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### **Topology and Robustness in the *Drosophila* Segment Polarity Network**

NICHOLAS INGOLIA, Harvard University, Department of Molecular and Cellular Biology

Previous work by von Dassow *et al.* demonstrated the robustness of a mathematical model of the genetic interactions that define the polarity of *Drosophila* embryo segments. I showed that this robustness is due to the positive feedback of gene products on their own expression. This topological feature of the network allows individual cells in the model segment to adopt different stable expression states (bistability) corresponding to different cell types in the segment polarity pattern. A positive feedback loop will only yield multiple stable states when the parameters that describe it satisfy a particular inequality. By testing which random parameter sets satisfy these inequalities, I show that bistability is necessary to form the segment polarity pattern and serves as a strong predictor of which parameter sets will succeed in forming the pattern.