not quite a scientific talk ;-)

The Tropical Disease Initiative

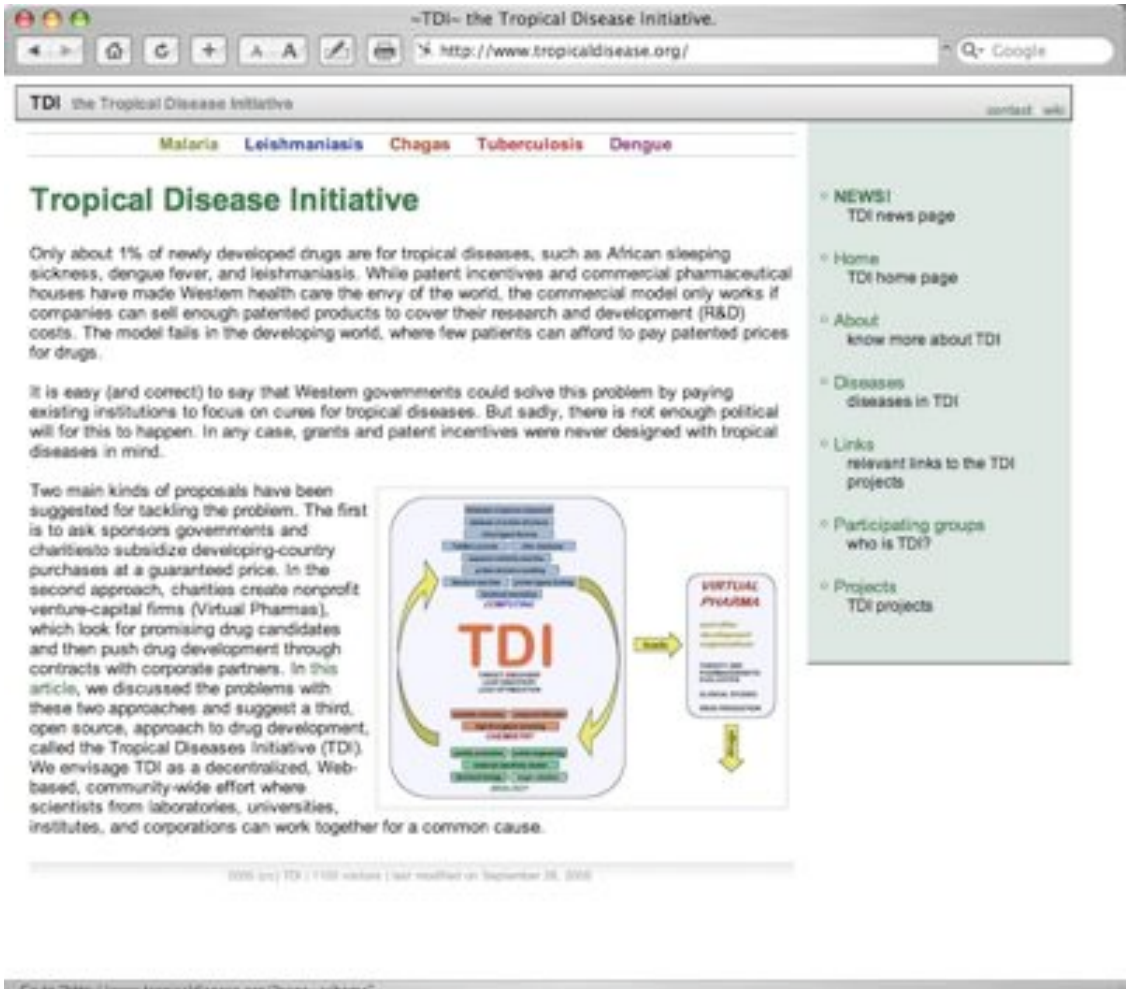
An open source approach to drug development

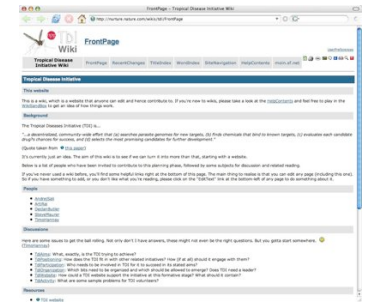
www.tropicaldisease.org
www.thesynapticleap.org/malaria/

