Quick Introduction to SBOL Visual 2.1

May 2019

Diagram Elements

Sequence Feature Glyphs

Molecular Species Glyph

Module

Nucleic Acid Backbone

GFP

pTet

gfp

tetR

Labels

Interactions

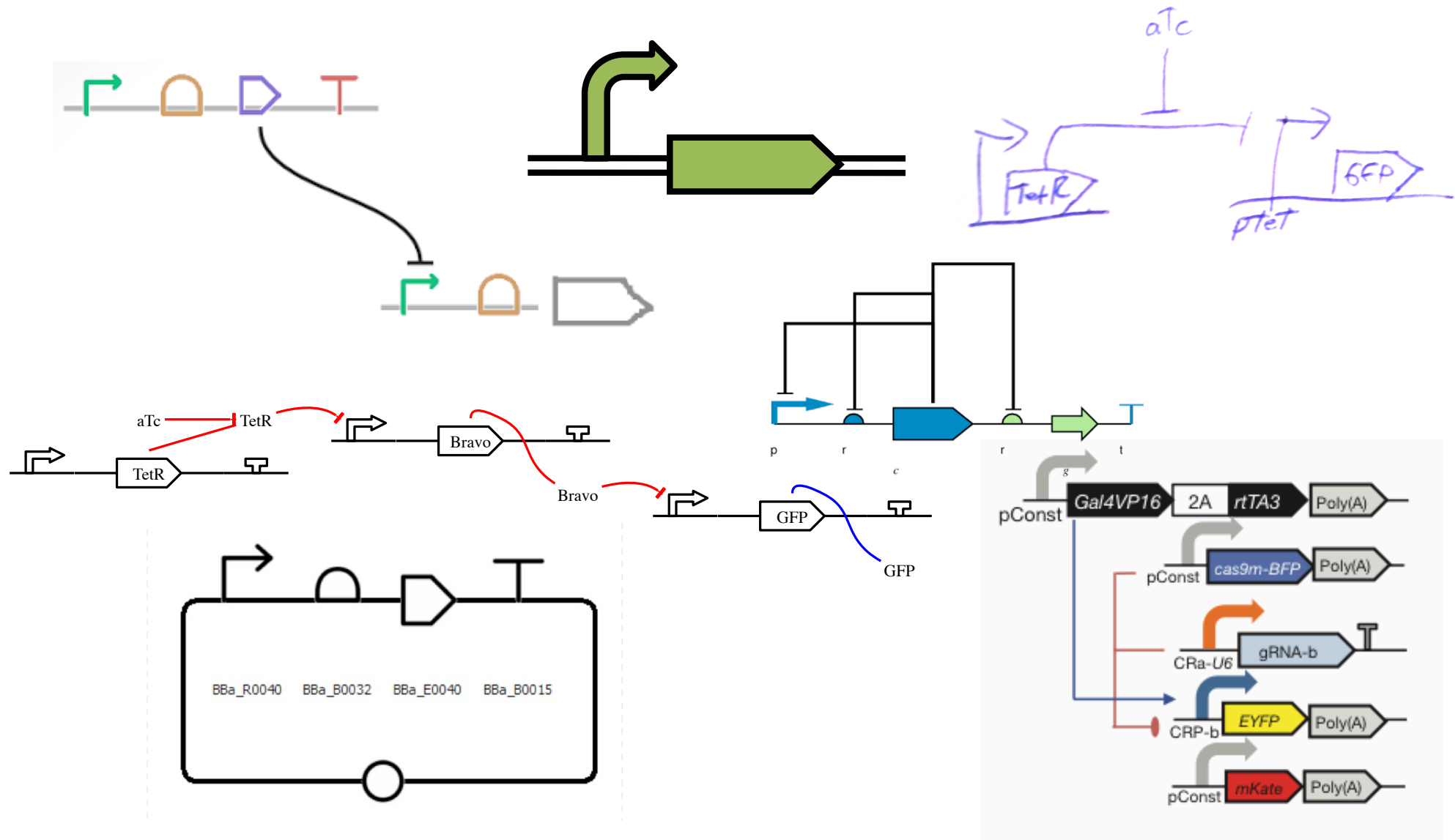**Interaction Node**

aTc

Reverse Complement Sequence Feature Glyphs

