SIAM Meeting on 11/17/20 - Talk by Prof. Yannan Shen
Assistant Professor of Mathematics, University of Kansas

- Prof. Shen opened by introducing her talk, "Nonlinear Wave in Transmission Lattice Metamaterial," and provided background for metamaterials.

- Prof. Shen gave a one dimensional model for metamaterials and covered the quasi-continuum approximations.

- Prof. Shen showed how nonlinear Schroedinger equation relates to the bright and dark soliton.

- Prof. Shen displayed some numerical results from solitons traveling through a lattice at various frequencies and explained that the theoretical results predict the experimental results.

- Prof. Shen showed that rogue waves can be explained by the Peregrine Solution of the nonlinear Schroedinger equation – such "rogue waves" can also occur in metamaterial.

- Prof. Shen demonstrated some experimental results for the lattice problem and hree scenarios for two-dimensional non-linear Schroedinger equation.

- Three scenarios for two-dimensional non-linear Schroedinger equation.

- Prof. Pasik-Duncan and Alex Gisi nominated and introduced Caden Kroonenberg and Ian Phares for SIAM secretary and vice-president, respectively.

- Both nominations were approved with the full support of the audience.

- Prof. Shen fielded questions regarding upscaling of the presented equations and stochastic modelling of the equations.

- Prof. Pasik-Duncan closed by laying out the plan for SIAM in the coming week.

- Participants: 11

Alex Gisi and Bozenna Pasik-Duncan, Agnieszka Miedlar
Executive Board of the SIAM KU Student Chapter