Marc A. Marti-Renom
http://salilab.org/~marcius
Depts. of Biopharmaceutical Sciences and Pharmaceutical Chemistry
California Institute for Quantitative Biomedical Research
University of California at San Francisco

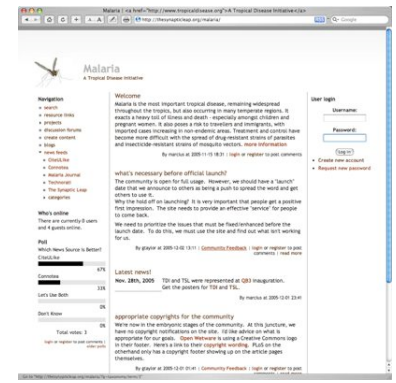
TDI web site

http://www.tropicaldisease.org/





http://nurture.nature.com/wikis/tdi/



http://www.thesynapticleap.org/malaria/

TheSynapticLeap.Org
non-profit status pending

Some time back...

14 Mar 2005

I think TDI is a unique and very interesting project. I would like so much to make something for it...

So, where are we going? What's happening? What can we do?

I still trust in open source drug discovery. :-))

Luca Brivio

t, if any, the bottlenecks are?
g ideas and potential avenues to explore,
n Action Plan!

disease for underserved popu
however, confused.
If someone will tell me wher
begin on, I'd be greatful.

Regards,
Jacob Lester

Thank you kindly,
Adam Huber

9 Mar 2005
I'm a programmer, not
something to keep the

GNU started with RM
Linux started with Li
You need someone g
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

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Stephen Mark Maurer

Some time back...

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So, where are we going? What's happening?

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Luca Brivio

16 Feb 2005

Hi,

It would be interesting to know what, if any, the bottlenecks are?
The Wiki site contains many interesting ideas and potential avenues to explore, but from what I can see it is **lacking an Action Plan!**

Regards,
Jacob Lester

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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, however, confused.
If someone will tell me where to sign up and give me some research topics to begin on, I'd be greatful.

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

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Daniel Amelang

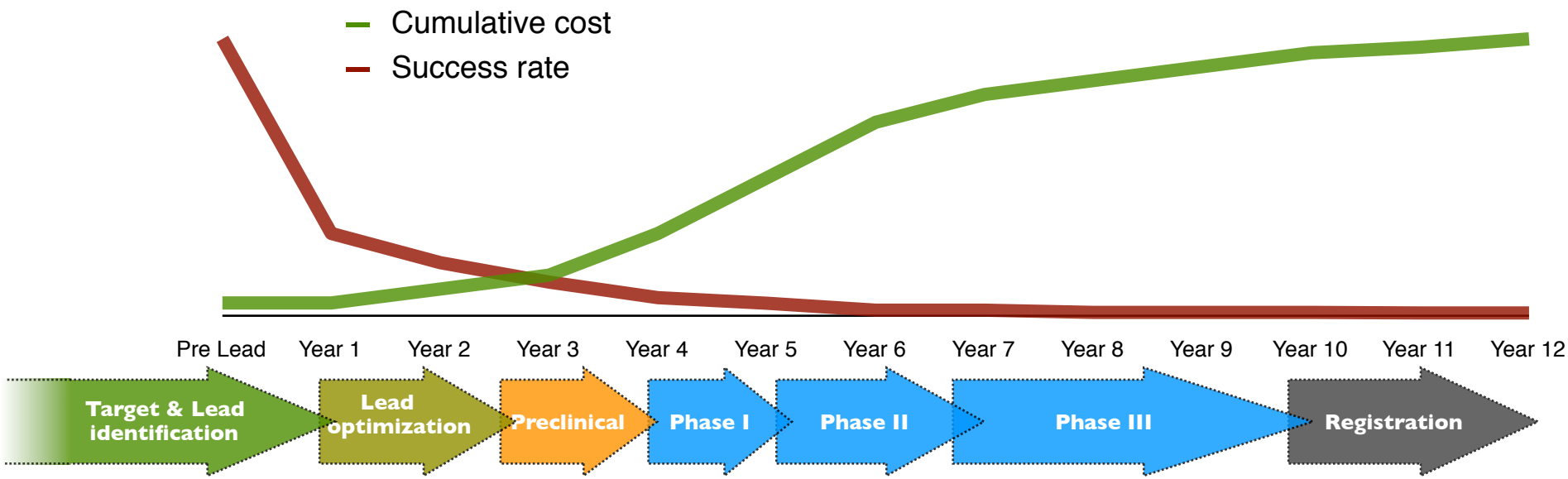
19 Jan 2005

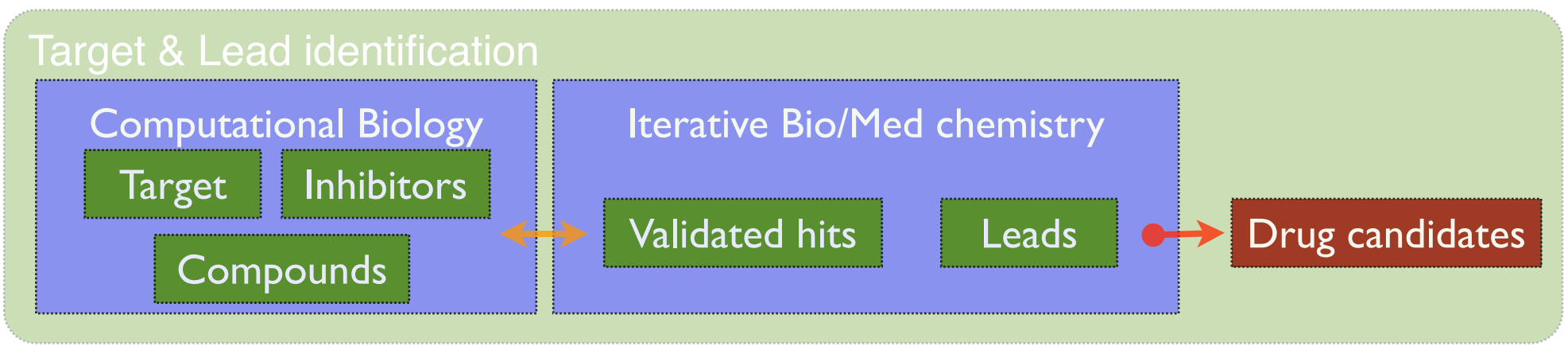
If we do the science well, I'm optimistic that the rest of TDI will fall into place.

