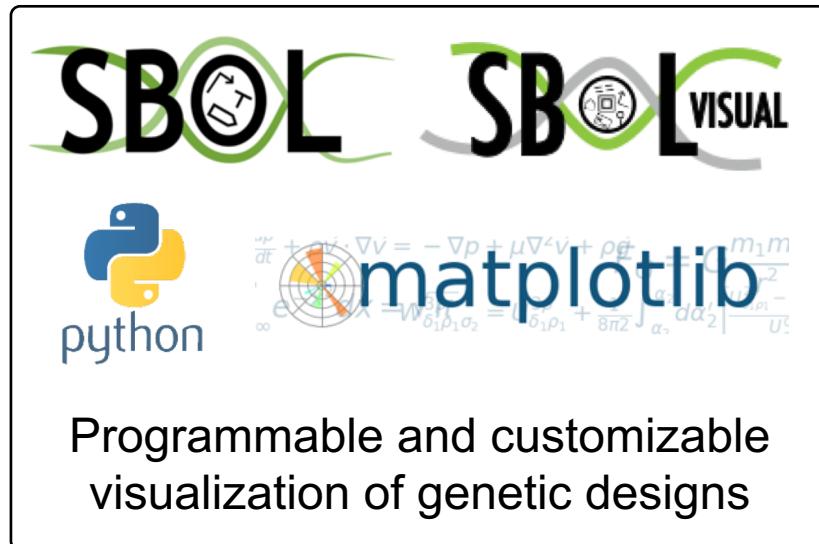
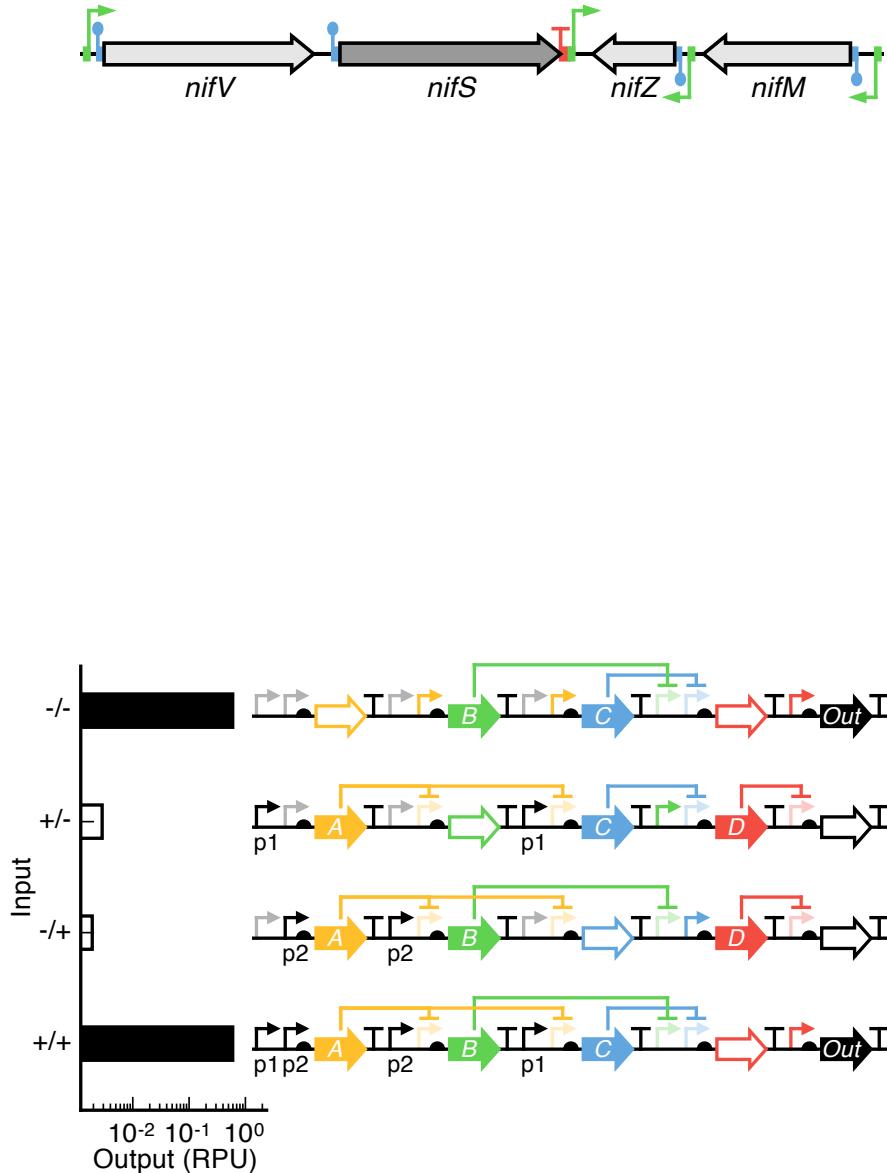


