

# A RIDE TO REMEMBER

## Interdisciplinary Team Thrills Judges in Amusement Park Contest

— DECEMBER 4, 2019 —

In their first outing at the Ryerson Invitational Thrill Design Competition, Carnegie Mellon University students wowed judges at Universal Studios in Orlando with a creative approach to adapting an existing amusement park ride.

The interdisciplinary team, which included undergraduate and graduate students, won an overall team award for Engineering Design Challenges as well as awards for Accommodation Design, Safety and User Experience. Judges included executives from Universal and other industry companies.

Throughout the four-day competition, 120 students from 16 invited universities were tasked with selecting multiple design challenges that best suited their talents, skills and interests. Using their imaginations, computer software and rhetorical skills, they prepared solutions to problems over a long weekend, rather than an entire semester, employing CAD drawings, design sketches, complex mathematics and proof of plausibility.

The competition was a microcosm of the work the students have been doing for years at CMU.



*At the Ryerson Invitational Thrill Design Competition at Universal Studios, Monica Toren, Nidhi Ramanathan, Conor Triplett, Carolyn Youstra and James Biltz won an overall team award for Engineering Design Challenges as well as awards for Accommodation Design, Safety and User Experience. The interdisciplinary team prepared top-secret solutions to adapt an existing amusement park ride for greater accessibility.*

The team's award-winning work remains top secret and proprietary intellectual property of Universal Creative, which sponsors the competition with Ryerson University.

"They couldn't even tell me what they did," said Shirley Saldamarco, a special faculty member from Carnegie Mellon's Entertainment

Technology Center (ETC) and the team's mentor.

The team included ETC graduate students Conor Triplett and Nidhi Ramanathan, mechanical engineering senior James Biltz and sophomore Carolyn Youstra and fifth-year architecture student Monica Toren.

The competition organizers offered preparatory workshops and information on collaboration across fields of study. Saldamarco said engineers, architects and artists all speak different languages when it comes to expressing their ideas or verbalizing their processes. For the CMU team, opportunities to blur the boundaries between their disciplines are woven into the fabric of the Integrative Design, Arts and Technology (IDeATe) and ETC courses they take with Saldamarco.

“What makes CMU stand head and shoulders above other universities is that we embed this sense of collaboration and interdisciplinary teamwork into our pedagogy,” Saldamarco said.

Graduate students at the ETC spend two years building virtual worlds, assisting actual clients with interactive experiences and completing cooperative work assignments at places like Walt Disney World or, in Triplett’s case, the Fred Rogers Center in Latrobe, Pennsylvania.

Undergraduate students have the opportunity to merge technology and creativity through the IDeATe network, which offers undergraduate minors and courses in game design, animation and special effects, sonic arts and more.

Biltz, Toren and Youstra participate in CMU’s Theme Park Engineering Group (TPEG), which created The Old Mill dark ride immersive experience in Skibo Gymnasium for Carnival 2019.

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“We are used to collaborating across disciplines, so we all knew terminology and what is possible from team members in other fields,” Biltz said.

Knowing what Toren can do as an architect, for instance, helped the engineers on the team divide up the work and prepare a polished presentation under pressure.

One of the Ryerson challenges the team pursued concerned accessibility in theme parks, Triplett said.

“The industry is really focused right now on how we can make experiences safe for guests of all abilities,” he said. “Our challenge focused on how to retrofit an existing experience to help one subset of the community to better experience it.”

Triplett couldn’t say whether they focused on guests with visual impairments, mobility challenges or neurological differences, but he did say his team experienced the park with new awareness of the user experience. They used their competition guest passes to research Universal Studios with a focus on accessibility.

The team also studied requirements of the Americans with Disabilities Act, travel and transportation regulations, and the approach other theme parks have taken to address similar challenges.

Ramanathan first visited a theme park in eighth grade and said she was mesmerized by Universal Studios Singapore. She was determined to find a way to combine her passion for technology with her creativity. She viewed the competition as a prescreening for the types of jobs she and other students were pursuing.

“We learned so much about how extensive and thorough the entertainment industry is,” Ramanathan said. “We also saw how we can fit in there as creatives, engineers and experience designers.”

That time will come sooner than later for part of the team. Triplett, Toren and Ramanathan walked away with internship offers at Disney and Universal beginning in January. As for the remaining members, they are deep into work on a new dark ride for Carnival 2020.