Stephen Mark Maurer

Action plan @ Tropical Disease Initiative

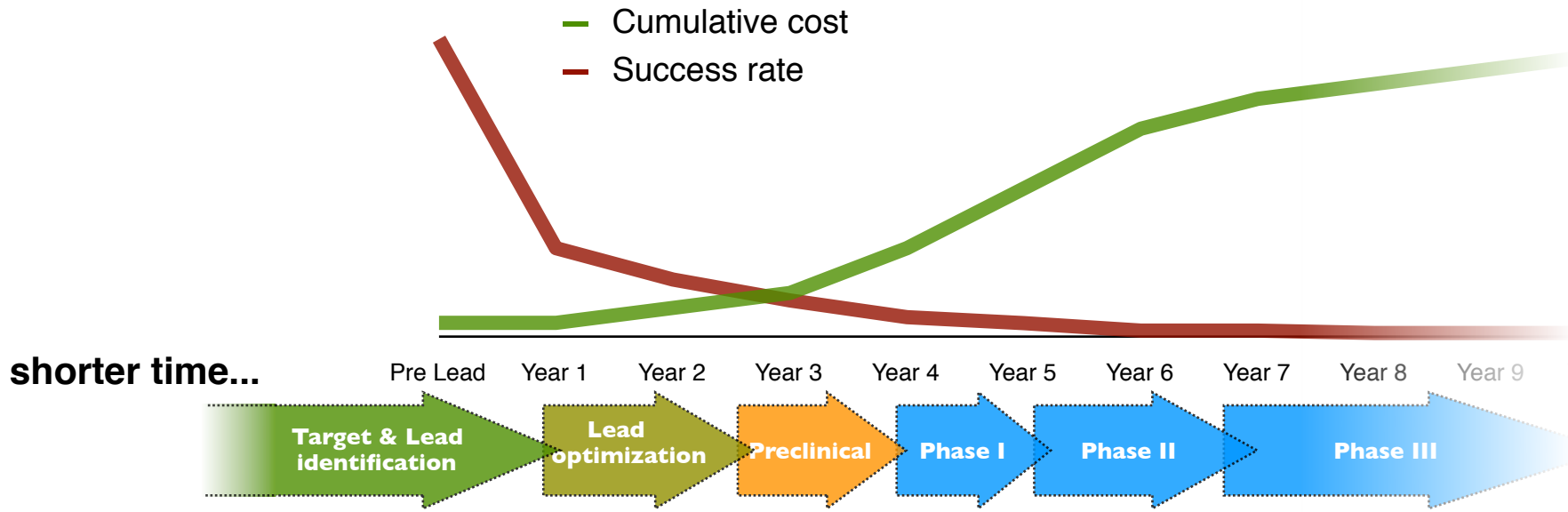
Drug Discovery pipeline





Adapted from: - Nwaka & Ridley. (2003) *Nature Reviews. Drug Discovery.* **2**:919
- Austin, Brady, Insel & collins. (2004) *Science*. **306**:1138

Drug Discovery pipeline



+ Completeness of genome projects (Malaria)
+ New and more complete biological databases
+ New software and computers (cheaper and faster)
+ Internet == more people == less cost

- Computational Biology **alone** is not enough
- TDI needs chemistry and biology! **(How?)**

TDI projects

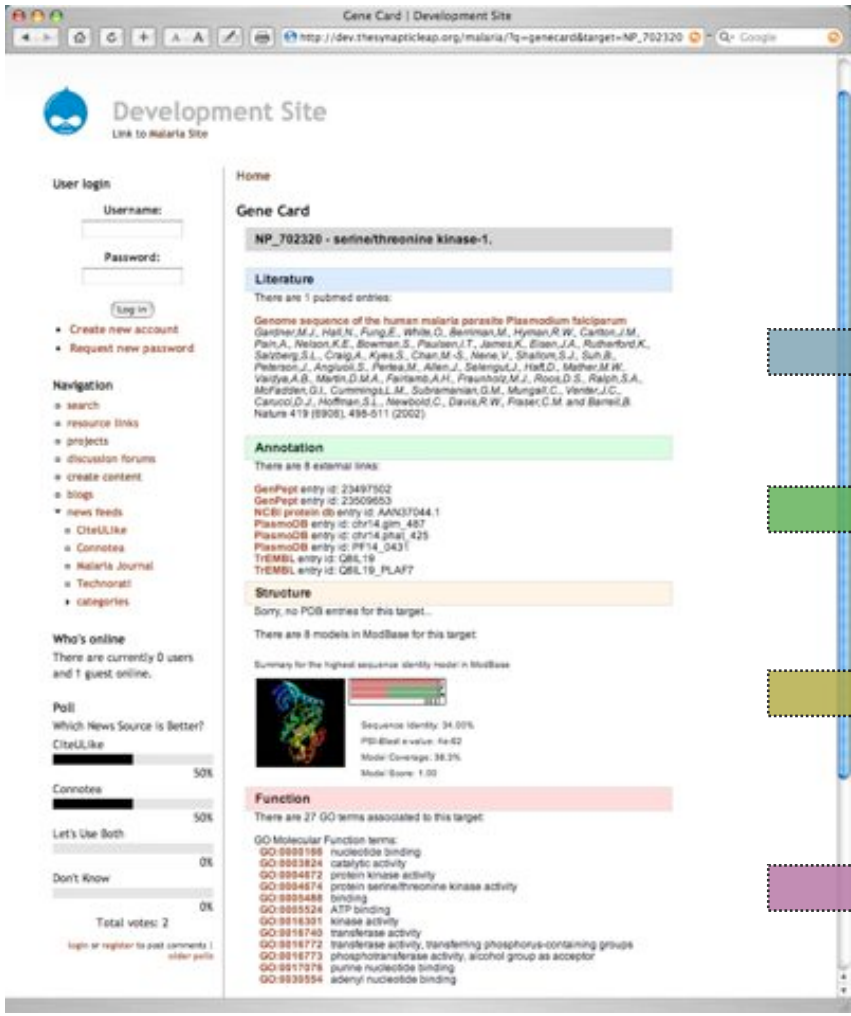
PROJECT I	**Gene Cards**
PROJECT II	**Structure Prediction**
PROJECT III	**Target Selection for Structural Genomics**
PROJECT IV	**Gene Annotation**
PROJECT V	**Gene Basket**

PROJECT I

Gene Cards

collecting gene information

As of September 2005, the Malaria genome had 5,270 ORFs.