# DNAplotlib



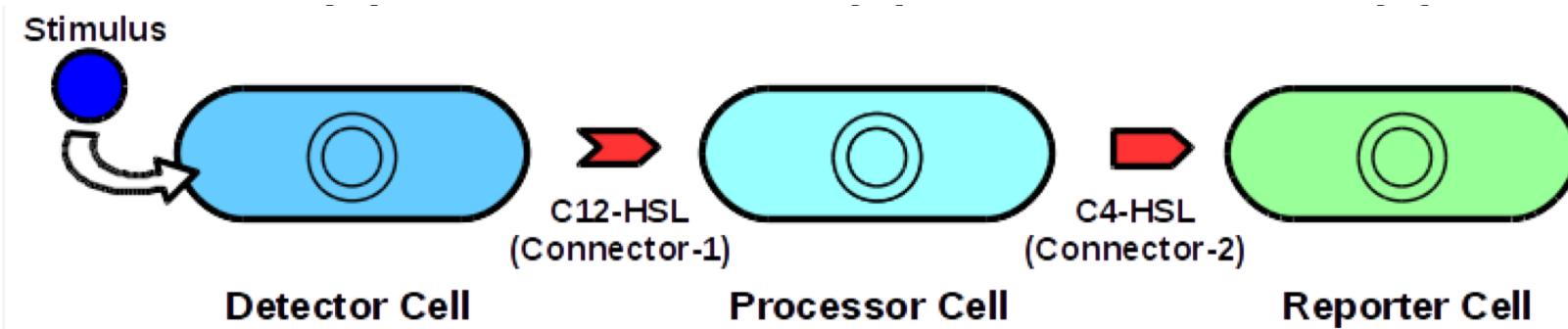
## Plans for HARMONY:

- SBOL2 input (Sunwoo Kang, GSoC)
- Parametric SVG glyph library
- Advanced layout and routing

