



# Welcome to HARMONY 2018

Local organisers:

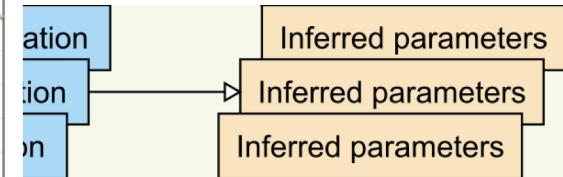
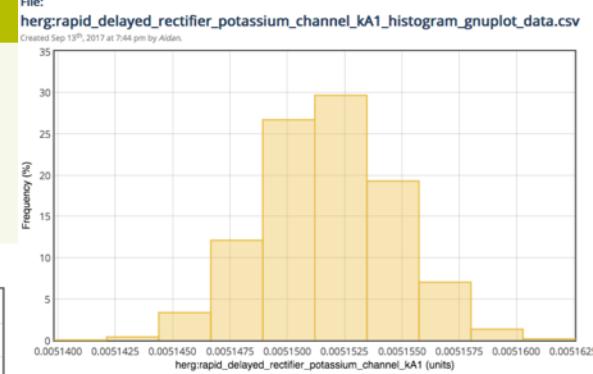
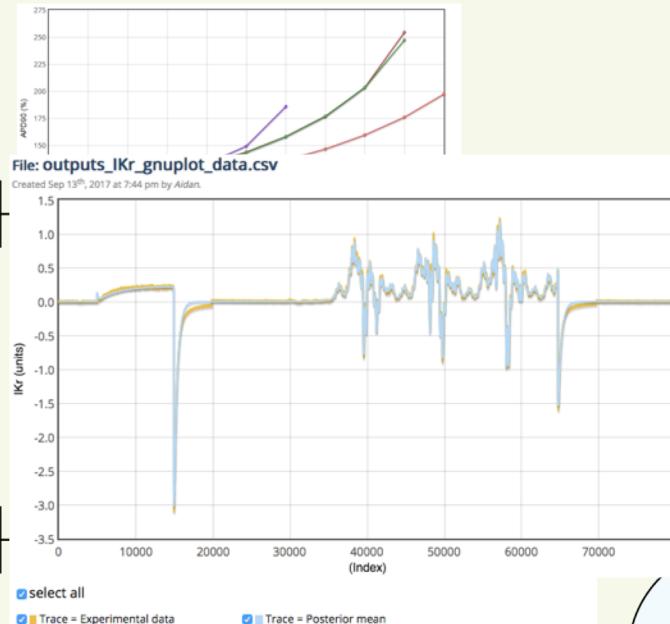
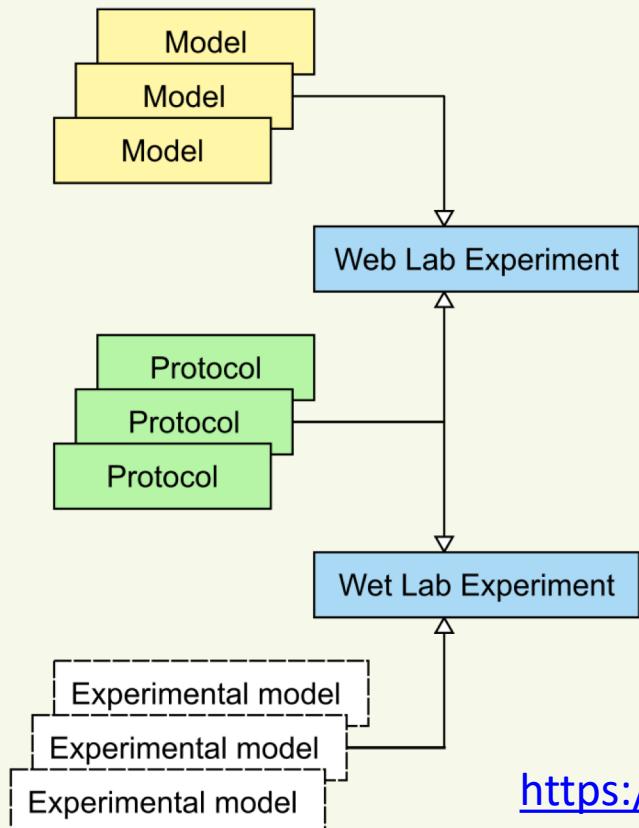
- Jonathan Cooper, UCL
- Michael Clerx, University of Oxford