- NCBI at http://www.ncbi.nlm.nih.gov/
- BioMart at http://www.biomart.org/
- ModBase at http://www.salilab.org/modbase

Literature

Annotation

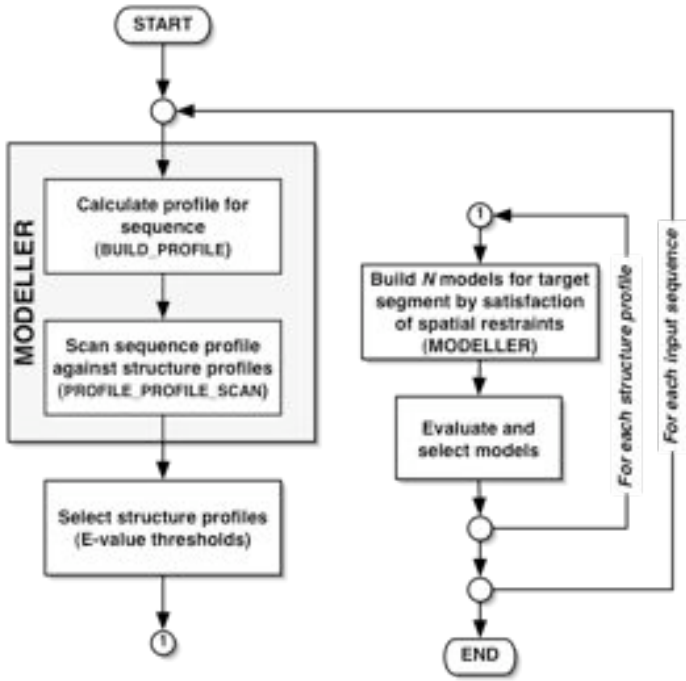
Structure

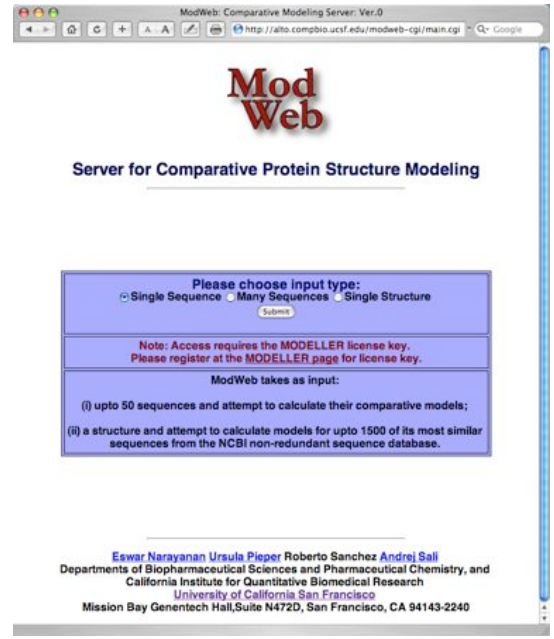
Function

PROJECT II

Protein Structure Modeling

structure my genes!





http://www.salilab.org/modweb/

Eswar et.al., (2003) Nucl.Acids.Res. 31(13)

Sequences	5,270
Modeled sequences	3,321
Models	10,743

PROJECT III

Target Selection

for structural genomics

The aim of the project is to generate a list of target proteins, which structure may help the advance of drug discovery for malaria.

We intend to do so by allowing the community of researchers to collectively determine such a priority list.

