



# TORONTO SECTION

CANADIAN SOCIETY FOR CIVIL ENGINEERING

## The Ups and Downs of Designing Amusement Park Rides and Attractions

There are many ups and down working in the amusement park industry, both literally and figuratively. Significant challenges are often faced when attempting to develop and implement innovative solutions that are both economical for the owners and ready in time for guests on opening day. Nowhere is this more apparent than for high adrenaline thrill-rides at Canada's Wonderland such as **Leviathan**, Canada's tallest and fastest roller coaster, **Windseeker**, a 301-foot-tall swing ride, and **Wonder Mountain's Guardian**, a 4D interactive dark ride that weaves in and out of Wonder Mountain.

This presentation will highlight the challenges faced and solutions developed for the three aforementioned rides. The **Leviathan** component will focus on designing over 200 concrete foundations for high lateral and compressive loads. The **Windseeker** component will give an overview of mass concrete foundation design and construction. And the **Guardian** component will focus on design concepts, modelling, analysis, and design of the structural steel supports.

<b>DATE</b>	Wednesday March 23 <sup>rd</sup> , 2016
<b>TIME</b>	6:30 pm refreshments/light meal/registration - <b>7:00 - 8:30 pm presentation</b>
<b>LOCATION</b>	University of Toronto, Lassonde Mining Building, MB 128 170 College Street, Toronto, Ontario
<b>REGISTRATION</b>	<a href="#">CLICK HERE TO REGISTER NOW</a>

### Speakers:

**Tyler Lahti, P. Eng.** is an associate and structural engineer in the building department at R.V. Anderson Associates Limited (RVA). He has 10 years of experience in the design and construction of civil engineering infrastructure projects. This includes both new construction and the rehabilitation of water and wastewater facilities, tunnels, spillways, buildings, municipal sewers, and roller coasters. Tyler has a variety of modelling, drafting, design, and project management experience for the following attractions at Canada's Wonderland: Italian Job, Behemoth, Leviathan, and Wonder Mountain's Guardian.

**David O'Sullivan, P. Eng.** is an associate and structural engineer in the building department at RVA. He has 9 years of experience in the design and construction of civil engineering infrastructure projects. This includes design and project management of bridges for CN Rail, Metrolinx, and various municipalities across the GTA. David's involvement with Canada's Wonderland includes the mass concrete foundation for Windseeker and design of the ride station for Leviathan. He also serves as Chapter Director (Ontario) with the American Concrete Institute (ACI), and he is an associate member of the committee ACI 343 for Concrete Bridge Design with ACI International.

**Mark Bruder, P. Eng.** is an associate and structural engineer in the building department at RVA. He has 7 years of experience in the design and construction of civil engineering infrastructure projects in the field of water, wastewater, municipal, and urban development. Previous work includes design/drafting of new water/wastewater treatment plants, condition assessment and rehabilitation of existing infrastructure, and specialty structural analysis/design. Mark's involvement with Canada's Wonderland includes concrete foundations for Leviathan and structural engineering for The Guardian. He also serves as a Producing Member of the ASTM Committee F24.24 on Amusement Rides and Devices.



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Leviathan



Windseeker



Wonder Mountain's Guardian