# Lightning talks...

- Jonathan Cooper
- Lucian Smith
- Augustin Luna
- Tom Gorochowski
- Bradley Brown
- Ernst Oberortner
- Cyrille Midingoyi
- Hugh Sorby
- Mihai Glont
- Goksel Misirli
- Michael Clerx
- Chris Myers

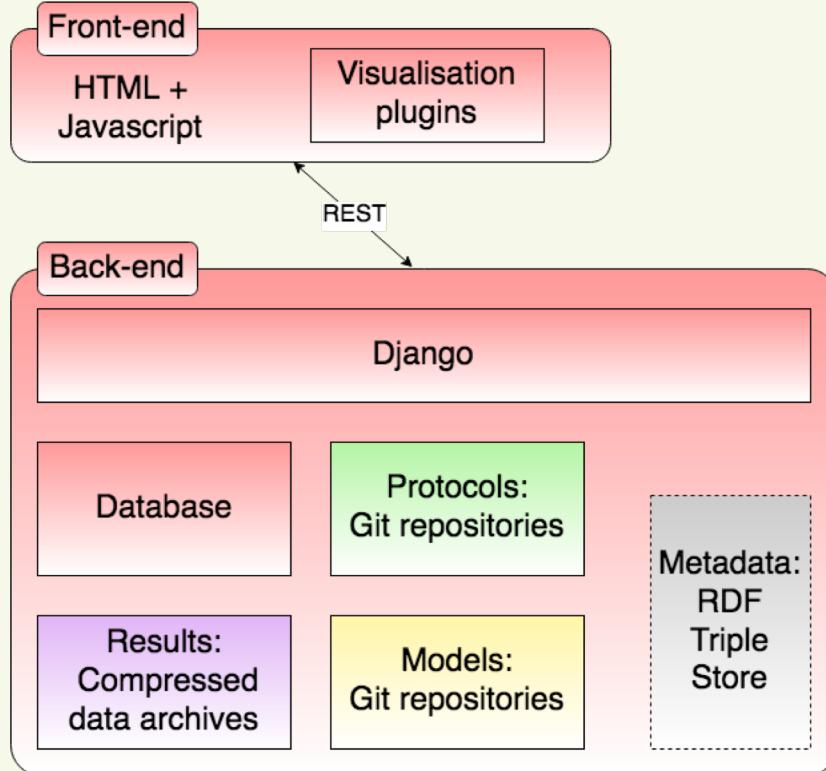


# The (Cardiac Electrophysiology) Web Lab

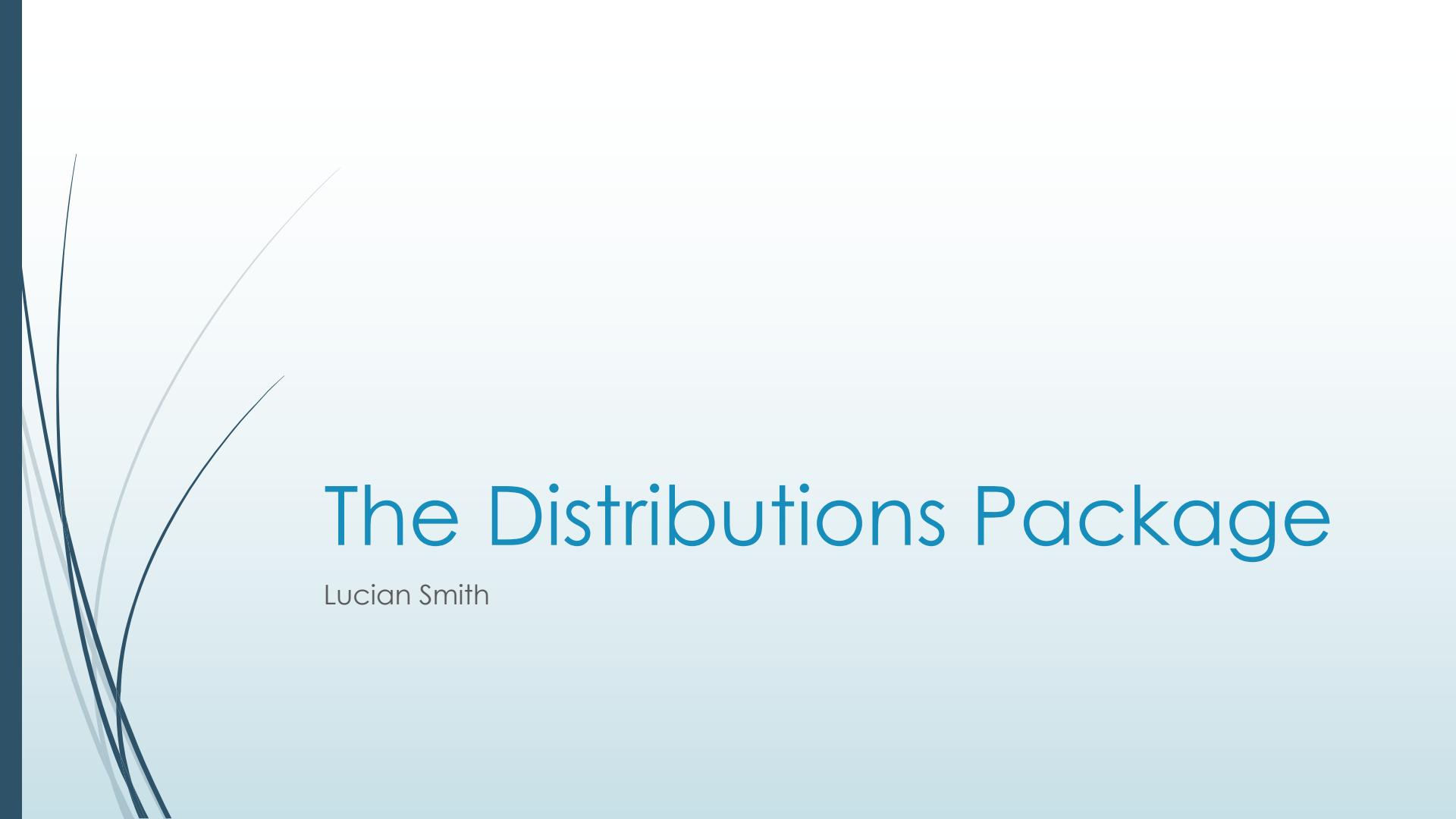


<https://chaste.cs.ox.ac.uk/WebLab>

# Web Lab 2 Architecture



- Ansible deployment of entire stack
- Including local developer version



# The Distributions Package

Lucian Smith

# Recap: ‘distrib’ does two things

- ▶ Allows you to ‘overwrite’ a function definition to be a draw from a distribution
- ▶ Allows you to annotate any element with information about its uncertainty (stdev, range, etc.)

# Both pre-defined and external distributions

- ▶ One set of ‘common’ distributions, defined in the spec itself (normal, poisson, etc.)
- ▶ An additional way to reference external definitions
- ▶ Could reduce to only one if people wanted



What's changed?

