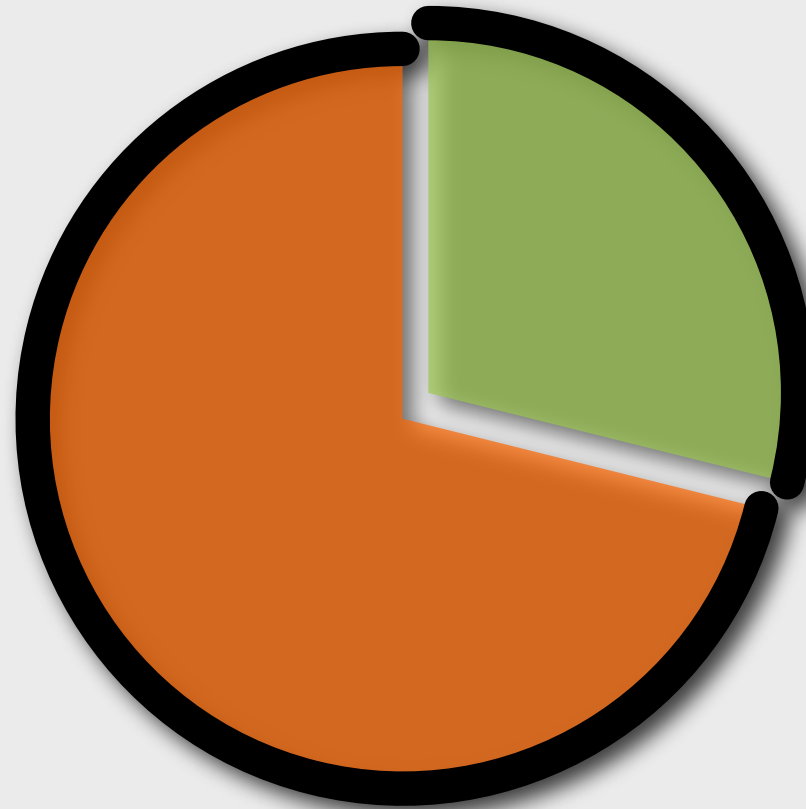


# Open Source for Biologists & Open Source Biology

[www.tropicaldisease.org](http://www.tropicaldisease.org)

[www.thesynapticleap.org](http://www.thesynapticleap.org)



**Marc A. Marti-Renom**

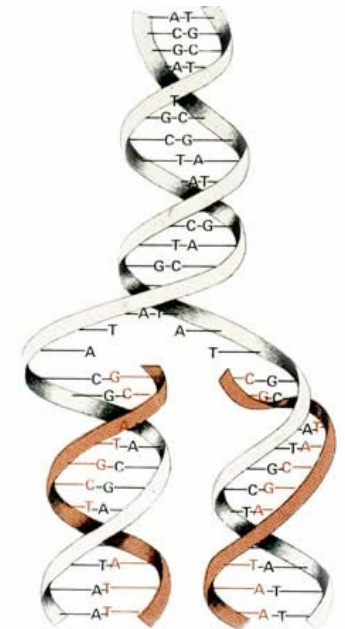
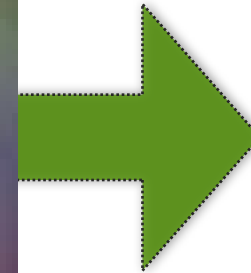
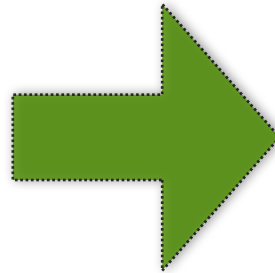
<http://bioinfo.cipf.es/squ/>

