Eight visual arts and engineering students can now enjoy bragging rights for leaving their mark on the University. The brand-new STEM Complex showcases the two works of art they created and built as part of the STEAM project

Interactive student art adds creative spark to STEM *by Laura Darche*

Eight students now have bragging rights for leaving their mark on the University. Since early September, the brand-new STEM Complex has been home to two interactive works of art that these students created and built (*Surface Tension* and *Equilibrium*) as part of the STEAM project, combining the arts ("A") with the STEM disciplines (science, technology, engineering and mathematics). Talk about a dream summer job.

In March 2018, engineering students Devansh Shah, Keshav Deeljur, Marc Leblanc and Elliott Carrière, won the Makerspace Challenge, which gave them the opportunity to produce the prototype for an interactive work of art, and then build and install their creations in the STEM Complex in time for its September opening. Visual arts students Sarah Hodgson, Lucy Oulanova, Hannah Lacaille and Elizabeth Lebedev were selected from among many candidates to join the two teams. Together, they worked tirelessly to complete the project in four months.

The Surface Tension team takes a break from assembling their artwork in the STEM Complex.

Surface Tension

This wall representing a wave is composed of triangles whose surface reacts to the movement of passersby by undulating. Inspired by the Ottawa River, the work illustrates the interconnectedness of disciplines through the operational cohesion of various components, each representing a discipline: visible mechanisms for engineering, delicate aerial collages for art and illustrations based on enlargements of micro-organisms collected from the Ottawa River to represent science.

Breaking down barriers

"This project is an incubator for innovation because it involves making people who wouldn't normally work together combine their respective expertise. It allows them to understand another discipline's perspective and to realize that everyone's contributions produce a richer result." — Chantal Rodier, director, STEAM project

This major interdisciplinary initiative allowed participants to step outside their respective fields and taught them specific lessons: art students are now aware of the moments of force affecting a structure, and engineering students now consider the visual impact of the technical solutions they come up with.

> "The actual design is so different from the original that you wouldn't recognize it, and part of it is thanks to the artists. They helped the visually pleasing side of it take a big step up." — Elliott Carrière (civil engineering)

Obviously, such an ambitious project demands a lot of monitoring and coordination, both by the professionals involved in constructing the STEM Complex and the two teams. In the process, participants gained team management and project management skills.

"I've never built something giant before or had a budget to worry about, so it was good practice learning what it's like to go through other people, having to get approvals, requests… You realize you need to manage your time a little better because when you ask for something, it may take a week before you get it." - Elizabeth Lebedev, (5th year, visual arts)

Elizabeth Lebedev and Hannah assemble Equilibrium.

Equilibrium
In science, "equilibrium" refers to a state of balance between two opposing forces, which is exactly what this structure represents, activating as people climb the staircase over which it hangs.

An unparalleled opportunity

Students finding a summer job in their field are often the exception to the rule. Sarah Hodgson (fourth year, visual arts), who is interested in a career in public art, was delighted by the opportunity to apply the theory she learned in class to a real-life setting, and to get a sense of what it would mean to earn a living as an artist. The same was true for engineering students like Devansh Shah, who discovered a new dimension to his studies through the project:

"We've had a lot of projects in engineering, but rarely did we get to actually build one — it was all just conceptualized. So, this was a good project to link all the theory that I've learned to something that was hands on, where I could see my mistakes and make my thought processes better." — Devansh Shah (4th year, mechanical engineering)

The project also offered a golden opportunity to work with engineers, architects, contractors and the career artists involved to achieve high-quality results. This professional supervision was exciting and rewarding.

"They guide us and show us the best way to do even the little things. They're not doing the work for us, but definitely pushing us the way we should be going." — Marc Leblanc, 2nd year, civil engineering

Contact points:
Hanan Anis : hanis@uottawa.ca
Chantal Rodier : chantal.rodier@uottawa.ca
Lorraine Gilbert : lorraine.gilbert@uottawa.ca

Motivated mentors

None of this would have been possible without Hanan Anis, holder of the Chair in Entrepreneurial Engineering Design and Makerspace Challenge supervisor; Chantal Rodier, director of the STEAM project and Public Art on campus consultant; and Lorraine Gilbert, director of the Department of Visual Arts. The result of an unprecedented collaboration, this interdisciplinary pilot project required a lot of work but also uncovered new approaches to inter-departmental collaboration, with concrete results: in addition to offering students an incredible experience, the project will leave the University community with interactive works of art that enhance the value of the building and the campus.

***STEAM Project**: Back : Dan McTavish, Architect, Perkins+ Will; Matt Johnston, Principal, Perkins+Will; Claudio Brun del Re, Chief Architect, uO; Chantal Rodier, director of the STEAM project; Elizabeth Lebedev; Hannah Lacaille; Mohamed Hassan; Marc LeBlanc; Keshav Deeljur; Lucy Oulanova; Samiddha Aryasinghe, Chief, Grands projets, uO; Charles Azar, Subject Matter Expert, uO. Front : Andrew Frontini, Design Principal, Perkins+Will; Elliott Carrière; Laura Weller; Devansh Shah; Sarah Hodgson; Hanan Anis. Absents : Lorraine Gilbert; Muslim Majeed, P.Eng Structural Lab uO; Robert Van Lin, Architect, Perkins+Will.*

***Photos :** Bonnie Findley*