## **Topics in Applied Mathematics:** Mathematical Modeling

 Math 396 Spring 2021
 https://zoom.us/j/83746366935 T 10:15am - 11:40am

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 http://sites.oxy.edu/ron/math/396/21/

## Week 3: Tuesday February 2

TITLE The ILT Model for Social Networks

- **CURRENT READING** "Models of Online Social Networks" (Bonato et al, 2009). "Complex networks and social networks" (Bonato & Tian, 2012).
- NEXT READING Prepare for guest lecture by Prof. Treena Basu on machine learning models by reading papers found at: https://sites.oxy.edu/ron/math/396/21/ models.html
- **SUMMARY** Today we will have a guest lecture from Prof.. Anthony Bonato of Ryerson Universty. He will discuss a model for social networks and describe how discrete mathematics can be applied to a real world situation

Prof. Bonato asked you to think about the following questions:

1. What properties of complex/social networks are we trying to simulate?

2. What properties does the ILT model provably have?

3. What are the strengths and drawbacks of the model?

## **RECALL: The 5 Step Modeling Approach**

- 1. Ask the question
- 2. Select the modeling approach
- 3. Formulate the model
- 4. Solve the model
- 5. Answer the question

GROUPWORK

Question How can we apply the 5-step method to the ILT Model?

Question What situation or question would you like to apply the ILT model to?

Question (How) Can you connect ideas of sensitivity analysis and robustness to the ILT model?