Structural Genomics Unit  
Bioinformatics Department

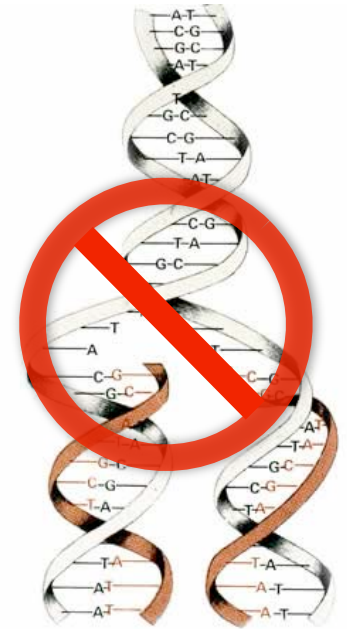
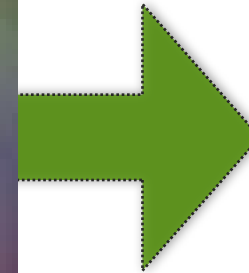
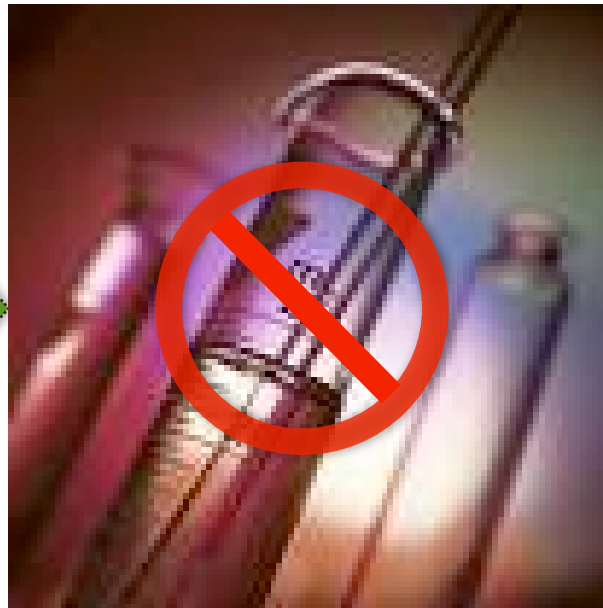
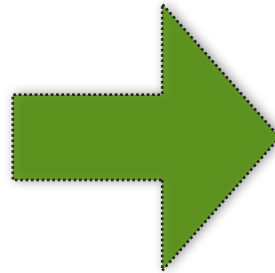
Prince Felipe Research Center (CIPF), Valencia, Spain