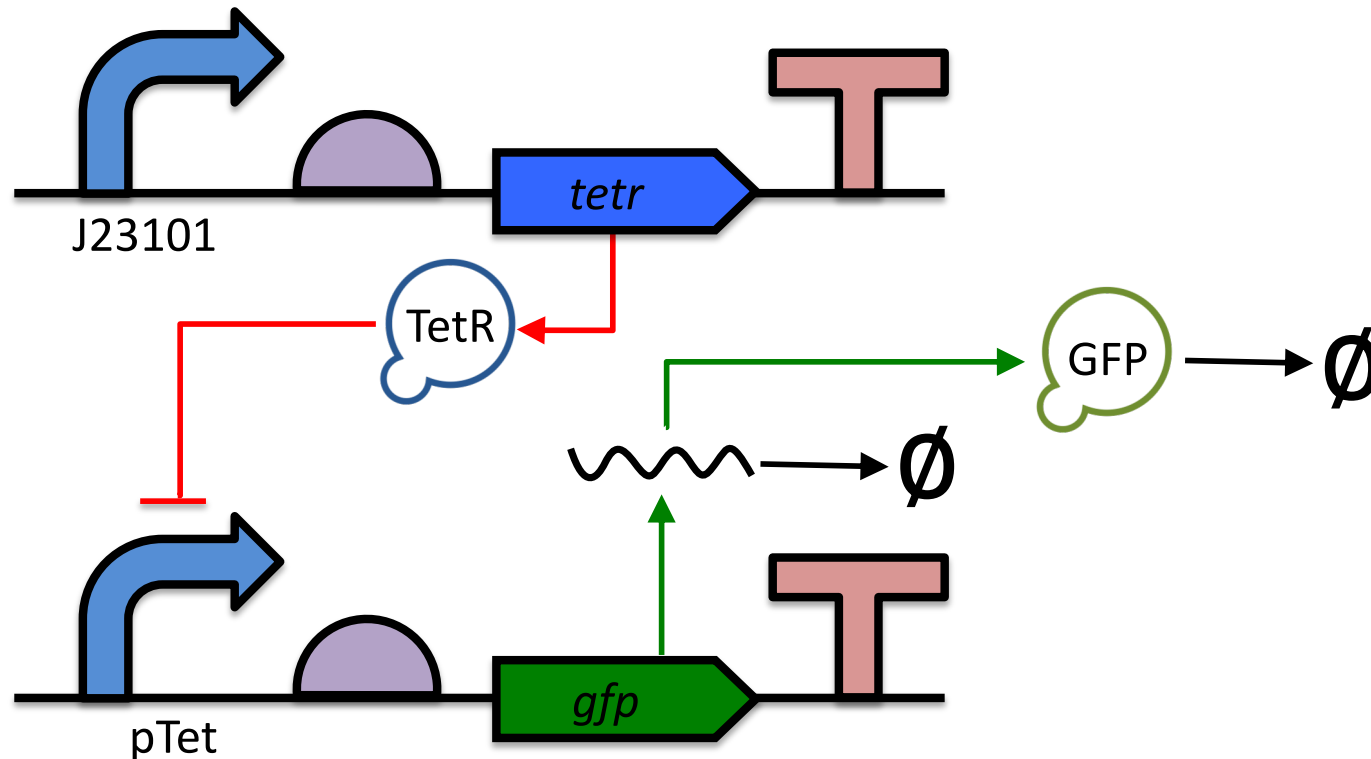*Grey text and lines (including this) are annotations*
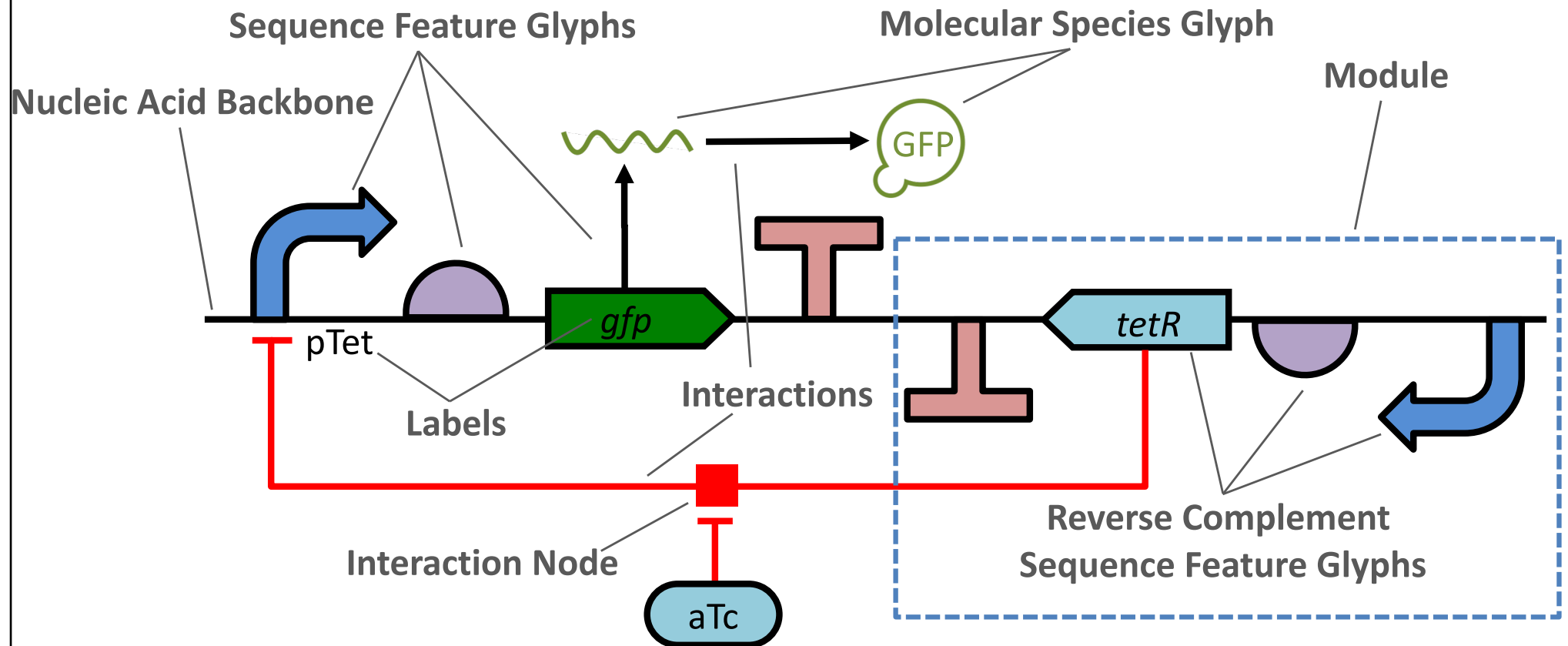
Flexibility of Style

