

1154-00-2661

Heidi Berger* (heidi.berger@simpson.edu), 701 N. C Street, Indianola, IA 50125. *The Upside of Down Syndrome: Math is My Superpower!*

My son Isaac has Down syndrome. He was born in 2015, within a year of me receiving tenure at Simpson College. The experience of being his mother has had a profound effect on me as a mathematician. Having been with him through eleven surgeries over sixteen hospitalizations, I wanted to learn about his medical complexities and, more generally, about coordinated health care for those with chronic illness. To accomplish these goals, I've looked to my teaching and research. In the spring of 2016, I designed a sophomore-level mathematical modeling course on the respiratory system. In the summer of 2016, I led a group of three undergraduates to utilize location analysis as a means of understanding patient access in the health care system. We used p-median and maximal covering models to investigate patient access to Down syndrome specialty care clinics in the United States. More recently, together with a graduate student in medical anthropology and a handful of undergraduates in mathematics, I've initiated a project on family perspectives of attending a Down syndrome specialty care clinic. Through teaching and research, I've used math as my superpower to help understand and improve health care for individuals with Down syndrome. (Received September 17, 2019)