

**FRAMINGHAM STATE UNIVERSITY** 100 State Street, P.O. Box 9101 Framingham, MA 01701-9101 FIFTEENTH ANNUAL PRESKENIS LECTURE

WHO IS REALLY IN CHARGE? CONNECTING GRAPH THEORY TO SOCIAL NETWORK ANALYSIS

> DONNA BEERS SIMMONS COLLEGE



**Abstract:** Have you ever wondered who is really in charge? Who is at the center of whatever is trending? Who influences policy decisions? Who motivates groups that bring about change?

Leaders, whether in business, government, or education, are interested in who is at the heart of all that is happening, whether those individuals be trendsetters, revolutionaries or superspreaders of a contagious disease.

In this talk, we provide a brief introduction to network analysis and to the graph theory tools and techniques for detecting the key actors within a social network. With these tools, we will show how to find out who was really in charge among the revolutionaries prior to the American Revolution as well as among the individuals behind 9/11. We will offer examples of projects where students may discover who is in charge by applying graph theory and computational tools to analyze social networks.

Dr. Beers is the 2015 winner of the NES/MAA Award for Distinguished College or University Teaching, the 2012 winner of the Toby Sloane Award for Student-Centeredness in Teaching at Simmons College, and the 2007 winner of The Mathematical Association of America (MAA) Certificate for Meritorious Service. She is coauthor of the MAA Guidelines for Undertaking a Self-Study in the Mathematical Sciences as well as the author of numerous articles in the areas of group theory and group algebras of infinite abelian groups, teacher education and preparation, and the scholarship of teaching and learning. A dedicated teacher committed to excellence, a serious scholar, a popular son of South Boston, and a gentleman, Ken Preskenis had a passion for mathematics and for sharing that love with others, especially, youngsters. He joined the faculty at Framingham State University in 1977 after teaching at Newton College and then at Boston College for a total of 14 years. Ken was the author of a number of articles in analysis and mathematics education, a regular attendee and contributor at NES/MAA meetings, a South Boston Athletic Hall of Famer, and a recipient of the Michael E. Glynn South Boston Community Service Award. The Kenneth J. Preskenis Scholarship Fund has been established in his memory at Framingham State University.

We thank

- Office of the Vice President of Academic Affairs for sponsoring the Reception,
- Sodexho,
- Pearson Education,
- W.H. Freeman/Worth Publisher/Macmillan Higher Education,
- Agatha Buisson, Ralph Eddy, and Dining Services for preparing the dinner buffet and the reception,

and

• Office of Campus Events for making the reservations, arrangements, and set-up for Dr. Beers's presentation and the reception.

Please join us again next year for the *Sixteenth* Annual NES/MAA Preskenis Lecture.