Color, Text, Scaling, Strands, Styling: all your choice
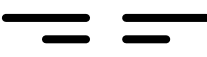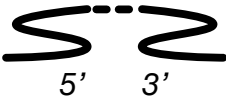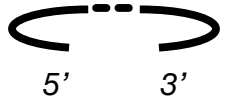
Complex Example Diagram

The top functional unit produces the TetR protein constitutively, under control of promoter J23101. TetR represses the pTet promoter, which is regulating production of GFP. The diagram of GFP production explicitly includes the intermediate mRNA and the degradation of both the mRNA and protein products.

Nucleic Acid Glyphs

Aptamer | Assembly Scar | Blunt Restriction Site | *Recommended* *Alternate* CDS | Engineered Region | Insulator | *5' 3'* Sticky Ends | Sticky Restriction Site

No Glyph | Omitted Detail | Promoter | Opterator | Ribosome Entry Site | Terminator | Poly-A Site | ORI | ORI-T | *Recommended* *Alternate* Unspecified

Signature | Recombination Site | Primer Binding Site | Non-Coding RNA | Composite | *5' 3'* Chromosomal Locus | *5' 3'* Circular Plasmid

DNA *RNA* *Protein* Location (*Recommended*) | *DNA* *RNA* *Protein* Location (*Alternate*) | *DNA* *RNA* Stop Site | *DNA* *RNA* *Protein* Cleavage Site | *DNA* *RNA* *Protein* Stability Element

Molecular Species & Interaction Glyphs

Molecular Species

Superpose Glyphs   *Alternate*
Complex

Recommended   *Alternate*
Macromolecule

No Glyph

Generic   *1-strand*   *2-strand*
Nucleic Acid

Small
Molecule

Recommended   *Alternate*
Unspecified

Interactions

Control

Degradation

Inhibition

Process

Stimulation

Association

Process

Dissociation
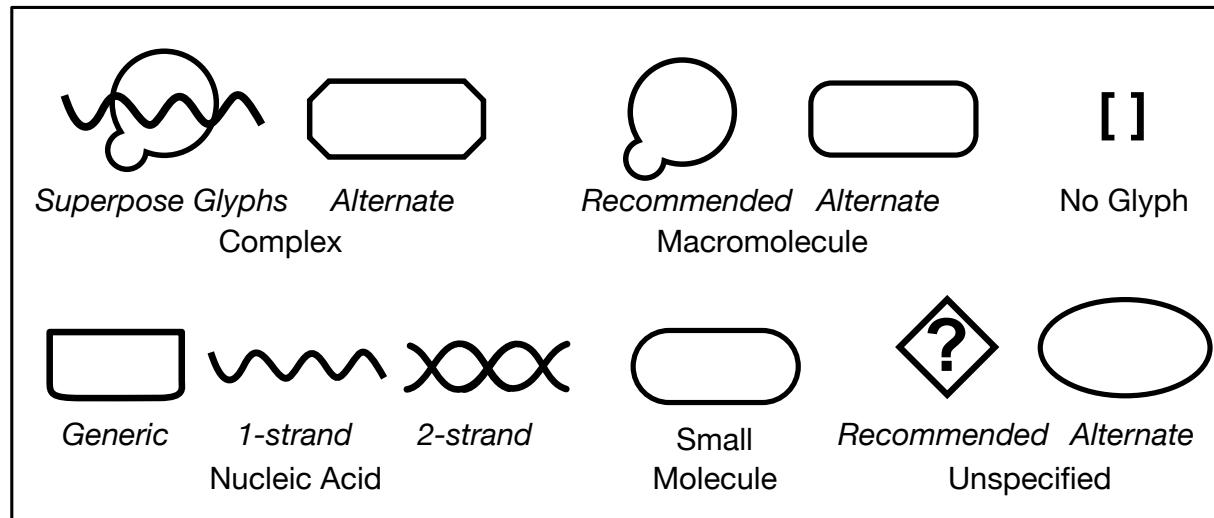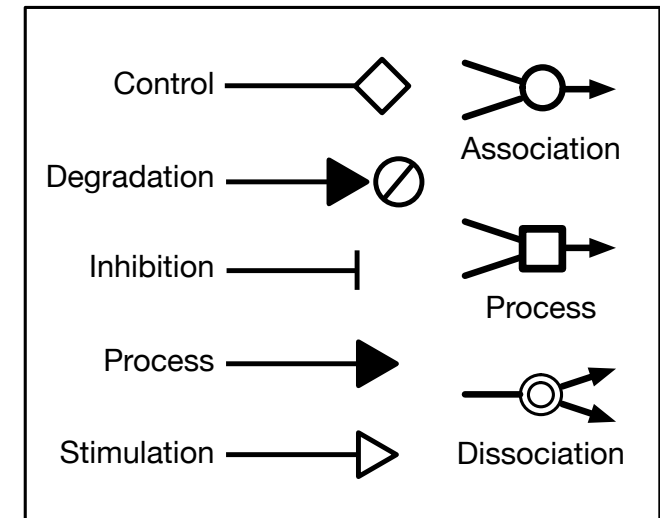
Making SBOL Visual Diagrams