# I/O in Bio-OpenSource

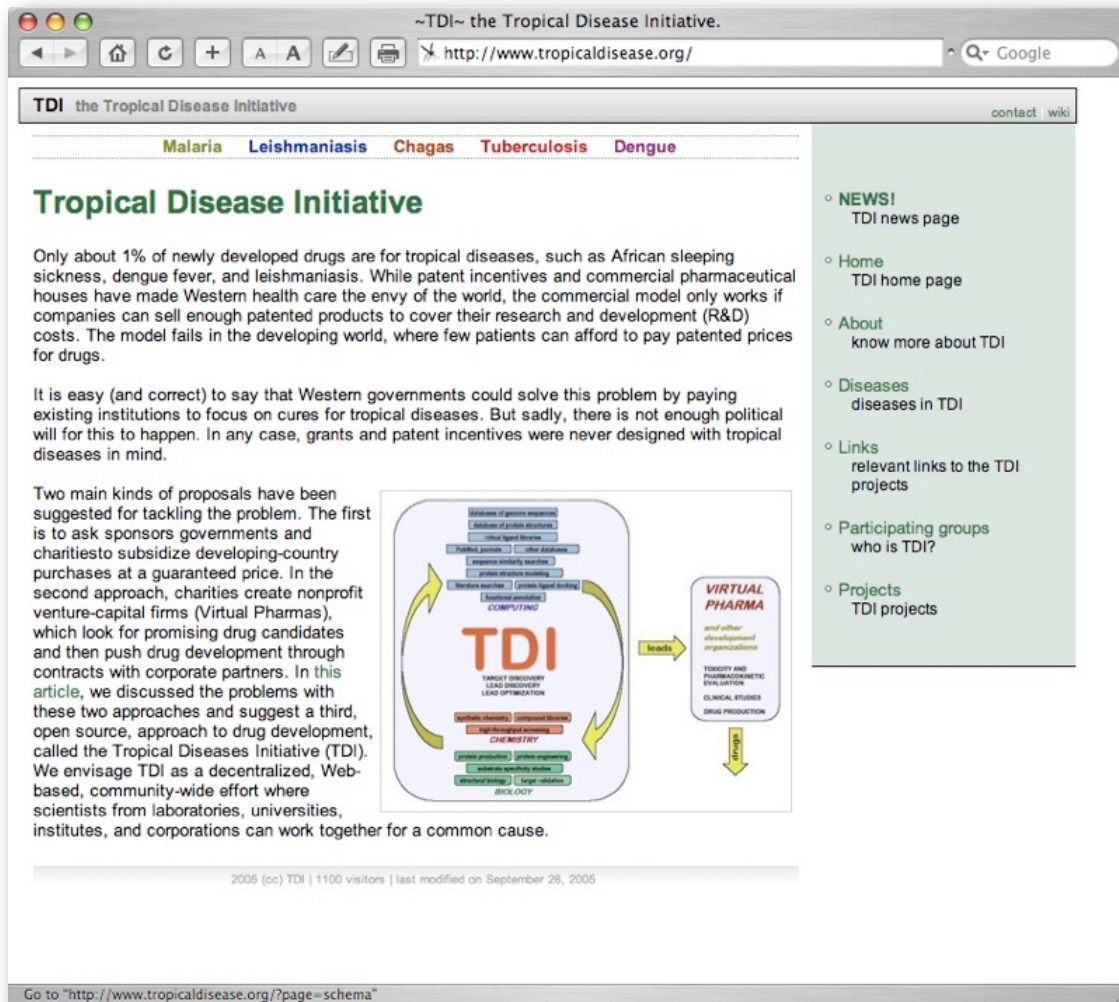


# I/O in Bio-OpenSource



# TDI web site

<http://www.tropicaldisease.org>

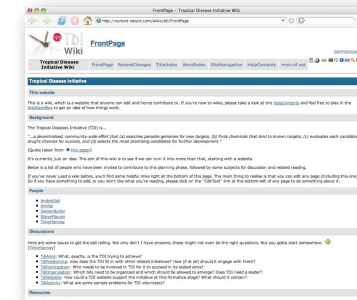


The screenshot shows the TDI website homepage. At the top, there's a navigation bar with links for Malaria, Leishmaniasis, Chagas, Tuberculosis, and Dengue. The main heading is "Tropical Disease Initiative". Below it, a paragraph explains the initiative's goal: "Only about 1% of newly developed drugs are for tropical diseases, such as African sleeping sickness, dengue fever, and leishmaniasis. While patent incentives and commercial pharmaceutical houses have made Western health care the envy of the world, the commercial model only works if companies can sell enough patented products to cover their research and development (R&D) costs. The model fails in the developing world, where few patients can afford to pay patented prices for drugs."

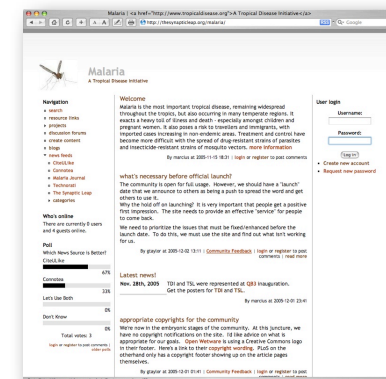
Two main kinds of proposals have been suggested for tackling the problem. The first is to ask sponsors governments and charities to subsidize developing-country purchases at a guaranteed price. In the second approach, charities create nonprofit venture-capital firms (Virtual Pharmas), which look for promising drug candidates and then push drug development through contracts with corporate partners. In this article, we discussed the problems with these two approaches and suggest a third, open source, approach to drug development, called the Tropical Diseases Initiative (TDI). We envisage TDI as a decentralized, Web-based, community-wide effort where scientists from laboratories, universities, institutes, and corporations can work together for a common cause.

