

Math Will Help Save the World

By Rebecca Fishbein, ASA, MAAA, EA

I truly believe math will help save the world. Actuaries, as the stewards of math application to the general public, have an important role to play in this goal. The world is changing faster than it ever has – and no one knows what the future will hold. What we do know, is that our actuarial ability to see patterns, to anticipate future trends, and to help the general public prepare for what may be, will be integral to the future.

To be clear: it isn't all up to the actuaries. Human behavior needs to change quickly. Climate change is already bringing a slew of health and financial issues. Economic disparity in times of crisis is being exacerbated. Polarized opinions continue to divide us and keep us from collaborating on these and other important issues. Humans need to recognize these situations more broadly and make changes in behaviors to help heal the world. But, while the world continues at its current pace, the math we love, in combination with our problem solving and modeling skills, will be instrumental in maintaining a sense of safety and security broadly. We must continue to predict, prepare and insure for the future so that the public is protected.

One of the wonderful things about cognitive thinking is the ability to learn from the past to anticipate the future. This ability allows humans, and other animals, to make decisions today that will help them tomorrow and beyond, based on what they, and others, have experienced in the past. This skill must be practiced and honed. Math is one of the ways we learn this skill as we grow up. From solving algebraic equations to geometric proofs, we learn through math how to act in the now to get to a desired outcome in the future. We learn from others who have proved and solved before us, what methods are most efficient and effective in getting future results.

Actuaries take this to the next level. No longer just a straight-line set of logical steps as it was in grammar and high school, we are required to think about the outcome desired and work back through a myriad of issues that *could* happen in the future, in order to give us the best chance to reach our desired future state. We rely on our collective past experiences to influence our future plans. In order to work towards a more protected and secure state, we take into account interest rates, human behavior, demographic patterns and shifts, and much more, with each of these future-influencers being vulnerable to other sets of influencers themselves. Our problem-solving roles are much more like fractals than two-step equations, and we know the general public is not equipped to navigate these landscapes. Actuaries must continue to evolve our thinking to keep up with the changing world, as the public is counting on us to do so.

We never have been able to, nor will we be able to in the future, do this work as single individuals. Our internal experts and external allies are imperative to our success. Computers and their power have been and will continue to be wonderful aids to our plight. And our cross-actuarial-silo collaboration that will continue to evolve as the big issues continue to become more and more complex are, and will be, pivotal for our work.

Actuaries are part of an intricate network that forms a safety net for the world and we will continue to temporarily solve humanistic problems with mathematical models until humans cease to create the problems themselves.