- Using your favorite graphics editor:
  - Many glyphs can be drawn directly
  - Glyph set available: http://sbolstandard.org/visual/

- Specialized visualization tools:
  - Pigeon: http://pigeoncad.org/
  - VisBOL: http://visbol.org/design/
  - GraphViz: http://www.graphviz.org/
  - DNAPlotLib: https://github.com/VoigtLab/dnaplotlib

`http://sbolstandard.org`

- Use the symbols in your papers & talks
- Contribute opinions, use cases, new symbols
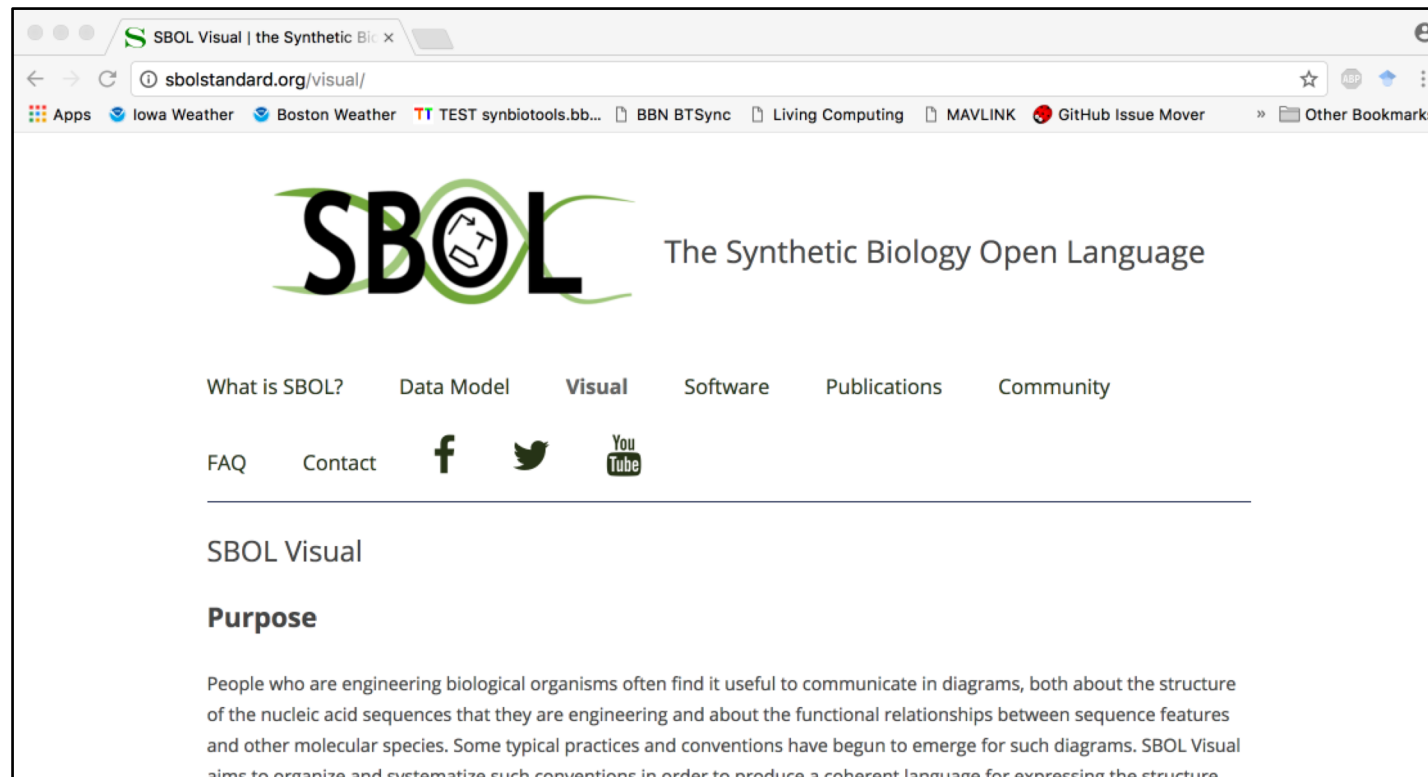
- Community is open for anyone to join