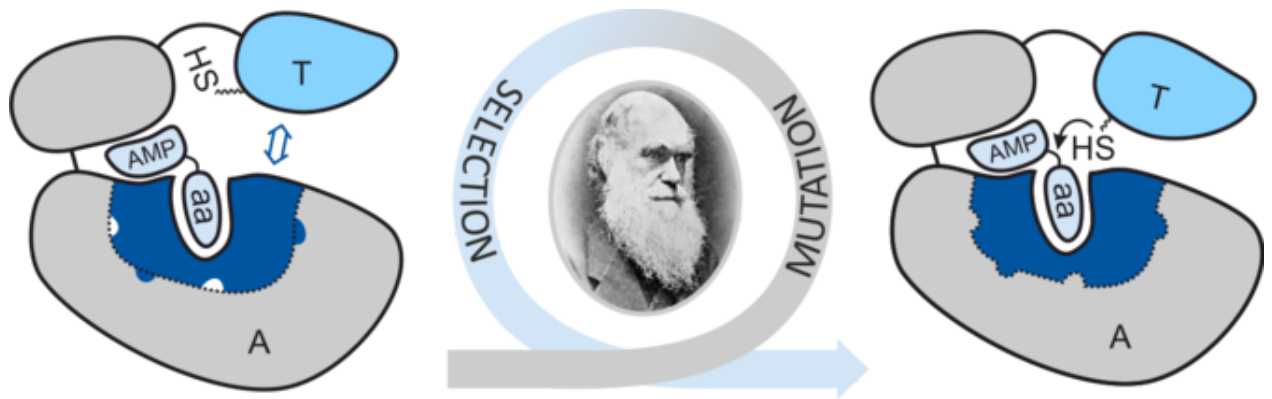# Directed Evolution

Evolutionary protocols can solve immensely complex problems, such as the redesign of an assembly line natural product synthetase, as long as few good solutions can be effortlessly distinguished from a large number of bad solutions. In a directed evolution experiment, incremental improvements accumulate in iterative rounds of mutagenesis and screening until a desired property has been achieved. The ability to screen large numbers of mutants is crucial for this approach. We explore innovative high throughput screens for NRPS activity based on lab-on-a-chip devices, cell surface display and fluorescence activated sorting as tools for directed evolution experiments.

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