



*As part of our "Nano & Micro-Systems for Cell Biology" seminar series,  
we are delighted to invite you to attend this seminar to be given in english by :*

## David KOVAR

UC Chicago

Friday 19 September 2014  
At 11 AM



### Regulation of F-actin network homeostasis by competition for limiting components

Salle Nevill Mott (D420 - 3<sup>e</sup> étage)  
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[ACCESS MAP]

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### Regulation of F-actin network homeostasis by competition for limiting components.

Fission yeast utilizes Arp2/3 complex and formin to assemble diverse filamentous actin (F-actin) networks within a common cytoplasm for endocytosis, division and polarization. Although these homeostatic F-actin networks are usually investigated separately, competition for a limited pool of actin monomers (G-actin) helps regulate their size and density. However, the mechanism by which G-actin is correctly distributed between rival F-actin networks is not clear. Using a combination of cell biological approaches, and in vitro reconstitution of competition between actin assembly factors, we discovered that the small G-actin binding protein profilin directly inhibits Arp2/3 complex-mediated actin assembly. Profilin is therefore required for formin to effectively compete with excess Arp2/3 complex for limited G-actin, and to sufficiently assemble F-actin for contractile ring formation in dividing cells.

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