

MoonRanger

- As part of my role in the MoonRanger project, I have helped update Wikipedia pages including for [CubeRover](#) and [Lunar Rover](#) along with Professor William Red Whittaker.
- For NASA's LuSTR proposal, I helped research, draft, write, and edit qualification biographies including but not limited to:

Eric Reiners has completed stellar work for Caterpillar Inc. for over 30 years and is the company's principal point-of-contact with NASA. As an experienced Integrated Components & Solutions Division Program Manager for Caterpillar, Reiners has gained significant experience in machine design, analysis, testing, new technology introduction, new product introduction, product quality and reliability, and development of collaborative government research. Eric's skills have allowed him to define programs and fund technologies ranging from operator assistance through remote control to full autonomy and connectivity based optimized coordination of multiple machines across a job site. As a revolutionary innovator himself, Reiners currently holds ten patents for machine design and automation algorithms.

Dan Negrut is an expert in the Chrono simulation platform, a multi-physics library that provides support for rigid body dynamics, flex-body dynamics, terramechanics, fluid-solid interaction, vehicle dynamics, robotics simulation, and granular material dynamics. The outcome of Negrut's research is funneled into this platform and has led to ongoing development aimed at implementing support for sensor simulation, AI, and scalable AV simulation. Upon joining the University of Wisconsin-Madison, Negrut founded the Simulation-Based Engineering Lab, which currently has more than 25 students and staff. The lab is pursuing research and development in four areas: modeling and simulation of friction and contact; meshless methods for computational mechanics (focus on the smoothed particle hydrodynamics, SPH, method); closing the simulation-to-reality gap in robotics; and use of hardware acceleration (multi-core, many-core, GPU computing) for large-system simulation (millions to billions of degrees of freedom). These research thrusts are anchoring applied work in off-road wheeled and tracked vehicle simulation; granular dynamics simulation; simulation of deformable terrains; sensor simulation; simulation-in-robotics; multi-agent simulation framework for autonomy design and testing.

Krzysztof Skonieczny is a skilled aerospace engineer with a plethora of technical and research experience. Skonieczny is a former Carnegie Mellon Ph.D. student who is now an Associate Professor at Concordia University and is Canada Research Chair Tier II in Aerospace Robotics. Krzysztof is knowledgeable in a wide range of research fields drawing from aerospace studies and engineering. While at Carnegie Mellon University, Krzysztof and his team were revolutionary in flying novel wheel-soil experiments aboard an aircraft with parabolic arcs to achieve Martian and Lunar gravity. He also developed a metric to explicitly assess mobility risk based on data-driven slip versus slope relationships, a metric proven useful for early detection of potentially hazardous changes in rover-terrain conditions. Krzysztof was also Principal Researcher at Astrobotic Technology Inc., where he was key in leading the research and development of a novel robotic excavator for the Moon and Mars: the Polaris Excavator. More recently, Krzysztof has established an Aerospace Robotics Research Laboratory, advised graduate students, and taught design, aerospace,

and robotics courses at Concordia University. Krystof has received many awards for his scientific research including an NSERC Postgraduate Scholarship for his Doctoral program, the Concordia University President's Excellence in Teaching Award for Excellence in Teaching as a new teacher, and Concordia University's President's Medis Outreach Award as the International Research Communicator of the Year.