S627
Symposium
Chemical genomics and new antibiotics

Presented is a personal perspective on identification, validation, and prioritization of potential antimicrobial drug targets in context of emerging chemical biology, genomics, and phenotypic screening strategies. Coupling the dual processes of antimicrobial small molecule screening and target identification in a whole cell context is essential to empirically annotate 'druggable' targets and advance early stage antimicrobial discovery. Annotating chemical-genetic and/or synthetic lethal genetic interactions also provides tremendous opportunities. The resulting genetic interaction networks provide a landscape to rationally predict and exploit drug synergy between cognate inhibitors. Importantly, synergistic combination agents provide an important and largely unexploited strategy to ‘repurpose’ existing chemical space within chemical libraries and simultaneously address issues of potency, spectrum, toxicity, and drug resistance in early stages of antimicrobial drug discovery.