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### **Contribution of Individual cells to homeostatic balance and imbalance in epithelia**

Epithelial tissues (simple or stratified) form multicellular systems of well defined topology and function. In order to maintain such a fine tissue microarchitecture individual cells must act collectively and respond to signals from their neighbors and from the environment. I will present a mathematical model and computational simulations addressing the questions of individual contributions of epithelial cells to tissue homeostatic balance during its development and turnover. In contrast, the disruption of tissue structure is often associated with the initiation and progression of abnormal tissue states, such as tumors. Specific local cell-cell interactions that can lead to the emergence of abnormalities on tissue scale will be also discussed.