A diagram illustrates the TDI workflow. It shows a cycle of "COMPUTING" (genomic, proteomic, metabolomic, transcriptomic, and clinical data) leading to "VIRAL PHARMA" (drug development) and then to "DRUG PRODUCTION". The cycle is supported by "BIOLOGY" (genetic, proteomic, metabolomic, transcriptomic, and clinical data) and "CHEMISTRY" (synthesis, screening, and optimization). The diagram is labeled "TDI" in the center.

At the bottom, it says "2005 (cc) TDI | 1100 visitors | last modified on September 26, 2005".



<http://nurture.nature.com/wikis/tidi/>



<http://www.thesynapticleap.org>



**The Synaptic Leap**  
Open Source Biomedical Research

<http://www.thesynapticleap.org>

14 Mar 2005

I think TDI is a unique and very interesting project for something for it...

16 Feb 2005

Hi

So, where are we?

10 Feb 2005

I still trust in open

Luca Brivio

Hello,

My name is Adam Huber and I am a medical student at UNSW in Sydney Australia.

I am interested in beginning research focused on tropical and infectious

disease for underserved populations. (A mission that seemingly matches TDI). I am,

lenecks are?

tial avenues to explore,

9 Mar 2005

I'm a programmer, not a bioinformatician, but I stumbled across your site and thought I'd say something to keep the list active :)

**GNU started with RMS. He gave us programming/administration tools to play with.**

**Linux started with Linus. He released an operating system for us to play with.**

**You need someone great in the field to release something for everyone to 'play with'. Then people start sending patches...**

I know this is chicken-egg, but someone needs to point this out, since I haven't seen this brought up in the papers or the website.

And you might consider merging into the bios.net effort mentioned already. Together, you just might reach the critical mass for things to take off. Consider this like when people jumped off the HURD project to come together and make linux work.

