

---

**STEPHANIE PORTET**, University of Manitoba, Winnipeg, Manitoba  
*Dynamics of in vivo intermediate filament organization*

The cytoskeleton is a complex arrangement of structural proteins organized in networks: microfilaments, intermediate filaments and microtubules. Each network has specific properties and organization as well as particular roles in the cell. The organization of a cytoskeletal network is the main determinant of its cellular function.

In this work, the organization of the intermediate filament network is studied. The model describes the dynamics of four structural states of the intermediate filament material: soluble proteins, particles (precursors of filaments), and short and long filaments. Assembly processes are considered, taking into account the formation and growth of particles, the elongation of particles into short filaments, and the integration and solubilization of filaments. Different hypotheses are tested by mathematical and numerical analysis.