# Namespace/version

- ▶ One version; two namespaces
  - ▶ [http://www.sbml.org/sbml/level3/  
version1/distrib/version1](http://www.sbml.org/sbml/level3/version1/distrib/version1)
  - ▶ [http://www.sbml.org/sbml/level3/  
version2/distrib/version1](http://www.sbml.org/sbml/level3/version2/distrib/version1)

# DistribBase id/name

- A new base class for all ‘distrib’ classes implemented
  - ‘distrib:id’ and ‘distrib:name’ available in L3v1 documents
  - Only ‘id’ and ‘name’ available in L3v2 documents

# Implementation

- ▶ libsbml-5.17.0-experimental has code that matches new distrib spec
- ▶ libsbml-5.17.1-experimental (i.e. current source) fixes some important bugs: ask for build if you need one
- ▶ Code automatically generated by DEVISER—thanks, Sarah!

# The Specification

[http://sbml.org/Documents/Specifications/SBML\\_Level\\_3/Packages/distrib](http://sbml.org/Documents/Specifications/SBML_Level_3/Packages/distrib)

<http://sourceforge.net/p/sbml/code/HEAD/tree/trunk/specifications/sbml-level-3/version-1/distrib/sbml-level-3-distrib-package-proposal.pdf?format=raw>

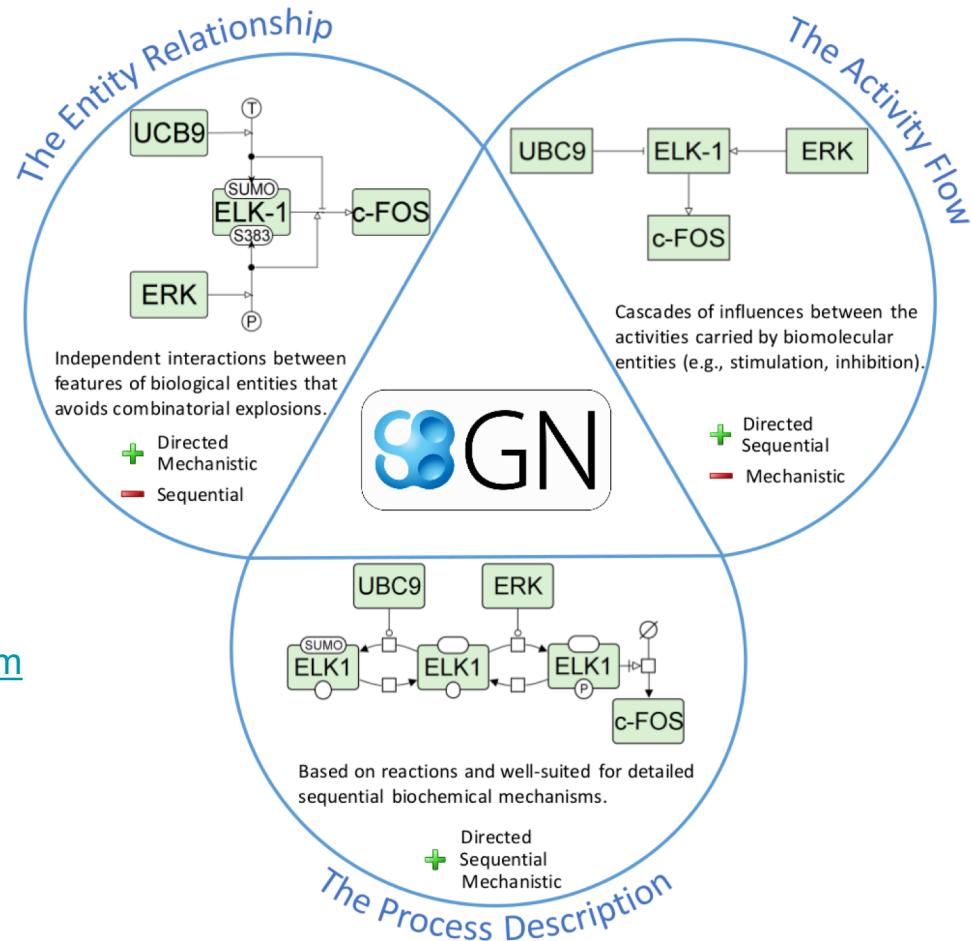
# A Test Suite

<https://github.com/luciansmith/stochastic-distrib-test-suite>

- ▶ Same format as SBML stochastic test suite (itself modeled after Darin's stochastic test suite).
- ▶ Tests each distribution, and variations to many distributions (truncation, alternate formulations)
- ▶ Will be updated to latest namespace/id changes this week

