Title of proposed program: Rescue of abandoned clinical candidates

Submitting Source: NIH

What is the major obstacle/challenge/opportunity that the Common Fund should address? What would the goals of the program be? Given the efficacy, toxicity, and business-related challenges of developing new therapeutics, over 90% of molecules that enter clinical testing are never approved for any indication. Many of these molecules are known to be safe by the companies who developed them, but since they have no clear efficacy they are abandoned, leading to enormous lost opportunity for patients suffering from diseases caused by dysfunction of targets/pathways affected by the candidate drugs. On May 3, 2012, NCATS/NIH announced a pilot program to identify new uses for existing unapproved therapies in collaboration with Pfizer, AstraZeneca, and Eli Lilly. The $20M committed to this program for FY13 will allow this novel paradigm of collaboration to be established, and by the time new CF programs are started in FY14 the success of the program (or lack thereof) will be known. Many more companies have expressed interest in this program, and the three founder companies have stated that they have many more molecules to contribute if the pilot phase is successful. Thus the program would benefit enormously from the intellectual and financial resources of all the NIH ICs. The goal of this CF program, therefore, would be to establish this "drug rescue" program as an expanded trans-NIH program with additional molecules and companies. In addition, it would expand the scope of the program to test all the molecules in diverse cellular or model organism screening assays from both the companies and academic researchers.

Why is a trans-NIH strategy needed to achieve these goals? What initiatives might form the strategic plan for this topic? Since this program will study molecules with a very broad array of mechanisms, and those mechanisms will frequently be operative in many different diseases relevant to many different ICs, a trans-NIH strategy is required for the program to meet its potential. The initiatives that would for the strategic plan would include (a) programs to test the abandoned molecules in diverse preclinical and clinical settings upon applications from investigators, and (b) a program to test the contributed compounds in cellular or model organism assays operative at the partner companies or in academic laboratories funded by NIH.

If a Common Fund program on this topic achieved its objectives, what would be the impact? This program would most importantly catalyze the rapid development of new therapeutics for diverse diseases by leveraging the enormous investment of biopharmaceutical companies in development of novel molecules that are currently stalled in development. Secondarily, by testing compounds with a broad array of novel mechanisms in diverse preclinical models and diseases, this program will enormously expand our knowledge of systems pharmacology and thus enable the development of new therapies.