The Open Drug Discovery Teams (ODDT) Mobile App For Drug Repurposing

Sean Ekins[1] and Alex M. Clark[2]
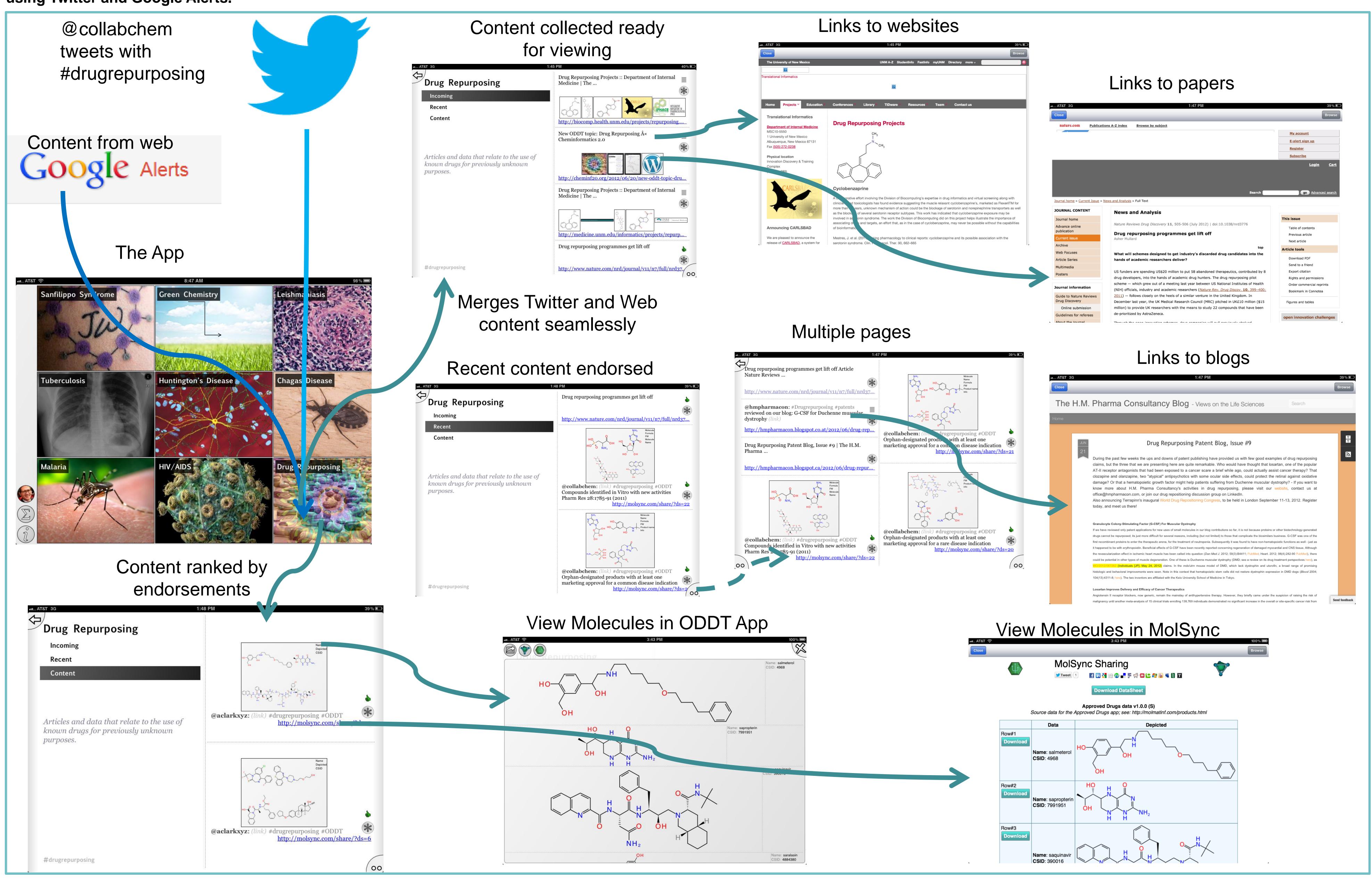
[1] **Collaborations in Chemistry**, 5616 Hilltop Needmore Road, Fuquay Varina, NC 27526, U.S.A., [2] **Molecular Materials Informatics**, 1900 St. Jacques #302, Montreal, Quebec, Canada H3J 2S1.

What is Drug Repurposing?

As productivity of the pharmaceutical industry continues to stagnate many have called attention to the merits of reconsidering new potential applications of drugs that are already approved, whether they be old or new. This is commonly termed drug repositioning, drug repurposing or finding "new uses for old drugs", and has been reviewed extensively in the context of finding uses for drugs applied to major diseases but is also of value for orphan or rare diseases. The benefits of repositioning include: the availability of chemical materials and previously generated data that can be used and presented to regulatory authorities and, as a result, the potential for a significantly more time- and cost-effective research and development effort than typically experienced when bringing a new drug to market.

To date multiple academic groups have screened 1,000-2,000 drugs against different targets or cell types relevant to rare, neglected and common diseases. Several of these studies attempt to find new molecules active against diseases like malaria and tuberculosis for which there are several approved drugs, yet there is still a need to find molecules with a better side effect profile or as a replacement for drugs for which resistance has been shown. These issues alone justify the continued search for drugs perhaps with novel mechanisms of action.

The Open Drug Discovery Teams (ODDT) project uses a free mobile app as user entry point **http://tinyurl.com/6l9qy4f**. The app has a magazine-like interface, and server-side infrastructure for hosting chemistry-related data as well as value added services. The project is open to participation from anyone and provides the ability for users to make annotations and assertions, thereby contributing to the collective value of the data to the engaged community. The infrastructure for the app is currently based upon the Twitter API and uses Google Alerts RSS feeds as a useful proof of concept for a real time source of publicly generated content.

We now highlight how ODDT can be used as an electronic notebook to share new scientific data on drug repurposing and engage this research community by following #drugrepurposing using Twitter and Google Alerts.

@collabchem tweets with #drugrepurposing

Content from web — Google Alerts

The App

Content ranked by endorsements

Content collected ready for viewing

Merges Twitter and Web content seamlessly

Recent content endorsed

Links to websites

Multiple pages

Links to papers

Links to blogs

View Molecules in ODDT App

View Molecules in MolSync