

A conversation with Jeff Settleman on February 28, 2014

Participants

- Jeff Settleman — Senior Director, Discovery Oncology, Genentech
- Michael Fischbach — Assistant Professor, University of California, San Francisco (scientific advisor to GiveWell)
- Adam Marblestone — PhD Candidate, Harvard University (scientific advisor to GiveWell)
- Holden Karnofsky — Co-Founder, GiveWell

Note: These notes give an overview of the points made by Dr. Settleman in the conversation.

When potential financial returns are high enough, industry may take many approaches to late-stage research that are rarely found in academia. These can include:

- Use of specialized equipment for analyzing the structural biology of drugs interacting with targets. Interactions between small molecule atomic structures and proteins are frequently analyzed.
- ADME (absorption, distribution, metabolization, excretion) and toxicology analysis, which can require specialized expertise and equipment.
- Safety studies in animals of increasing size.
- Significant investment in studying the optimal formulation of a treatment.
- Significant investment in understanding the regulatory implications of different approaches.
- Mass molecule screening - 2 million or more molecules might be screened against a given target, compared to 10,000-100,000 in an academic setting.
- Industry may bring 20 or more chemists to work on a single project; academic settings would more commonly involve 1-2.

There have been some philanthropy-backed attempts to find under-valued drug assets by looking through industry libraries for compounds that might have high humanitarian value (though not high enough financial value to invest in). Novartis Institute for Tropical Diseases has done some work along these lines.

There is an enormous amount of investment in late-stage cancer research, and it's difficult to think of worthwhile approaches that aren't being tried.

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