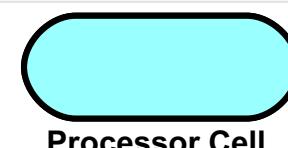
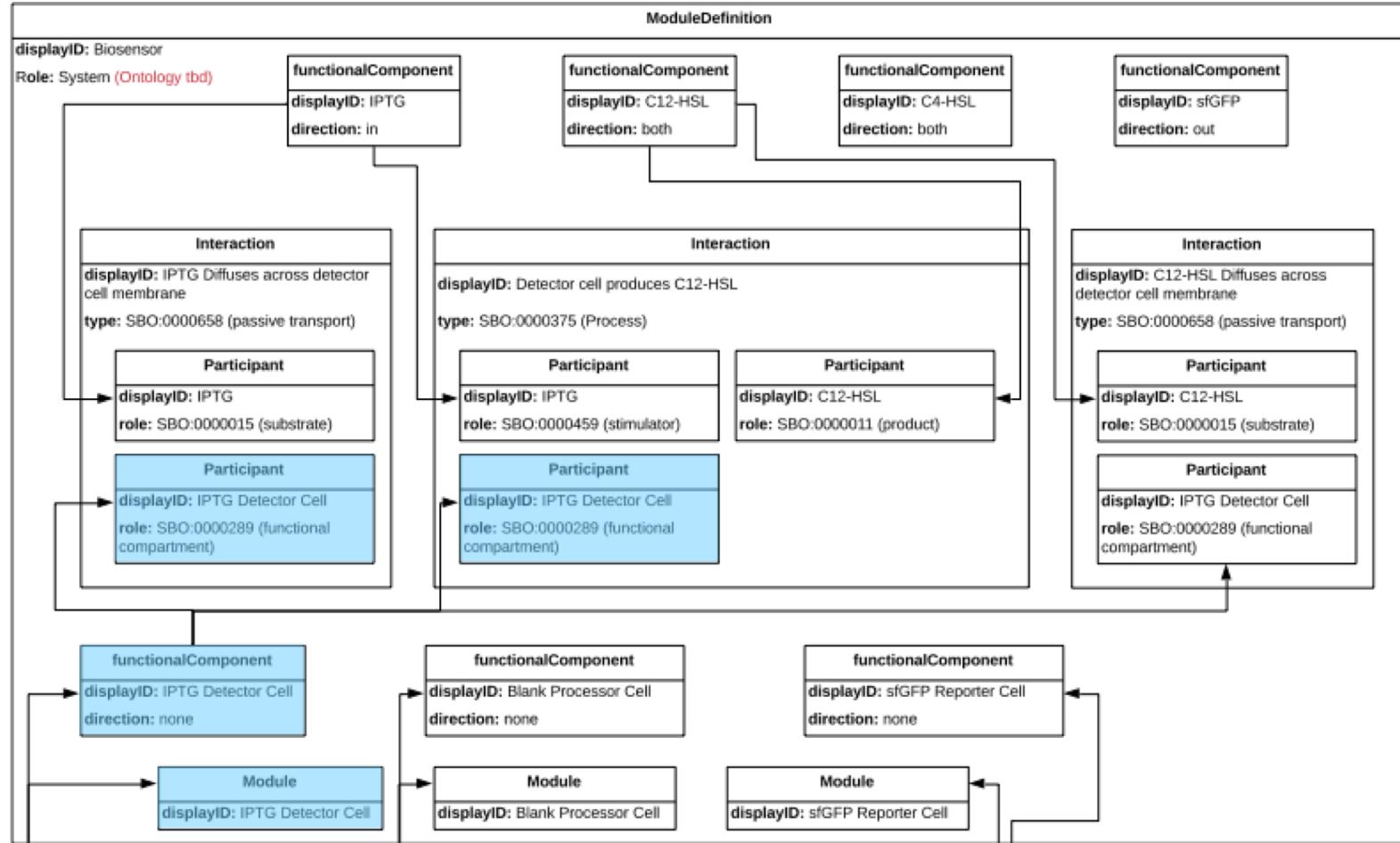


# Capturing Multicellular Systems in SBOL

- Synthetic multicellular systems are becoming popular in synthetic biology
- Need to capture information about these systems



