New medicines are badly needed by society to combat poorly treated diseases and relieve suffering. Unfortunately the track record of the pharmaceutical industry in recent times has been less than satisfactory with rising costs and reduced productivity. Merger activity between companies is a significant contributing factor which is itself driven by the pressure from the looming problem of the ‘patent cliff’ where prescription drugs reach the end of their patent protection and become ‘generic’ with an accompanying dramatic drop in the price. In one sense this price drop is great for health authorities and patients but in from another point of view it is bad for patients in the long run since it results in less R+D investment and fewer new medicines coming through. Inevitably, drug discovery scientists must face up to the fact that the pharma industry has contracted with less R+D investment now available. Hence we need to be smarter about how drugs are discovered, making optimal use of available resources.

What can the medicinal chemist do to achieve greater efficiency? Medicinal chemists are at the heart of preclinical drug discovery from the identification of a biological target through to preclinical development and still involved during clinical development by ensuring consistent supplies of large amounts of drug product for acceptable cost and quality. In the preclinical phase medicinal chemists can use their understanding of molecular interactions, stereoelectronics, conformational and physiochemistry to focus synthetic efforts on the target compounds most likely to meet their objectives. For example, synthesizing compounds with high LogP may result in increases in potency in vitro but may not result in the required solubility or cell penetration. This presentation will discuss some recent reports in the literature regarding efficiency in drug discovery and molecular design and illustrate these topics with examples from S*BIO’s home-grown drug discovery efforts which have resulted in 4 new molecular entities (NCEs) entering the clinic and two other clinical candidates in preclinical development.

**CBC SEMINAR ANNOUNCEMENT**

Dr. Brian Dymock  
S*BIO Pte Ltd

**Creation of New Medicines: How The Medicinal Chemist Can Transform Lives with Good Science, Teamwork and Small Resources**

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**Date:** 18th July 2011 (Monday)  
**Time:** 11am – 12.30pm  
**Venue:** NTU SPMS CBC Building Level 2, Conference Room  
**Host:** Assoc. Professor Roderick W. Bates