

# Easy Sample Labeling, Barcoding and Tracking System for the Academic Laboratory

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## PROBLEM

- As lab members come and go, labs accumulate thousands of legacy samples.
- Sample labeling is typically handled by each individual.
- Usually handwritten cryptic indications on tubes and a notebook, or a spreadsheet.
- Commercial solutions are prohibitively expensive and require expert administration.

## GOAL

- Facilitate this need with minimal cost and overhead.
- Enough functionality to meet basic needs.
- But simple enough that expert administration is not necessary.
- Preserve vital information for sample tracking and identification.
- Barcodes.

## SOLUTION

ColIOS (Collection Of Samples)

- A user-friendly, lightweight, web-based, RoR/PostgreSQL, Open-source application for barcoding and tracking biological samples.
- Easy to install.
- Easy to use.
- Easy to maintain.

## BASED ON

- Full-stack logic
- Convention over Configuration
- Don't Repeat Yourself
- Active record pattern
- Model-View-Controller pattern
- OmniAuth authentication protocol
- Basecamp strategy

**easy to use**



**Prepare the spreadsheet**  
(template with controlled vocabulary)



**Import the samples in ColIOS**



**Print the labels in mSPS**



**Fix your own label in mSPS**

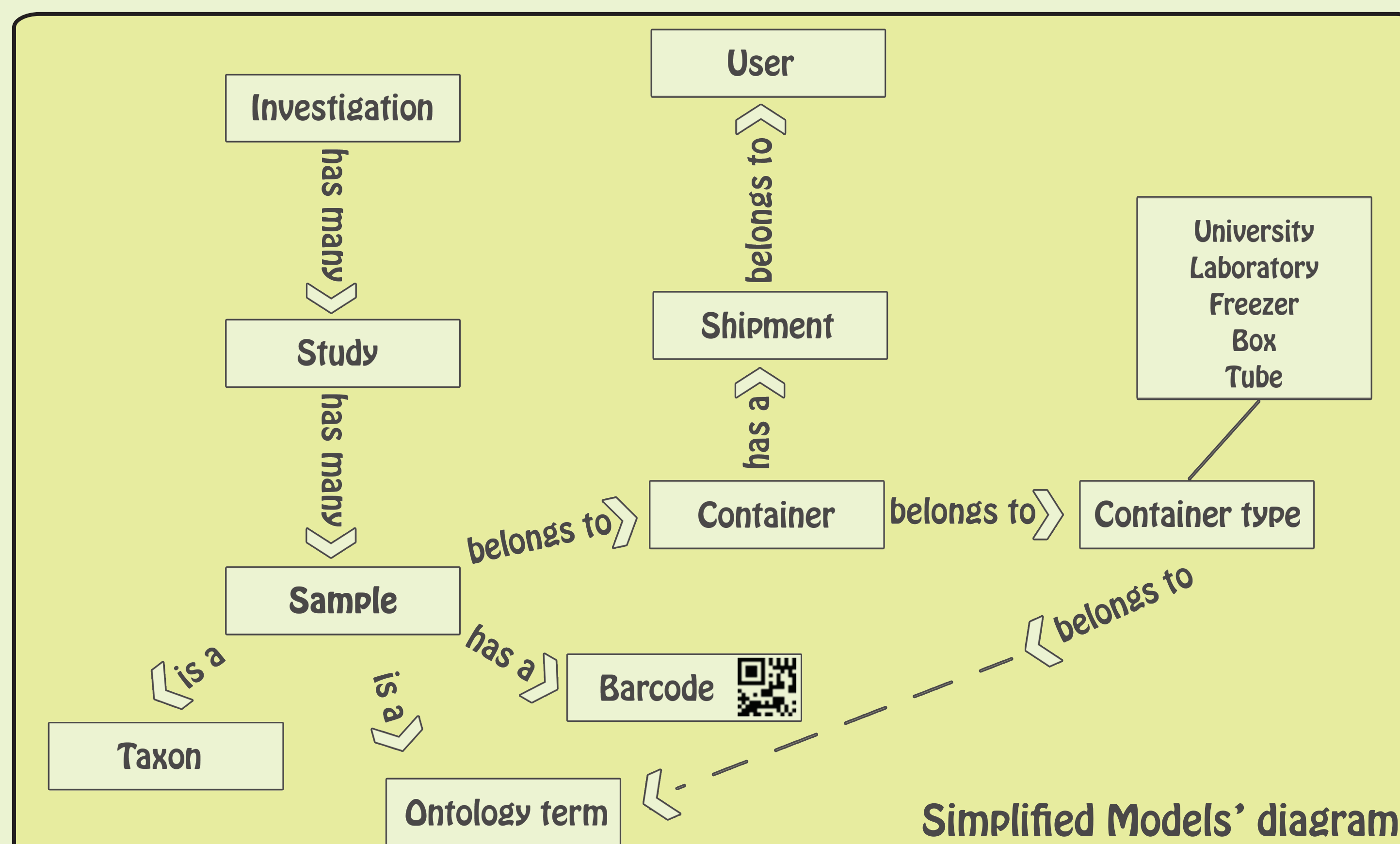


**Scan the barcode to view the whereabouts of the sample in ColIOS**



## Tracks Basic Experimental Information

- Taxon
- Strain/Race
- Genotype
- Gender
- Age
- Treatments
- Time of Collection
- Primary cell/cell line
- Tissue Type
- Biological material type



## Basic Functionality

- Import
- Edit
- Barcode/QRcode
- Track shipments
- Search
- Export samples' lists
- Print labels

## Useful Tips

Performed durability testing and hardware evaluation to determine the most cost effective and reliable labels and hardware.  
Contact us for unbiased recommendations.

Available under MIT license.  
ColIOS <https://github.com/dimitras/collos>  
mSPS <https://github.com/svitale/sps>