

## Phill Hawkins, graduate of the School of Biosciences, elected Fellow of the Royal Society

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We shall be welcoming Phill Hawkins from the Babraham Institute for this seminar on Thursday 4 July. Phill obtained his PhD here in Bob Michell's laboratory. Since about 1990 he and Len Stephens, another Birmingham graduate, have jointly led a research group at the Babraham Institute that has been making ground-breaking discoveries about the phosphoinositide 3-kinase (PI3K) signalling system that is activated by many extracellular stimuli (including insulin and several growth factors) to regulate cell growth and other functions.



Remarkably, both Phill and Len have recently been elected Fellows of the Royal Society for their joint work, and Phill was the Biochemical Society's Morton lecturer in 2006.

Their group has played major roles in providing understanding of several areas, including:

- the molecular characteristics and regulation of PI3Ks, especially a Gbg-regulated PI3K that is particularly important in chemotactic responses of neutrophils and other haematopoietic cells;
- identifying PH-domain-containing proteins that serve as PtdInsP3 effectors; and
- defining the biological roles of these and other phosphoinositide-dependent signalling processes.

Some of their key publications are listed below.

Stephens, L.R., Jackson, T.R. & Hawkins, P.T. (1993) Agonist-stimulated synthesis of phosphatidylinositol (3,4,5)-trisphosphate: a new intracellular signalling system. *Biochim. Biophys. Acta.* **1179**, 27-75.

Stephens, L.R. et al. (1997) The Gβγ sensitivity of a PI3K is dependent upon a tightly associated adaptor, p101. *Cell* **89**, 105-114.

Stephens, L. et al. (1998) Protein kinase B kinases that mediate phosphatidylinositol 3,4,5-trisphosphate-dependent activation of protein kinase B. *Science* **279**, 710-714.

Ellson, C.D. et. (2001) PtdIns(3)P regulates the neutrophil oxidase complex by binding to the PX domain of p40phox. *Nature Cell Biology* **3**, 679-682.

Krugmann, S. et al. (2002) Identification of ARAP3, a novel PI3K effector regulating both Arf and Rho GTPases, by selective capture on phosphoinositide affinity matrices. *Molecular Cell* **9**, 95-108.

Welch, H.C.E. et al. (2002) P-Rex1, a PtdIns(3,4,5)P3- and Gβγ-regulated guanine-nucleotide exchange factor for Rac. *Cell* **108**, 809-821.

Clark J. et al. (2011) **Quantification of PtdInsP3 molecular species in cells and tissues by mass spectrometry.** (<http://www.ncbi.nlm.nih.gov/pubmed/21278744>) *Nature Methods.* **8**, 267-72.

Suire S. et al. (2012) **GPCR activation of Ras and PI3Kγ in neutrophils depends on PLCβ2/β3 and the RasGEF RasGRP4.** (<http://www.ncbi.nlm.nih.gov/pubmed/22728827>) *EMBO J.* **31**, 3118-29.