

## Pathbase: a database of mutant mouse pathology



## What is Pathbase?

- Database
- Publicly accessible ([www.pathbase.net](http://www.pathbase.net))
- Searchable through ontology's, CV's and free text annotations.
- Pathbase Consortium



## Introduction

- Pathology is a key discipline in this endeavour
- Purpose of the Pathbase: a community resource that codes, archives and distributes primary experimental data describing mutant mouse lesions
- MPATH



## The Database Infrastructure

- Meta-data and ontology's
- Implementation



## Meta-data and Ontology's

- The semantic meta-data for each Pathbase image consists of :
  1. Anatomical attributes : EMAGE project and Gene Expression Database (GXD)
  2. Other attributes are coded using ontology's (MPATH and others) and CV's



## Ontology's

- Publicly available at <http://obo.sourceforge.net>
- Are used for archiving the data and querying the database
- MPATH
- The ontology's are updated regularly and automatically from the source files



## Implementation

- Database layer
- Application layer (PHP)
- Transport layer
- Presentation layer



## Registration and access

- Registration is only required for submissions
- Registration and use are free to all users and are not required for searching the databases and retrieving images.



## Data Retrieval

- All those images have metadata that can be searched via the ontology's, CVs and free text.
- A request yields thumbnails of all appropriate images together with data



## Data Acquisition and Annotation

Data acquisition proceeds in two modes :

- The team actively request images
- Users may send or upload their own images



## Data Acquisition and Annotation

- the submitter must also send key associated data
- all records are subject to active curation and assessment
- users are also allowed to annotate images directly

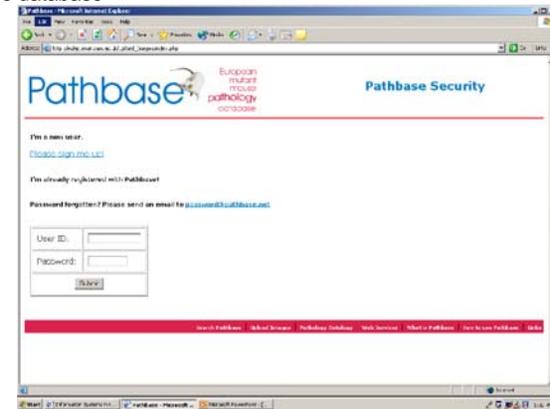


## Discussion

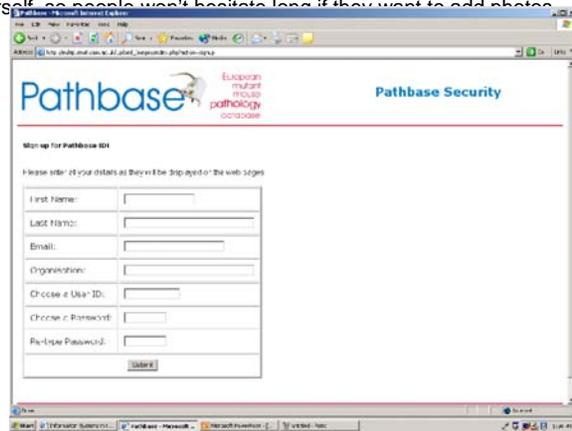
- Evolution of Biological Databases
- One notable future : MPATH
- Much debate concerning the best way of coding complete phenotype data – (MPheno; available on <http://obo.sourceforge.net>)

Now I will show you how the Pathbase works and how the database look likes.

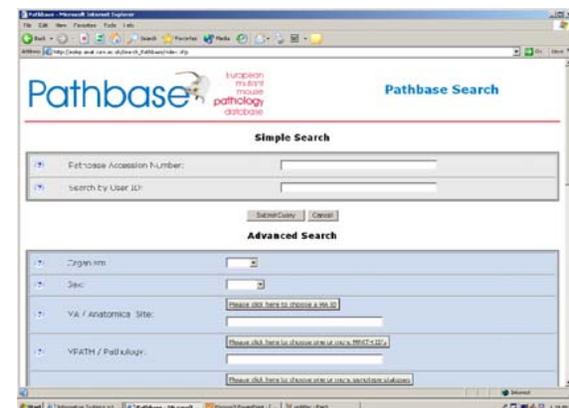
This is what the Log In Page looks like if a user wants to submit photos in the database



If you have to sign up, you just have to enter limited information about yourself, so people won't hesitate long if they want to add photos



Data retrieval : The user can choose between simple search and advanced search



Ad

VFATH / Pathology:  Please click here to choose one or more MGI IDs

Genotype Status:  Please click here to choose one or more genotype statuses

Genetic Manipulation:  Please click here to choose one or more genetic manipulations

Strain:

Species:

Basic number:  Please click here to go to the Basic website

MGI, no identifier:  Please click here to go to the MGI website

Sex:  Please click here to choose one or more sexes

Cell Type:  Please click here to choose one or more cell types

If the user clicks on the white bottom below (for choosing a pathology he wants to search for), he will enter the ontology MPATH. In this way it is easy for him to find the MPATH-id

This is the screen that he'll get

Search the ontology:  Submit Query

- Expand/collapse an entity pathologies as needed from below.
- Click on the +/- icons to expand the hierarchy.
- Click on the actual terms to transfer the ID of terms to the form in the main window.
- Mouse users are encouraged to beta test our advanced XML interface.
- If you don't like the way this page works, you can download the ontology in one page.

A request yields thumbnails of all appropriate images together with data. These thumbnails can be expanded and are downloadable

Pathbase Image PB-34 submitted by University of Cambridge on Sep 18 2001	
Sex:	Female
Gene:	
Strain:	C57BL
Organism:	Mouse
EMAP / Embryonic stage, tissue or post-natal age:	99998 - Adult
Genotype Status:	Wild-type
MPATH / Pathology:	MPATH 458 - normal
Genetic Manipulation:	None
MA / Anatomical Site:	MA 334 - caecum
Designated Allele Name:	
Experimental Manipulation:	
Description:	Normal histology of caecum

Magnification: x310  
Stain: H&E

If the user wants to upload a photo, he has to fill in some data. Through the use of different databases especially the MPATH this is made very easy for them a to fill in the pathology

Please fill in ALL mandatory fields!

Welcome! Please fill in the form below and click submit to proceed to the image file upload page.

**Mandatory Fields**

Organism:

Sex:

MA / Anatomical Site:  Please click here to choose a MA ID

MPATH / Pathology:  Please click here to choose one or more MPATH IDs

Genotype Status:  Please click here to choose one or more genotype statuses

Genetic Manipulation:  Please click here to choose one or more genetic manipulations

Strain:

Description:

