

Engineering Sciences and Applied Mathematics**ESAM Seminar Series Presents:****Building a Proportional Cell: How Cells Control the Size of Their Organelles****Presented by:****Professor Jané Kondev
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The cell is not a bag of chemicals. Instead, its various functions are spatially segregated in micron-sized compartments. For example, the nucleus stores and processes genetic information, while the cytoskeleton provides tracks for intracellular transport. The size of these organelles affects their function and is under precise control by the cell. A widely discussed mechanism of size control, for which there is growing experimental evidence, is a limited pool of molecular building blocks. In this talk, I will consider the limitations that physics of diffusion imposes on this simple mechanism. In light of these theoretical results, I will discuss experiments on actin patches and cables in yeast, which provide examples of how nature circumvents these limitations. These experiments and related theory provide general ideas about how cells measure and control the size of their organelles.

**Monday, February 16, 4:00 PM
Technological Institute M416**For further information see <http://www.esam.northwestern.edu>Engineering Sciences and Applied Mathematics
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