**Species, proportions, interactions, spatial configuration**



# DOE JGI – DNA Synthesis Production Pipeline



**Vendor**

**User**

Sequences,  
Design  
Specification

**DNA Synthesis Group**

**Submission Portal**

**Biosecurity Screening**

+

**Construct Design**



**Assembly**

**QC**

**Characterization**



**Synthesis**

# Exchanging Build Instructions using SBOL



## Construct Design



<https://boost.jgi.doe.gov>

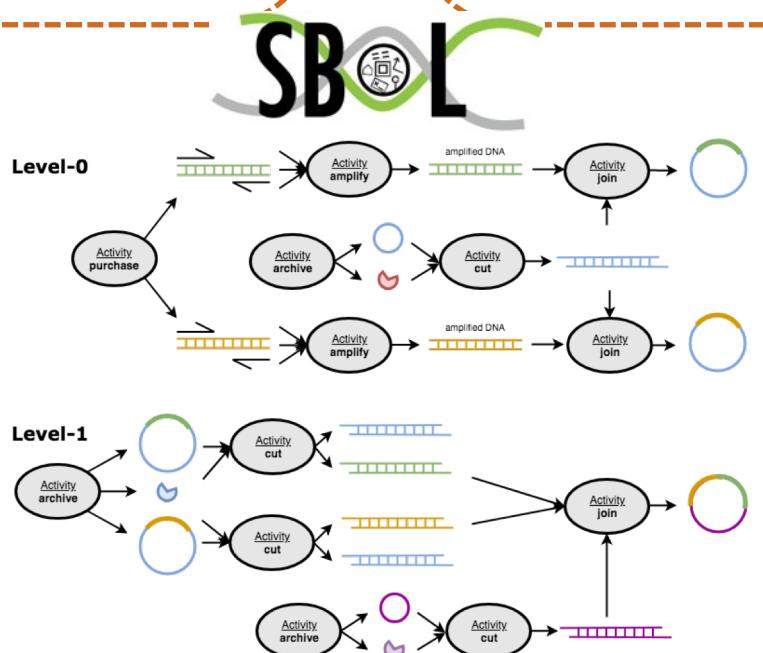
## Synthesis, Assembly, QA/QC



**SynTrack**

Reference	Length	1898_1075539_ANXWB	1898_1075539_ANXUW	1898_1075539_ANXUG	1898_1075539_ANXSW	1898_1075539_ANXTT
Rob_vioA	1301	27W				
Rob_vioB	3075	3	2500	937	2234	3
Rob_vioE	648	402	5625	800	1376	2
Rob_vioD	1207	4	1	1	3	2
Rob_vioC	1365	548	3	3	3	1

QA/QC using NGS Sequencing



# CropML: A declarative Metalanguage for semantic and modular representation of Crop Models

**Cyrille Ahmed MIDINGOYI (PhD Student, INRA)**

**Supervisor:** **Pierre MARTRE (INRA, LEPSE)**

**Frédéric GARCIA (INRA, MIAT)**

**Christophe PRADAL (CIRAD, AGAP)**

Oxford, from 18 to 22<sup>nd</sup> June 2018

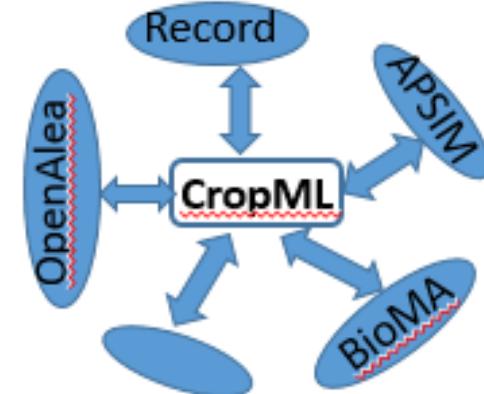
# A standard in Crop Models Community

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## Agricultural Models Exchange Initiative



Need A standard for exchange Crop Models



**CropML: Declarative metalanguage based on XML for describing crop models (component and model composite as workflow)**

## combine Standards!!!

Good standard formalism for  
describing equations in declarative  
form

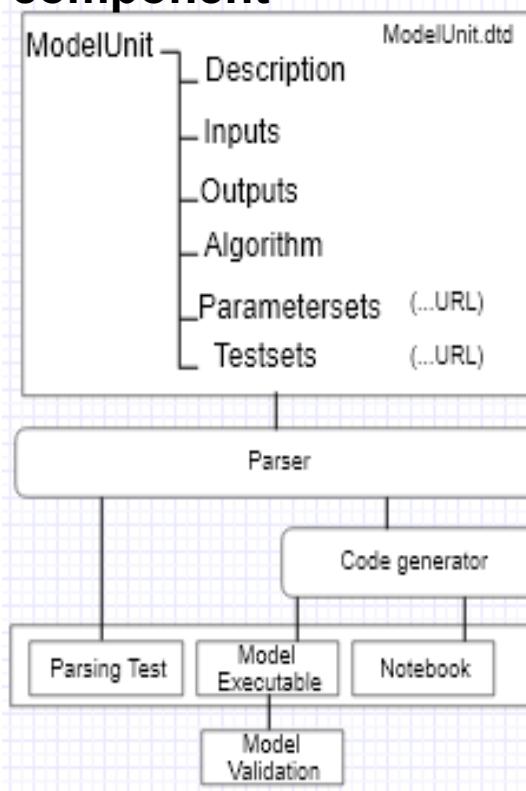
## In Crop Models

- Imperative programming
- No mathematical formalism for describing a component
- Equation of finite differences