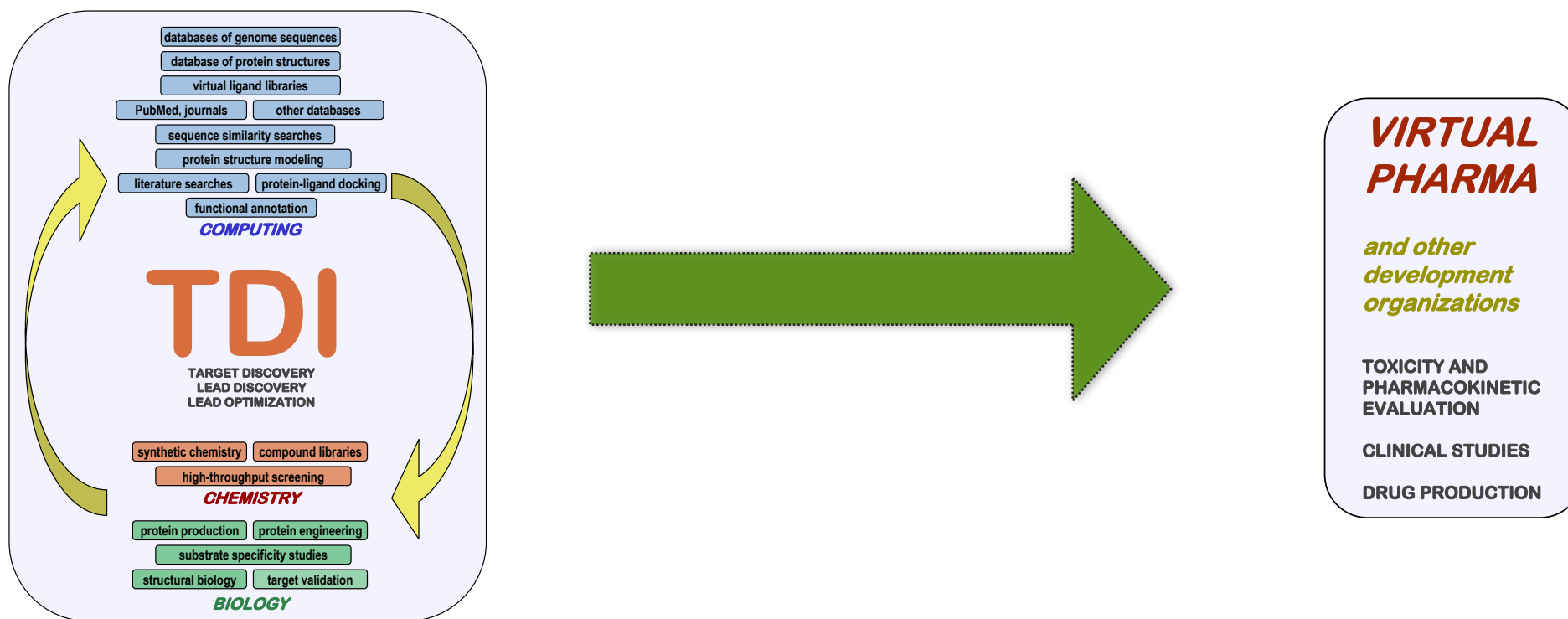
Daniel Amelang

s to

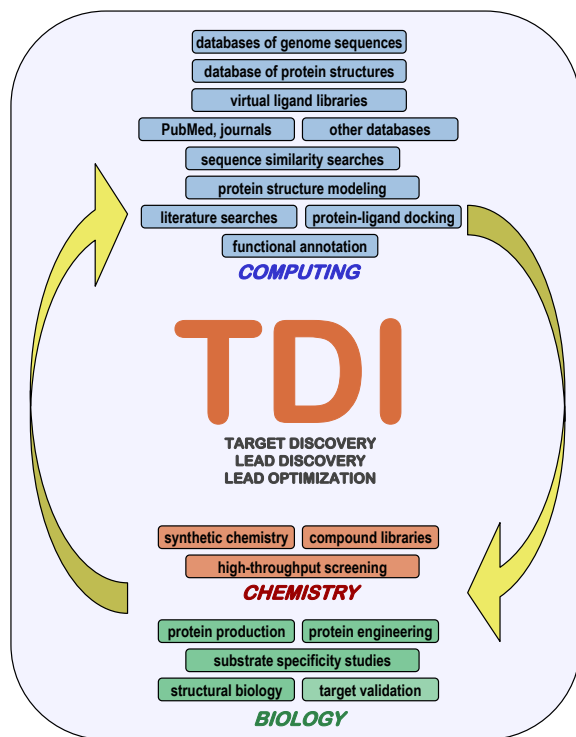
mistic that the

Stephen Mark Maurer

# Do we have the toolbox?



# Do we have the toolbox?



## ***VIRTUAL PHARMA***

*and other  
development  
organizations*

TOXICITY AND  
PHARMACOKINETIC  
EVALUATION

CLINICAL STUDIES

DRUG PRODUCTION

# The Synaptic Leap

<http://www.thesynapticleap.org>

Mission - **“To provide a network of online research communities that connect and enable open source biomedical research.”**

