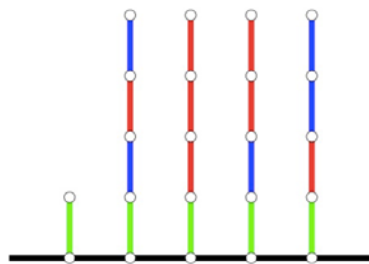# Richard Nowakowski
Discrete Mathematics

Dr. Nowakowski's areas of research include combinatorial game theory and games on graphs.

Combinatorial Games when represented abstractly have a surprisingly elegant mathematical structure. Find the values of sub-positions and then add the values together to have an analysis of the whole. But the terms 'values' and 'add' need to be viewed with suspicion. If the last player to move wins, great. If the winner has the most number of points, it's more complicated. If both players want to force the other to play last, it's strange.
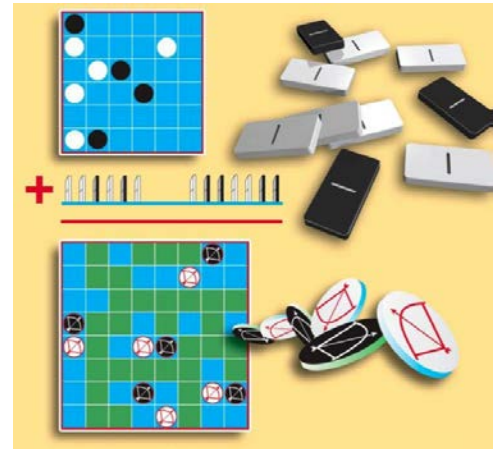
Games on Graphs. Good Guys pursuing Bad Guys on a graph is a basic question that has been used to model: how to clean contaminated networks, fight fires, and block lava flows; how influence is spread; even predicting social segregation. A slight change in the question leads to different techniques and answers. In a network of water tanks, connected by pipes, the water will level out, but change water to money being, spread by charity, the rich tend to stay rich.

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