



# Orientation

Protégé Short Course  
October 9 - 11, 2017



- ❏ Goals
- ❏ Instructors
- ❏ Resources
- ❏ Logistics

☐ Goals

☐ Instructors

☐ Resources

☐ Logistics

# Developing ontologies

What are they?

How do I build them?

What are useful modeling patterns?

# Understanding OWL

What is OWL?

How do I use it?

What are the common pitfalls and modeling practices?

Understanding entailment and reasoning in OWL

# Using Protégé

How to use Protégé Desktop and WebProtégé?

By the end of this course you will become familiar with the user interfaces through hands-on work

# How to do “x” in Protégé?

Developing ontologies

Collaborating in Web-based environment

Querying

Importing data

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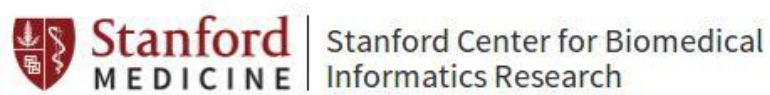




How old is Protégé?



# The Protégé project is 29 years old!



About Us ▾ News Education ▾ People ▾ Research ▾ Service ▾

Mark Musen, MD, PhD

Director

The banner features a network diagram with various nodes and labels. The labels include "Gene\_Product\_Find", "Pathway\_Find", "Abnormal\_Cell\_Find", "Disease\_Registry\_Regimen\_Find", and "Regimen\_Find". The diagram consists of a complex web of lines connecting these nodes, with some nodes highlighted in green ovals. On the right side of the banner is a portrait of Mark Musen, MD, PhD, a man with glasses and a light blue shirt, smiling.

## OUR TEAM



*Rafael Gonçalves, PhD*

Research Staff



*Josef Hardi, MSc*

Research Staff



*Matthew Horridge, PhD*

Research Staff



*Mark Musen, MD, PhD*

Professor, Division Head



*Csongor Nyulas, MSc*

Research Staff



*Samson Tu, MSc*

Senior Research Scientist



*Tania Tudorache, PhD*

Senior Research Scientist

# Matthew Horridge

- ❑ Senior Software Developer
- ❑ Lead developer for Protégé and WebProtégé
- ❑ Developer of the OWL-API
- ❑ Explanation of entailments in ontologies
- ❑ Justification based metrics for ontologies
- ❑ OWL and Description Logic
- ❑ Knowledge representation and reasoning



# Rafael Gonçalves

- ❑ Software Developer
- ❑ Developer of ecco (ontology diff tool)
- ❑ Ontology diffing, extension and modularity
- ❑ Description logics and automated reasoning
- ❑ Reasoner performance-hot spot finding
- ❑ Protégé 5 client-server
- ❑ Organizer of ORE competitions



# Samson Tu

- ❑ Senior Research Scientist
- ❑ Modeling of biomedical ontologies and clinical guidelines and protocols
- ❑ Knowledge representation and medical terminologies
- ❑ Development of knowledge-based decision support systems
- ❑ Protocol-based health care



# Csongor Nyulas

- ❑ Senior Software Developer
- ❑ Author of DataMaster (import plugin for Protégé)
- ❑ WebProtégé and iCAT
- ❑ Involved in the ICD-11 development
- ❑ Various ontology-driven projects (SDIDS, FACSIMILE, Biositemaps, GLINDA, BioSTORM)





# Tania Tudorache

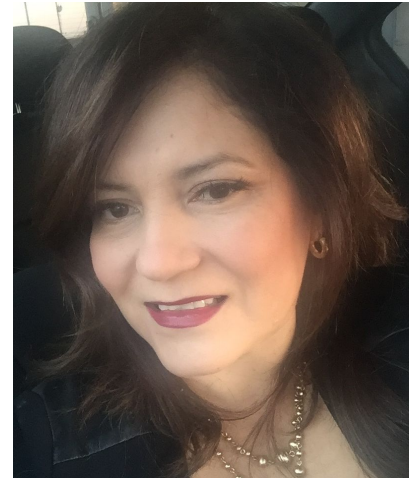
- ❑ Senior Research Scientist
- ❑ Collaborative ontology development
- ❑ Knowledge acquisition
- ❑ Applied ontologies
- ❑ Coordinate development of ICD-11 authoring platform (iCAT)





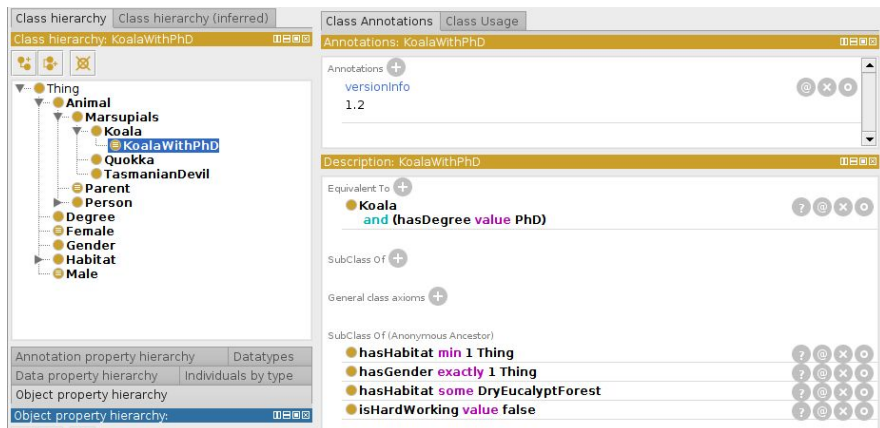
# Natasha Haulman and Marta Vitale-Soto

- ❑ Administrative coordinators of the short course
- ❑ Assist with logistics and organization of the course

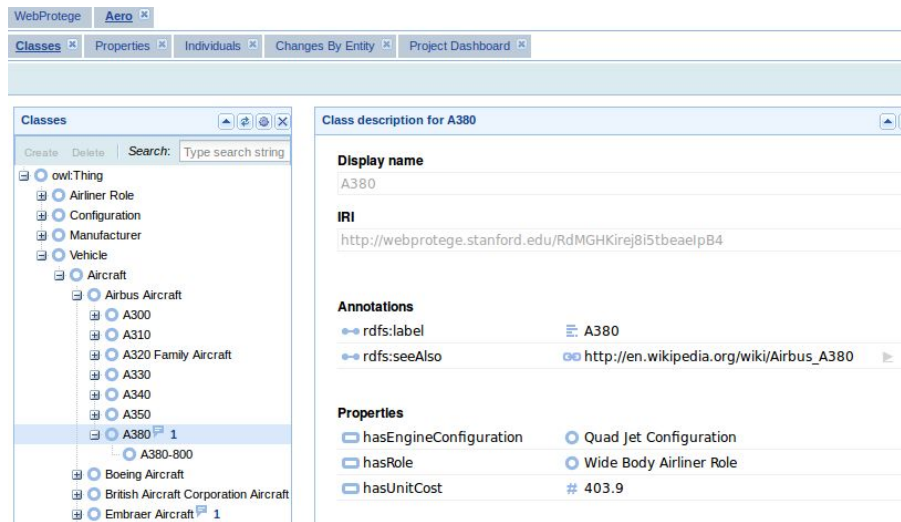


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# Protégé Desktop



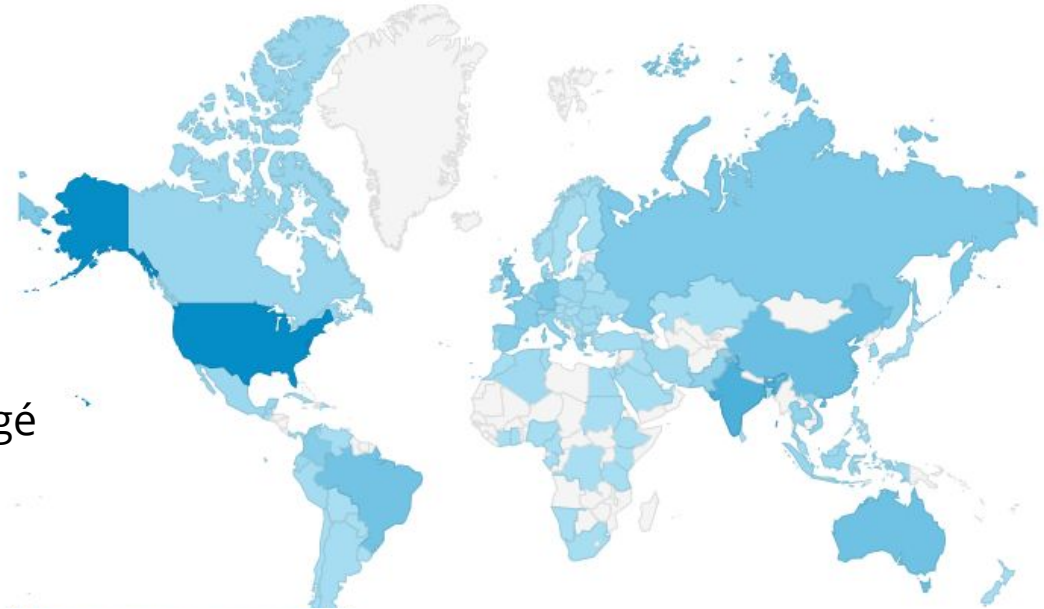
# WebProtégé



Free, open source ontology editors

# Protégé community

- ❑ Over 325,000 registered users
- ❑ Over 23,000 mailing list subscribers
- ❑ Academia, industry, government
- ❑ Over 40,000 downloads of Protégé 5.0.0 (May, 2016); 80,000 downloads of Protégé last year
- ❑ 3,500 downloads of WebProtégé latest release. 27,000+ projects on [webprotege.stanford.edu](http://webprotege.stanford.edu)



