

Proposal for a Masters degree internship (Projecto Tese de Mestrado)

**Supervisor:** Pedro Domingos (domingp@itqb.unl.pt)

**Starting date** – September 2010

**Duration** – 9 to 12 months

**Number of positions** - 1

**Summary**

The aim of our research is to understand the molecular mechanisms that regulate specification, differentiation and degeneration of the photoreceptors, the cells that sense light in the visual system, using *Drosophila* as our biological model. Our most recent work focuses on the protective role of the Unfolded Protein Response (UPR), a cellular signaling pathway activated by the presence of unfolded proteins in the Endoplasmic Reticulum (ER), against photoreceptor degeneration in a *Drosophila* model for Autosomal Dominant Retinitis Pigmentosa. We use the tools of modern genetics, cell biology and imaging to pursue the signaling mechanisms that regulate cell death/cell protection in our biological model system.

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**Publications:**

1) Rasheva, V.I. and **Domingos, P.M. (2009)** “Cellular responses to endoplasmic reticulum stress and apoptosis”, in press in **Apoptosis**. Review Article

2) **Domingos PM**, Steller H. (2007) Pathways regulating apoptosis during patterning and development. **Curr Opin Genet Dev**. Aug;17(4):294-9. Review Article.

3) Ryoo HD\*, **Domingos PM\***, Kang MJ, Steller H. (2007) Unfolded protein response in a *Drosophila* model for retinal degeneration. **EMBO J**. Jan 10;26(1):242-52. \*equal contribution