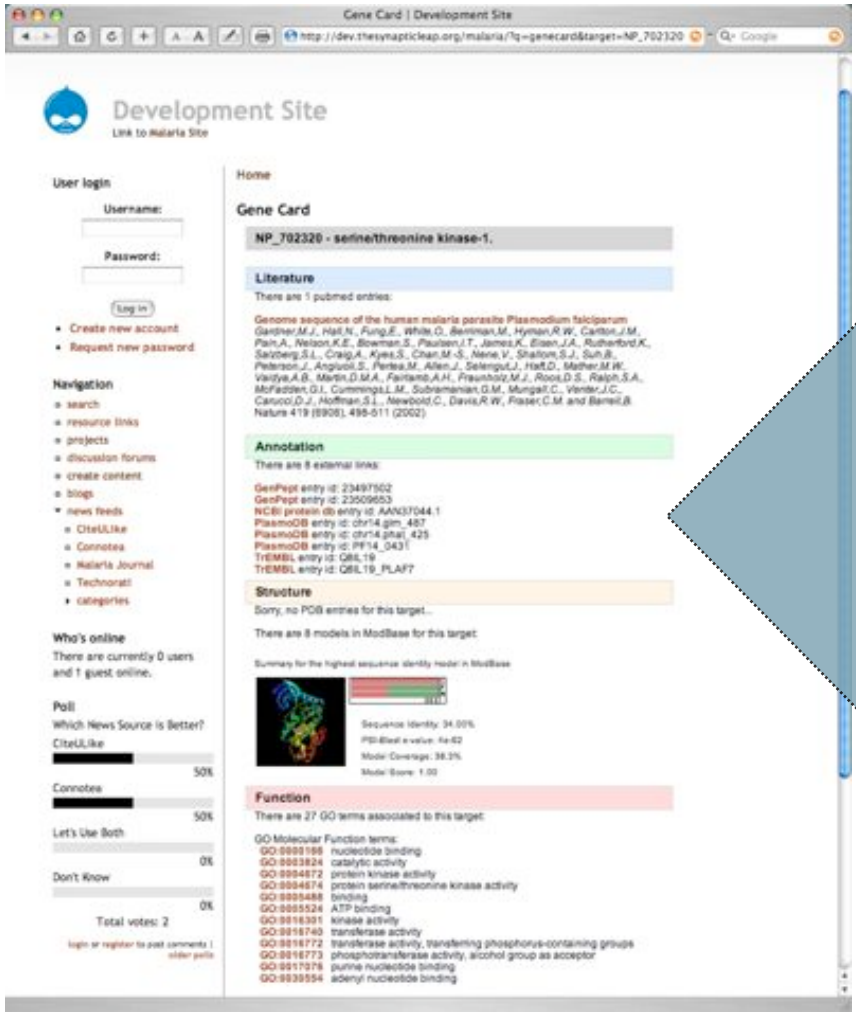
SGC

Dr. Raymond Hui
University of Toronto and SGC

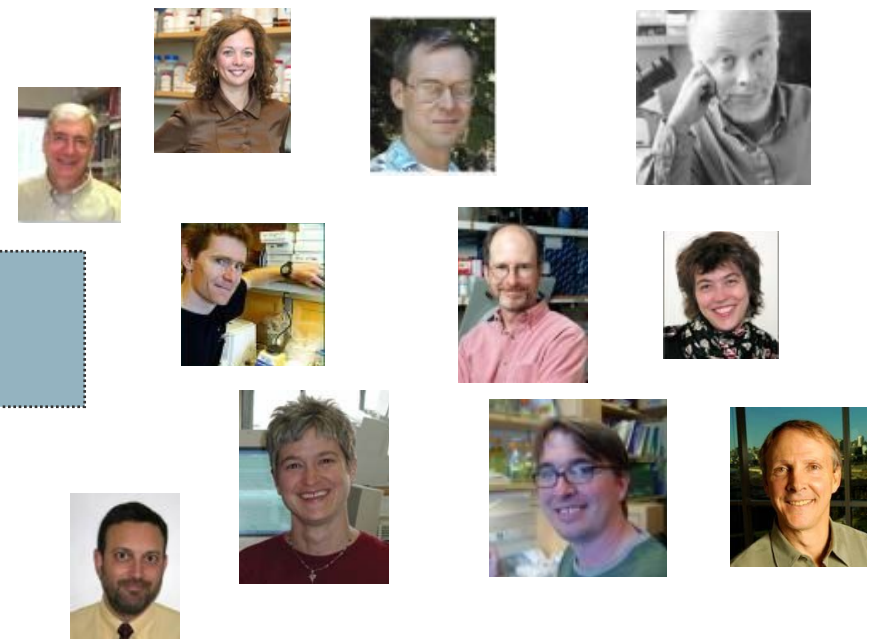
PROJECT IV

Target Annotation

what do you know about this gene?