# Who is using Protégé?

- ❑ World Health Organization (WHO) – ICD-11
- ❑ National Cancer Institute (NCI) – NCI Thesaurus
- ❑ Oracle
- ❑ Object Mgmt. Group & Enterprise Data Mgmt. Council - FIBO
- ❑ The Open Biological and Biomedical Ontologies (OBO Foundry)
- ❑ Foundational Model of Anatomy (FMA)

# Protégé Website

URL: <http://protege.stanford.edu>

- ❑ Download new versions of Protégé
- ❑ Subscribe to mailing lists
- ❑ Learn about support options
- ❑ Get links to Protégé wiki, Facebook, and Twitter

# Protégé Wiki

URL: <http://protegewiki.stanford.edu>

- ❑ WebProtégé user documentation
- ❑ Protégé Desktop user documentation
- ❑ Developer documentation
- ❑ Plug-in and ontology libraries

# MAILING LISTS

*Get free support for all of your Protégé questions via our mailing lists. The lists are actively monitored by Stanford's Protégé team, as well as many experienced Protégé users from the community at large.*

Click the Subscribe button next to the list you wish to join. Please note that you must be subscribed to a list before you can post messages.

## ***Protégé User Support***

User support for all versions of [WebProtégé](#) and [Protégé Desktop](#).

**SUBSCRIBE**

[ARCHIVE »](#)

## ***Protégé Developer Support***

Developer support for all versions of [WebProtégé](#) and [Protégé Desktop](#).

**SUBSCRIBE**

[ARCHIVE »](#)

## ***Protégé Announcements***

Low traffic, announcement-only list for new releases, availability of short courses, and information regarding Protégé Conferences.

**SUBSCRIBE**

[ARCHIVE »](#)



# GitHub

All software (Protégé, WebProtégé, plugins, libraries, etc.) are on GitHub

<https://github.com/protegeproject>

Protégé: <https://github.com/protegeproject/protege>

WebProtégé: <https://github.com/protegeproject/webprotege>

Make feature requests and bug reports on the GitHub issue trackers

# Social media

[Facebook](#) (Protege Project)

[Twitter](#) (@protegeproject)

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# Resources page

All resources used in the course are available online:

<http://tinyurl.com/posc201710>

Slides, files, exercises, etc.

# Protégé installation

- ❑ We will use Protégé 5.2.0
- ❑ Needs to be installed on your laptop by Monday lunch time
- ❑ Ask for installation help during the breaks

# Course Schedule

Day 1:

- Ontology 101
- Introduction to Protégé
- OWL: Language, reasoning, querying

Day 2:

- OWL: Language, reasoning, querying

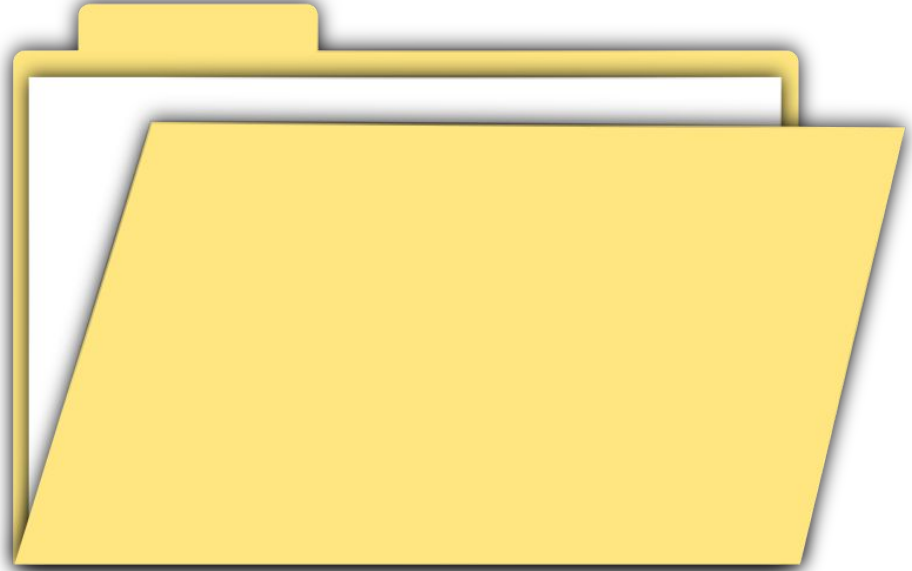
Day 3:

- SPARQL
- Importing data
- Collaborative development, WebProtégé

# The Yellow Folder

Materials used throughout the short course:

- Cheat sheet
- Dinner directions
- OWL product descriptions
- Lab exercise description



# Dinner on Monday evening

## MacArthur Park

27 University Ave,  
Palo Alto, CA 94301

(650) 321-9990

Dinner starts at **7 PM**

Organize your own  
transportation to and  
from the restaurant

Navigation app interface showing the route from 1070 Arastradero Rd, Palo Alto, CA 94301 to MacArthur Park, 27 University Ave, Palo Alto, CA 94301. The app displays the arrival time of 7:00 PM on Monday, Oct 9.

We don't have the most recent timetables for this area.

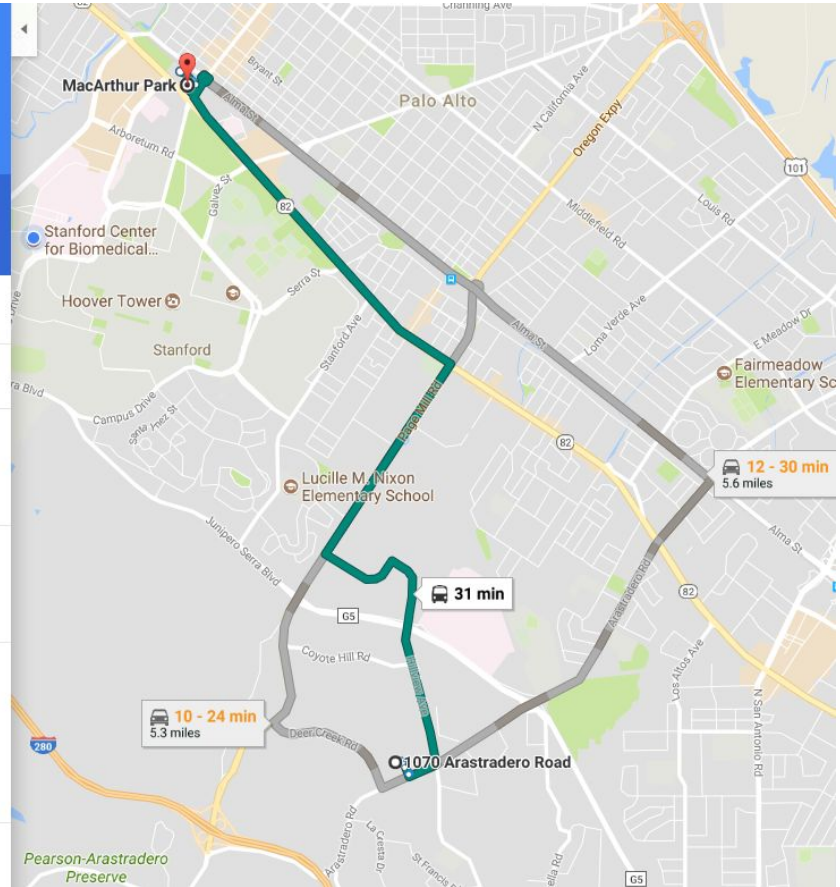
[Send directions to your phone](#)

**via Page Mill Rd and Alma St** typically 10 - 24 min  
Leave around 6:36 PM  
5.3 miles

**via Arastradero Rd and Alma St** typically 12 - 30 min  
Leave around 6:30 PM  
5.6 miles

**6:27 PM (Monday)–6:58 PM** 31 min  
6:29 PM from 1070 Arastradero Side  
Free 3 min  
[DETAILS](#)

[SCHEDULE EXPLORER](#)





# Short surveys every day







- ❑ Please fill out the surveys at the end of each day
- ❑ The surveys are short and anonymous
- ❑ We'll have a prize drawing each day
- ❑ Winners get a \$25 Amazon gift card :)



Please feel free to give us feedback in person, as well!

# Schedule for today

**Monday, October 9**

8:30-9:00am	Continental breakfast
9:00-9:45am	Orientation, course & participant introductions
9:45-10:45am	 Ontology 101: The basics of developing ontologies
10:45-11:00am	Break
11:00-12:30pm	 Ontology 101: The basics of developing ontologies cont.
12:30-1:15pm	Lunch
1:15-1:45pm	 Introduction to Protege
1:45-2:45pm	 OWL: Language, reasoning, querying
2:45-3:00pm	Break
3:00-4:15pm	 OWL: Language, reasoning, querying cont.
4:15-4:30pm	Break
4:30-5:30pm	 Lab: Modeling exercise
7:00-9:00pm	Short course dinner @ MacArthur Park 27 University Ave. Palo Alto, CA 94301