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**Yekaterina Epshteyn\*** (epshteyn@math.utah.edu). *Grain Structure, Grain Growth and Evolution of the Grain Boundary Network.*

Cellular networks are ubiquitous in nature. Most technologically useful materials arise as polycrystalline microstructures, composed of a myriad of small monocrystalline cells or grains, separated by interfaces, or grain boundaries. Grain boundaries play an essential role in determining the properties of materials across a wide range of scales. During grain growth (also termed coarsening), an initially random grain boundary arrangement reaches a steady state that is strongly correlated to the interfacial energy density. In this talk, we will discuss recent progress on modeling, simulation and analysis of the evolution of the grain boundary network in polycrystalline materials. (Received September 05, 2019)