

1147-97-841 **Sara Jamshidi Zelenberg***, 10 W. 32nd St., Room 110, Chicago, IL 60605. *Mathematics for sustainability*.

Measuring, flowing, connecting, changing, risking, and deciding—John Roe envisioned these six quantitative concepts as the foundation of mathematics in service of sustainability. That means the corresponding textbook and course, which is specifically designed for non-STEM (science, technology, engineering, and math) students, covers

- orders of magnitude,
- derivatives and equilibrium states,
- graph theory,
- tipping points,
- probability, and
- game theory.

In addition, the book and course emphasize *writing* in order to push students to apply these concepts to real-world situations, as exemplified by the 10 case studies within the book. The goal of the book and the course was that students would leave the course empowered to make their own decisions for themselves and the planet.

In addition to covering the book and course, this talk will also discuss some volunteer work done by John Roe in the area of sustainability, including his TEDxTalk that argues why we need mathematics for sustainability: <https://youtu.be/wn-Dje00DHk> (Received January 29, 2019)