**generate ideas more quickly**

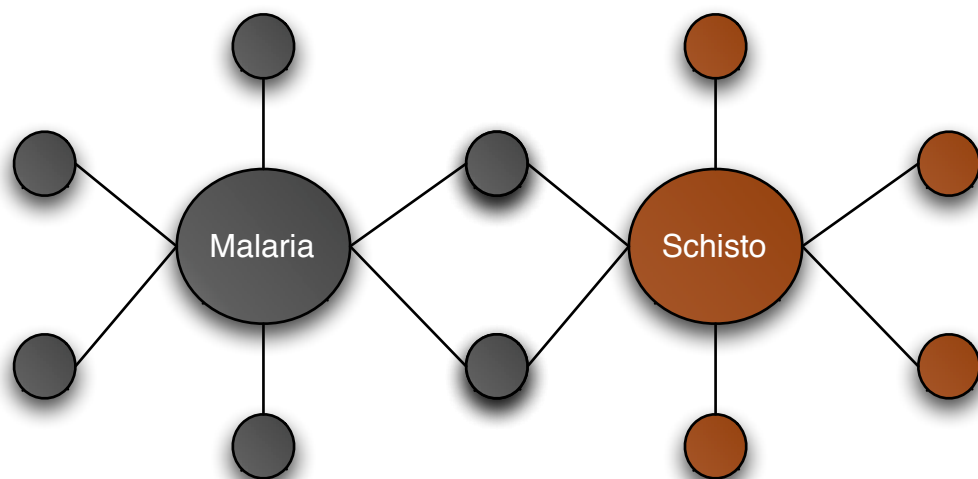
**reduce redundant work**

Thus ultimately will allow cures to be developed more quickly and effectively.



The screenshot shows the homepage of The Synaptic Leap, an open source biomedical research community. The header features the site's logo and name. The main content area is divided into several sections: a search bar, a navigation menu with links to recent posts, collaborative communities (malaria research, schisto research, general open research), create content, blogs, discussion forum, getting started, resources needed, and about; a welcome message from the Open Source Biomedical Research community; a roadmap section discussing the challenges of tropical diseases and the need for open source research; and a user login section. On the right side, there are sections for 'Who's online' (showing 0 users and 15 guests), 'Members' (with a link to 'my community profile'), and 'Recent comments' (listing comments from 'The Gates Announcement is Significant', 'scientist needed for Chikungunya community', and 'Thanks for the (R)-PZQ link'). The footer includes a Creative Commons license logo and the text 'SOME RIGHTS RESERVED'.

# Malaria & Schisto Communities



Useful Chemistry

XML

B

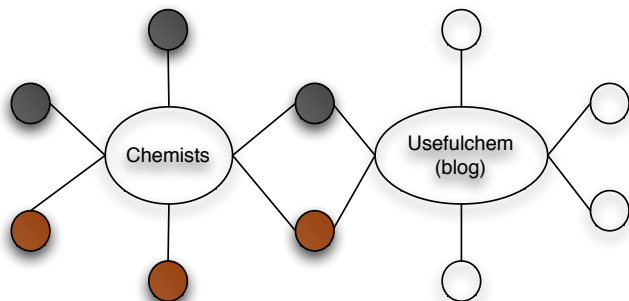
subscribe with Bloglines

UsefulChem molecules

UsefulChem wiki

UsefulChem Experiments

An attempt at open source science in chemistry. Post specific problems in chemistry that need to be solved. Post specific partial solutions to these problems. Or execute a suggested step. NOTE: ANYTHING POSTED HERE IS MADE PUBLIC IMMEDIATELY AND DONATED TO THE PUBLIC DOMAIN . ANYONE MAY USE, EVEN FOR COMMERCIAL PURPOSES, AS LONG AS ATTRIBUTION IS MADE TO THE RELEVANT POSTS IN THIS BLOG



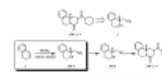
Home » collaborative communities » schisto research » current projects » Enantioselective Synthesis of Praziquantel

## Aza-Henry Route to PZQ

[view](#) [edit](#) [revisions](#) [track](#)

### Aza-Henry route to PZQ

We have designed a new synthesis of PZQ based on a catalytic, asymmetric aza-Henry reaction (Scheme 1). The key step is the generation of the new stereogenic centre in **4**. From here, the reduction to **5** should be facile with e.g. samarium iodide.<sup>1</sup> From **5**, the two steps to PZQ are known from the original report.<sup>2</sup>



