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Colleen Molloy Farrelly* (cfarrelly@med.miami.edu), 9201 SW 180th Street, Palmetto Bay, FL 33157. *Applications of Geometry, Topology, Differential Equations in Data Science.*

As a research and development data scientist with experience in many industries, Colleen M. Farrelly will discuss the intersection of mathematics and industry, focusing on a few problems she's faced and solved in her career so far.

Problems overviewed include applications of homology to survey research, prediction of disease spread on travel networks using discrete Ricci flow, and the use of stochastic differential equations to understand behavioral dynamics within populations.

She'll end with career advice and key resources for students hoping to enter math-heavy industry positions. (Received March 02, 2021)