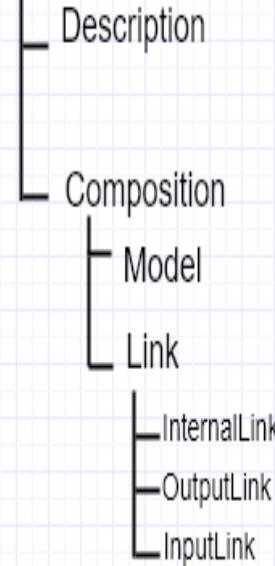
# CropML structure

8

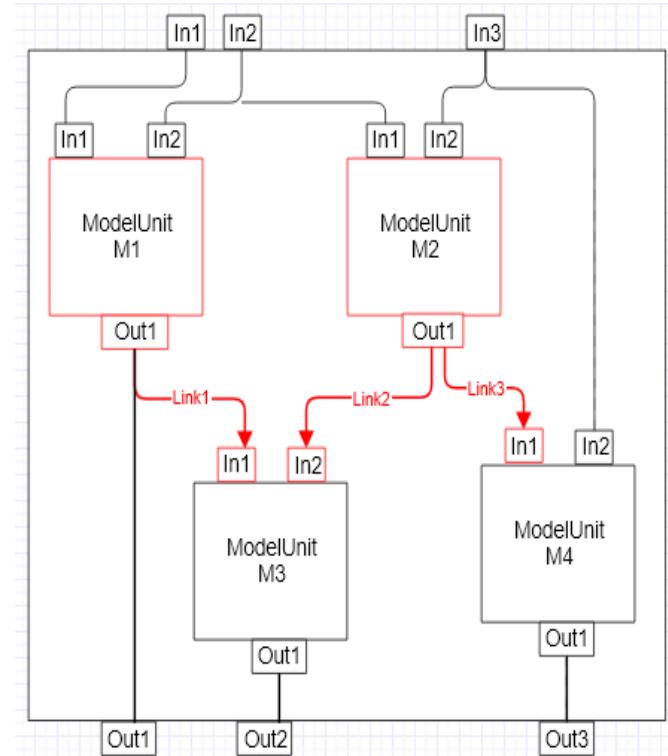
## A model unit or a component



## ModelComposition



## A model Composite

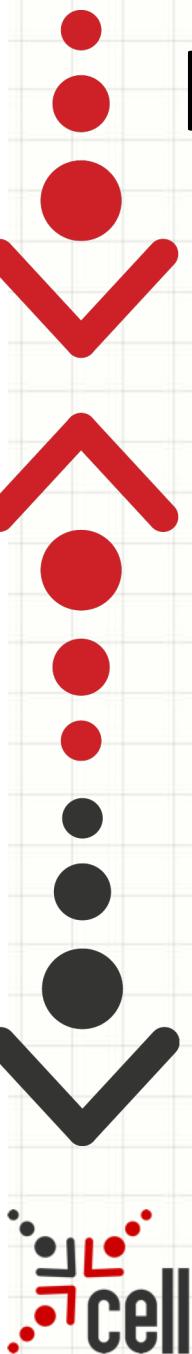


Need to be inspired on Combine conceptual methodologies

- Hierarchical declarative structure
- Link to some ontologies
- Code Generation

# Thanks





# libCellML



Create and manipulate



Print and parse



Validate against the specification



Resolve imports



Units consistency



Generate executable code

# Introducing the BioModels REST API

Mihai Glonț,  
Senior Software Engineer

<https://www.ebi.ac.uk/biomodels>

# s/SOAP/REST/g

- New BioModels API: <https://wwwdev.ebi.ac.uk/biomodels/docs/>
  - SOAP endpoint will be decommissioned soon after HARMONY 2019, on 31 May 2019
  - Workshops to help you migrate to the new API:
    - Wednesday 20 June 2018, 11am BST
    - HARMONY 2019
- Goals for this week:
  - Try the new API: <https://wwwdev.ebi.ac.uk/biomodels/docs/>
  - Ask questions: [biomodels-developers@lists.sourceforge.net](mailto:biomodels-developers@lists.sourceforge.net)
  - Give feedback: <https://tinyurl.com/bioModelsHarmony18>