### Aza-Henry route to PZQ

The catalytic, asymmetric Henry reaction has recently been the

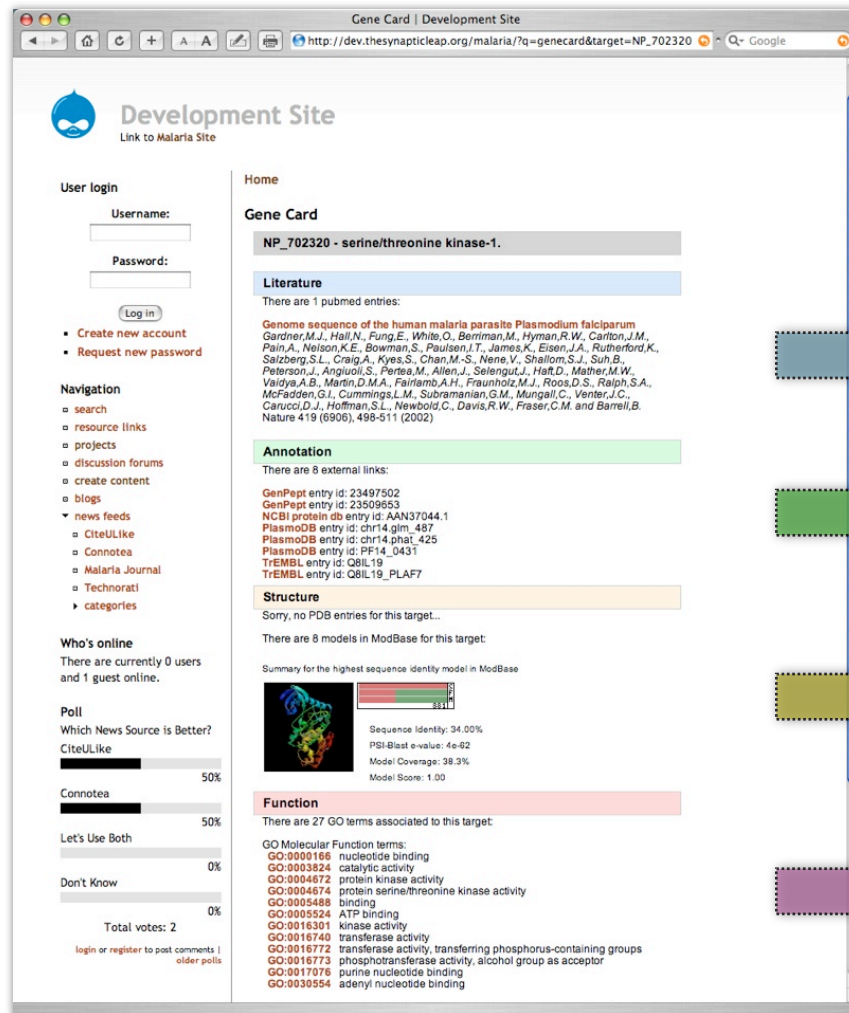
The catalytic, asymmetric Henry reaction has recently been the

### Aza-Henry route to PZQ



# Gene Board/Basket/Wiki

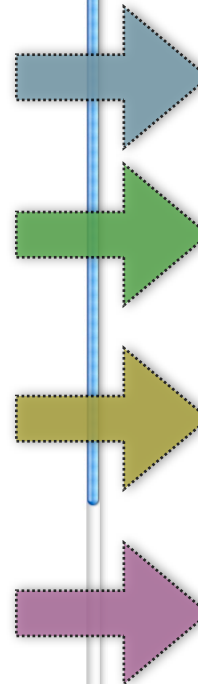
collecting and managing open gene information



As seen on:

YAHOO! flickr BETA

del.icio.us



Literature

Annotation

Structure

Function

# Acknowledgments

## Read more @

- PLoS Medicine, Dec. 2004. Vol 1(3) e56
- The Economist (June 10, 2004)



<http://crosstalks.vub.ac.be>

**“Put a description of your paper on a weblog, and something very different happens. People who are very far afield from your usual circle start thinking about the subject. They bring up interesting perspectives.”**

Paul Meyers (Nature, vol 438, p549)

<http://www.tropicaldisease.org>

<http://www.thesynapticleap.org>

## The Sali Lab

Andrej Sali  
Eswar Narayanan  
Ursula Pieper

## Tropical Disease Initiative

Stephen Maurer  
Arti Rai  
Andrej Sali  
Thomas Kepler  
Matt H. Todd

## The Synaptic Leap

Ginger Taylor  
Randy Akl  
Chris Heller  
Rich Manalang  
Ken Pugsley

## Wiki site at NPG

Timo Hannay  
Declan Butler