

RISE Talks Series

- Who?** Jane Peppard, RISE Visiting Scientist
- What?** Quantitative Cell Analysis: Application to Discovery of New Therapeutics
- When?** 12:00-1:00 on Thursday, October 9
- Where?** Hall of Sciences, Room 326

In the pharmaceutical industry, the plan for discovery of a new therapeutic small molecule often begins with a high-throughput screen of chemical compounds for their activity against a defined biological target, such as an enzyme or a cell receptor believed to be important in a disease process. After over 20 years of increasingly high-throughput screens, the actual success rate (new medicines) from such “target-based” screens has been less than stellar. This has led to the suggestion that more physiological systems, such as whole cells relevant to the disease of interest, might be much better early discovery tools than isolated or engineered proteins. I’ll describe some cell image-based (phenotypic) screens where quantitative cell feature analysis was used to measure the effects of compounds on cells, in projects aimed at the treatment of cancer (*phenotype*: autophagy, a cell survival mechanism), and multiple sclerosis (MS) (*phenotype*: differentiation of precursor cells towards oligodendrocytes, the cells that wrap neurites with insulation). Multi-stained pictures of cells will be shown to illustrate the value, and the art, of quantitative cell image analysis.