who will be invited to pitch live on **November 30th, 2022** will be notified by email by **November 20th, 2022**. Teams who did not make it to the top five are allowed and encouraged to attend the live demonstration event.

Resources

As part of the competition, an informational webinar will be hosted in partnership with the City of London on **September 27th, 2022 from 1:00 PM – 2:00 PM EST**. The purpose of this webinar is to provide additional information about the lesson topics outlined above. Students are encouraged to attend the webinar live, but if they are unable to attend, a recording will be made available afterwards. The City of London has also provided a list of resources that students can review. These can be found on the Rain It In website: www.rainitinsc.com/thecompetition/

Rain It In will also host a virtual mentorship workshop on **October 15th, 2022 from 1:00 PM – 3:00 PM EST** to help connect students with industry professionals who will provide mentorship on their project ideas and share information about different career opportunities. Rain It In will also host a virtual skills development workshop on **October 22nd, 2022 from 1:00 PM – 2:00 PM EST** to teach students the fundamentals of how to give an effective pitch.

In addition to the resources provided by the City of London and Rain It In, student teams are allowed and encouraged to do their own research and make their own connections with industry professionals as needed.

Project Deliverables

- Short description from creators introducing submission and outlining: Name, Lesson/Message, Inspiration, Suitable Age Groups, What they Feel Makes the Experience Unique and Engaging
- A 5-minute demonstration video using prototype of kit (for demonstration only, physical asset is property of creators)
- List/inventory of reusable components and consumable components
- List/inventory of costs for all components (including vendors)
- Digital files of documentation (manuals, guides)

- Digital files of STL/Model/gcode of component parts
- Digital files of graphics used

All project deliverables should be submitted to the Google Drive for evaluation by **November 6th, 2022 at 11:59 PM EST**. A unique link will be provided to each student team after registration closes to use for their submission. There is no file type requirement for the submission. Student teams are not expected to create a high production video and will not be evaluated on the technical aspects of their video submission. However, students should do their best to ensure that the audio and visual quality of their video is good. The demonstration video should be **no longer** than 5 minutes.

All deliverables should be released to the City of London under Creative Common's license CC BY-NC-SA 4.0 (https://creativecommons.org/licenses/by-nc-sa/4.0/) which permits the copy, adaptation, and redistribution of the material in any medium with attribution for non-monetary uses (only for non-profit uses). Original intellectual property rights remain with its creators.

Team Registration

- Registration is open to registered full-time or part-time students at a college or university (undergraduate or graduate) in Canada
- There is no entry fee
- There are no travel requirements as all aspects of the competition will be hosted virtually
- Teams should consist of a **minimum of three (3) and a maximum of six (6) students**
- As climate change is a multi-sectoral problem, we recommend that participants build diversified teams across various programs to gain different perspectives and skills useful for developing a successful solution to the challenge
- Students do not need to be attending the same educational institution to be on the same team
- We strongly encourage student teams to work with mentors from their institution's internal incubator or accelerator programs

Judging and Evaluation

The judging panels will be comprised of individuals from a variety of backgrounds which could include municipal, academic, engineering, regulatory, conservation, communications, public education, and outreach. The number of judges and their affiliations will be shared throughout the competition.

There are two different judging panels who will evaluate the project submissions during the competition:

- The first panel of judges will evaluate all project submissions due on **November 6th, 2022 at 11:59 PM EST** to identify the top five teams

- The second panel of judges will evaluate the live demonstrations presented by the top five teams on **November 30th, 2022 from 1:00 PM – 3:00 PM EST**.

The scoring sheet on page 9 has been designed for the judges to use to evaluate the project submissions. The same evaluation criteria will be used by both panels of judges as the basis for judging all submissions.

Penalties

Participating teams that do not comply with the guidelines set forth in this document may be subject to penalties. Penalties will be reflected as points against the team's total score. Penalties include the following:

- Failure to have a minimum of one team member attend the mentorship workshop may result in a **5-point penalty** being assigned to the team's total score
- Failure to have a minimum of one team member attend the skills development workshop may result in a **5-point penalty** being assigned to the team's total score
- Failure to submit a project pitch recording on time may result in a **2-point penalty per day, including weekends, up to a maximum of 7 days**
- Teams who are invited to the final pitch event must be present at the beginning of the virtual competition and remain through to the completion of the event. Failure to do so may result in a **5-point penalty** being assigned to the team's final score

Teams will be notified of the penalties they have received. The above penalties may be modified by Rain It In. If this is the case, the teams will be notified of any changes.

Disqualification

A participating team may be disqualified from the Rain It In Student Competition, even if they have fully completed the challenge, if any of the following conditions apply:

- The team does not submit their project report by the set deadline
- Any member of the team is not a registered full-time or part-time student at a college or university in Canada
- A non-student, such as a working professional, completes or provides significant input into the design or creation of the prototype
- The team is found to have engaged in plagiarism
- The team is found to have engaged in an act that, in the sole opinion of Rain It In and/or the project sponsor, is regarded as unethical or disgraceful

Disqualification will prevent a team from winning Rain It In's Fall 2022 Student Competition.

Awards

The following are the awards that will be presented to the teams participating in Rain It In's fall 2022 student competition. The awards are subject to change at the discretion of Rain It In:

First Place

- A seed grant worth $5,000.00
- A cash prize worth $500.00
- Recognition in at least one industry publication as well as on Rain It In's website and social media channels
- An award recognition certificate for each team member

Second Place

- A cash prize worth $300.00
- Recognition in at least one industry publication as well as on Rain It In's website and social media channels
- An award recognition certificate for each team member

Third Place

- A cash prize worth $200.00
- Recognition in at least one industry publication as well as on Rain It In's website and social media channels
- An award recognition certificate for each team member

The team who is awarded the seed grant will receive ongoing support from Rain It In and its network to further develop and commercialize their prototype. In order to receive the funding, the team will be required to provide Rain It In with regular updates, a timeline, a budget and receipts for expenses.

All students who complete the challenge in full will receive a participation certificate.

Expense Reimbursement

Rain It In will reimburse up to **$100.00 per eligible team** (up to a maximum of 40 teams) for costs associated with the creation of a prototype. To be eligible for reimbursement, teams must:

1. Have registered their team by the registration deadline of **October 1st, 2022 at 11:59 PM EST**;
2. Had at least one (1) team member attend the mentorship workshop and the skills development workshop. It does not need to be the same team member who attends each event;

3. Completed the project in full;
4. Submitted a complete prototype; and
5. Provided copies of all receipts associated with the creation of their prototype

Student teams who do not meet the eligibility requirements will not be reimbursed. Student teams who withdraw or are disqualified from the competition are not eligible for reimbursement. If more than 40 teams are eligible for reimbursement, reimbursement will be given based on the order of registration, which will be provided in the registration confirmation email.

Evaluation Criteria

Appropriateness of lesson	1	2	3	4	5
Valid age groups (versatility of design)	1	2	3	4	5
Effectiveness of approach in engaging users	1	2	3	4	5
Effectiveness of approach in improving understanding	1	2	3	4	5
How fun it is	1	2	3	4	5
Ease of set up	1	2	3	4	5
Ease of clean up	1	2	3	4	5
Ease of use	1	2	3	4	5
Cost	1	2	3	4	5
Quality of component design	1	2	3	4	5
Ease of replacing parts (maintenance)	1	2	3	4	5
Safety of design and components	1	2	3	4	5

Total Score **/60**

Notes: