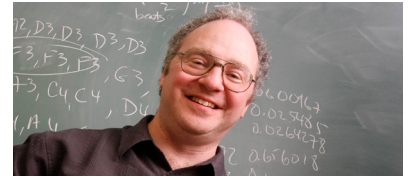


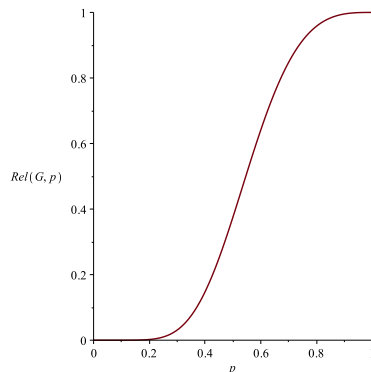
# Jason I. Brown

## Discrete Mathematics

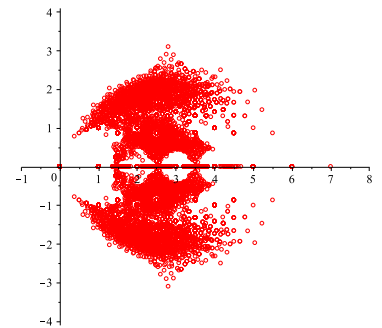


Dr. Brown's area of research includes graph theory and its connections to other branches of mathematics, such as algebra, analysis and probability theory. Problems of interest include:

**Chromatic polynomials** – how many ways can you colour the vertices of a graph so that adjacent vertices get different colours? For these polynomials, what can you say about their roots? Where are they located? How fast can the real and imaginary parts grow?

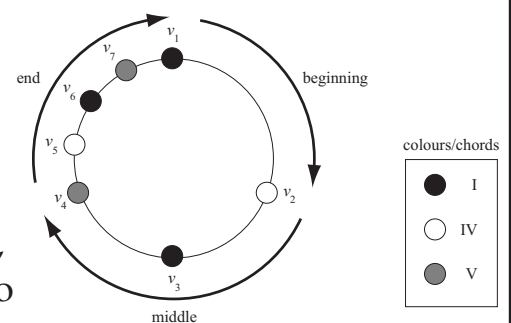


**Network reliability** – if the vertices of a graph are always working but the edges fail independently, what is the probability that all of the vertices can communicate? How can best approximate these functions? What analytic properties do they have?



He carries out research as well on the **connections between mathematics and music** to answer:

- How did The Beatles play the opening chord of *A Hard Day's Night*?
- Why are the blues so good?
- Could the most famous edit in rock 'n' roll have been improved?
- When a song's authorship is in question, how can you mathematically decide who likely wrote the piece?



For more information, contact:

**Dr. Jason I. Brown**  
 Department of Mathematics and Statistics  
 Dalhousie University  
 (902) 494-7063, [jason.brown@dal.ca](mailto:jason.brown@dal.ca)

