Department of Mathematics

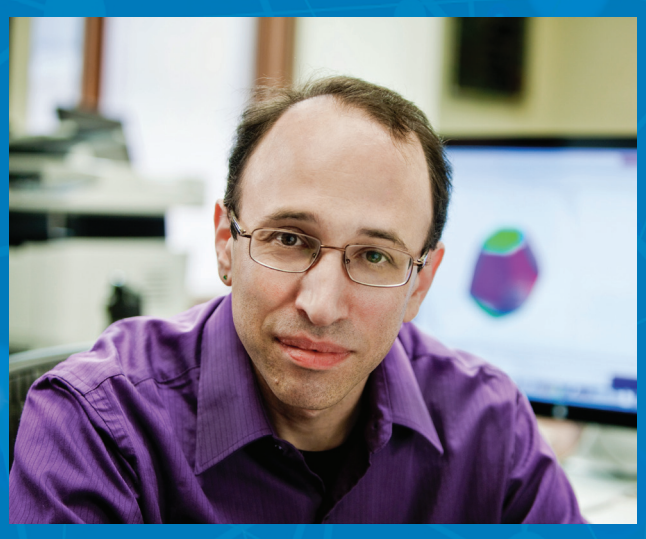
Pacific Institute *for the* Mathematical Sciences

2017 Niven Lecture

May 29, 2017
1:00 pm

Math. Annex, room 1100
1986 Mathematics Road
The University of British Columbia

SPEAKER: **Daniel A. Spielman** (Yale University)



Using Physical Metaphors to Understand Networks

Networks describe how things are connected, and are ubiquitous in science and society. Networks can be very concrete, like road networks connecting cities or networks of wires connecting computers. they can represent more abstract connections such as friendship on Facebook. Networks are widely used to model connections between things that have no real connections. For example, Biologists try to understand how cells work by studying networks connecting proteins that interact with each other, and Economists try to understand markets by studying networks connecting institutions that trade with each other.

Questions we ask about a network include “which components of the network are the most important?”, “how well do things like information, cars, or disease spread through the network?”, and “does the network have a governing structure?”.

Professor Spielman will explain how mathematicians address these questions by modeling networks as physical objects, imagining that the connections are springs, electrical resistors, or pipes that carry fluid, and analyzing the resulting systems.

FOR MORE INFORMATION VISIT:
http://www.pims.math.ca/scientific-event/170529-nldas

ABOUT THE NIVEN LECTURES

Ivan Niven was a famous number theorist and expositor. His textbooks won numerous awards, have been translated into many languages and are widely used to this day. Niven was born in Vancouver in 1915, earned his Bachelor’s and Master’s degrees at UBC in 1934 and 1936 and his Ph.D. at the University of Chicago in 1938. He was a faculty member at the University of Oregon from 1947 until his retirement in 1982. The annual Niven Lecture Series, held at UBC since 2005, is funded in part through a generous bequest from Ivan and Betty Niven to the UBC Mathematics Department.