

Creating proteins with novel activities - *in vitro* and *in vivo*

Date: Wed, 9 Sept 2009
Time: 4pm
Venue: LT 22
Host: Prof Paul Matsudaira

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I will describe our work on repeat proteins, in particular on TPR proteins. I will discuss how we have used engineering and design approaches to characterize the structure, folding and stability of such proteins. Moreover, I will show that in comparison to the more familiar globular proteins, the modular nature of repeat proteins simplifies the analysis of their behavior, and enables us to predict their thermodynamic behavior in an unprecedented fashion.

After setting the stage, I will then move from structure and stability to function. I will discuss our approaches to create TPR modules with novel binding specificities. I will show how both rational design and library screening can be used synergistically to achieve such functional designs. Finally, I will discuss how such modules can be used in living cells, to inhibit or 'rewire' natural cellular pathways.

