

Poster: Maximising compound value by making good decisions:

Written by Matt Segall

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Matt presented this poster at MipTec in September 2010.

Abstract:

People are notoriously poor at making good decisions based on complex, uncertain data when there is a lot at stake. In drug discovery, poor decisions can mean wasting effort in synthesizing and testing compounds that fail or throwing out perfectly good compounds in error, reducing the opportunities to find new, valuable therapies. However, making good decisions in this context is challenging for several reasons: the need to balance multiple, often conflicting criteria for a successful drug; the abundance of data available on many properties; and the uncertainty in the relevance and accuracy of the available data, particularly in early discovery.

Psychological research has demonstrated that reproducible biases affecting human decision-making, known as cognitive biases, threaten objectivity and balance in individual and team decision-making. Drug discovery leaders receive much conflicting advice on possible ways to improve productivity and restore the rate of successful drug launches; however with help to overcome these psychological barriers, better decision-making can enhance R&D performance [1].

We will discuss four of the common biases that have serious implications for decision-making in drug discovery (summarised below). We will suggest approaches for overcoming these, such as strategies adapted from evidence-based medicine and computational tools that seek to guide the decision-making process, encouraging objective consideration of all of the available information and explicit consideration of the impact of uncertainty in drug discovery.

[1] A. Chadwick and M. Segall *Drug Discovery Today*, 2010, 15(13/14), pp. 561-569

A copy of this poster as available as a [PDF](#) .

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