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Patrick J Wolfe* (p.wolfe@ucl.ac.uk). *Big Network Data*.

How do we draw sound and defensible data-analytic conclusions from networks? This question has recently risen to the forefront of mathematical statistics, and it represents a fundamental challenge for data science. In this talk I will describe new large-sample theory that helps us to view and interpret networks as statistical data objects, along with the transformation of this theory into new statistical methods to model and draw inferences from network data in the real world. The insights that result from connecting theory to practice also feed back into pure mathematics and theoretical computer science, prompting new questions at the interface of combinatorics, analysis, probability, and algorithms. (Received September 22, 2015)