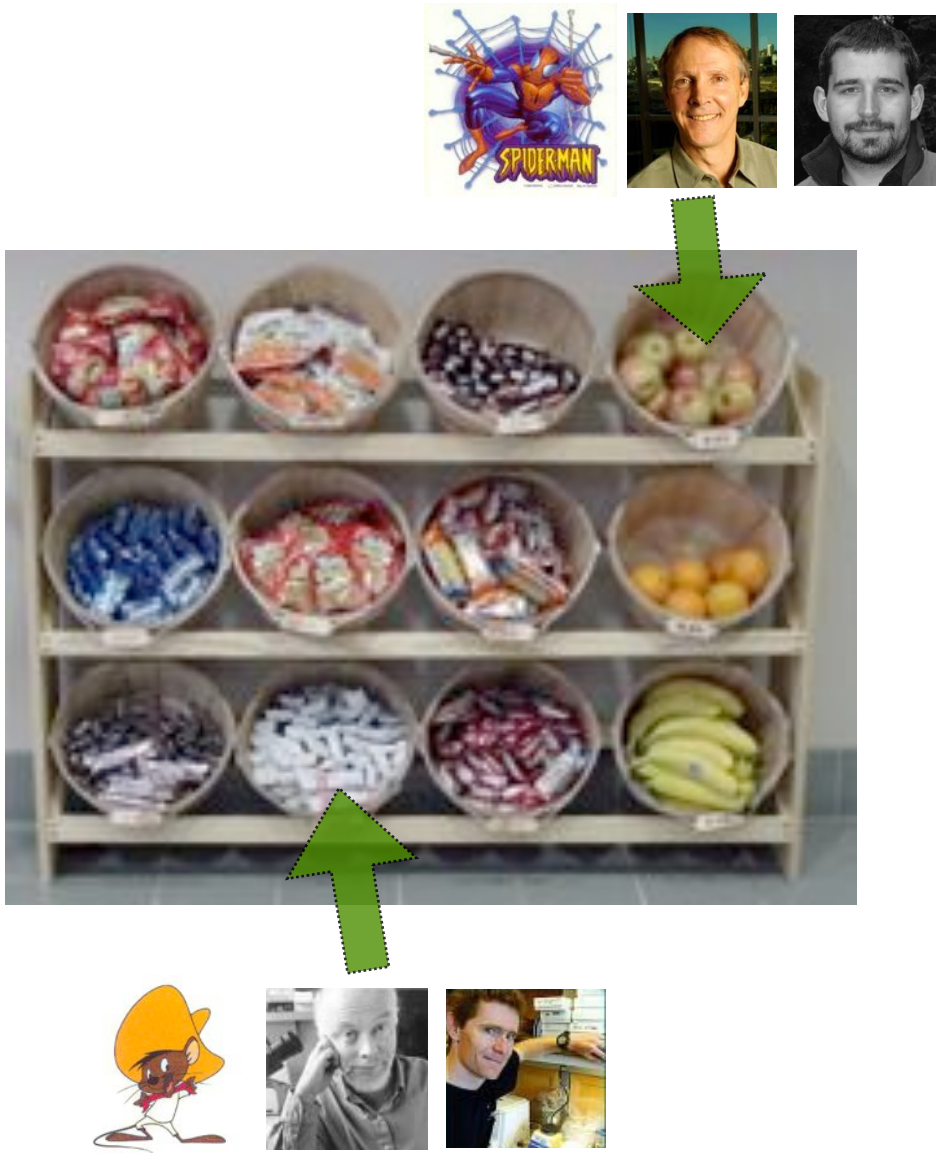
The aim of the project is to provide tools to registered users to manually annotate malaria genes.



PROJECT V

Gene Basket

add content to your genes... add genes to your content



TSL registered users will be able to save *gene cards* in their baskets and associate pieces of information to entries in the basket.

For example, a user may be browsing the literature at PubMed and find an interesting article, with just one click the system should be able to propose and association between the article and any of the genes in his/her basket.

As seen on: YAHOO! flickr BETA del.icio.us

PROJECT ...

YOURS!

send us suggestions

tdi@tropicaldisease.org

5%

95%

What is in it for the 95%?

you

- to be a part of **innovative** new approaches for research - "**the power of us**"

- to connect, work with other scientists interested in the same disease - **worldwide**...

- to access to **new** research tools

- **free** collaborative site

Acknowledgments

Read more @

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

"At its best, academia is a market of ideas. But many scientists are reluctant to embrace the latest web tools that would allow them to communicate their ideas in new ways."
Declan Butler (Nature, vol 438, p548)

"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/

The Sali Lab
Andrej Sali
Eswar Narayanan
Ursula Pieper

Tropical Disease Initiative
Stephen Maurer
Arti Rai
Andrej Sali
Thomas Kepler

The Synaptic Leap
Ginger Taylor
Randy Akl
Chris Heller
Rich Manalang
Ken Pugsley

Wiki site at NPG
Timo Hannay
Declan Butler