# The Systems Biology Graphical Notation

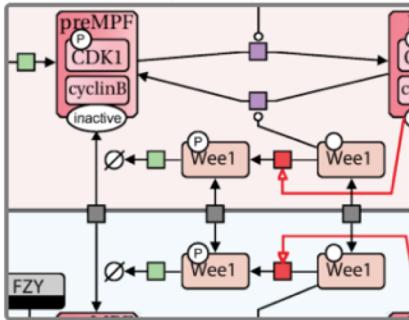
- 3 complementary languages:
  - Entity Relationship
  - Activity Flow
  - Process Description
- Human-readable (SBGN)
- Machine-readable (SBGN-ML)
- Useful links
  - Website [sbgn.github.io/sbgn](https://sbgn.github.io/sbgn)
  - Development: [github.com/sbgn](https://github.com/sbgn)
  - Contact: [sbgn-discuss@googlegroups.com](mailto:sbgn-discuss@googlegroups.com)



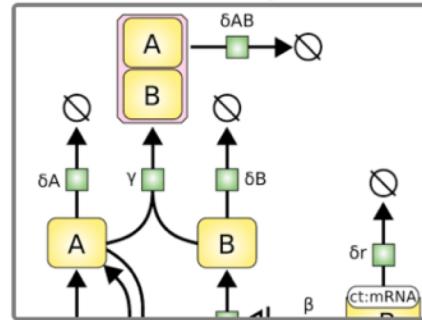
# Update on latest activities

- Website rearrangement:  
[sbgn.github.io/sbgn](https://sbgn.github.io/sbgn)
- Tips to create SBGN maps:  
[doi:10.1371/journal.pcbi.1005740](https://doi.org/10.1371/journal.pcbi.1005740)
- Converters:
  - CellDesigner  $\leftrightarrow$  SBGN-ML:  
[github.com/royludo/cd2sbgnml](https://github.com/royludo/cd2sbgnml)
  - yEd Graph Editor  $\leftrightarrow$  SBGN-ML:  
[github.com/sbgn/ySBGN](https://github.com/sbgn/ySBGN)
- SBGN discussion:
  - Extension of libSBGN: support colors & annotations?
- Generic SBGN abstract & poster
- SBGN PD L1V2 specification: work in progress!

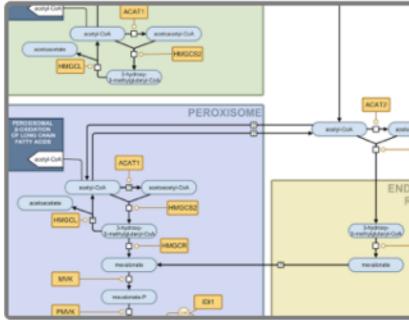
PD map of the Drosophila cell cycle,  
doi:10.1371/journal.pcbi.1005740



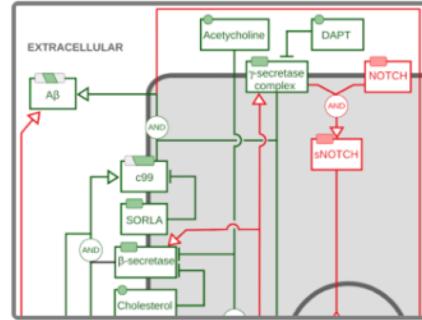
PD map of two-gene system behaviour,  
doi:10.1038/nrg3885



PD map of the mammalian cholesterol biosynthesis, doi:10.1016/j.bcp.2013.03.021



AF map of protein precursor processing,  
doi:10.1002/psp.412155



[sbgn.github.io/sbgn/published\\_maps](https://sbgn.github.io/sbgn/published_maps)