Quick Introduction to SBOL Visual 2.0

January 2018
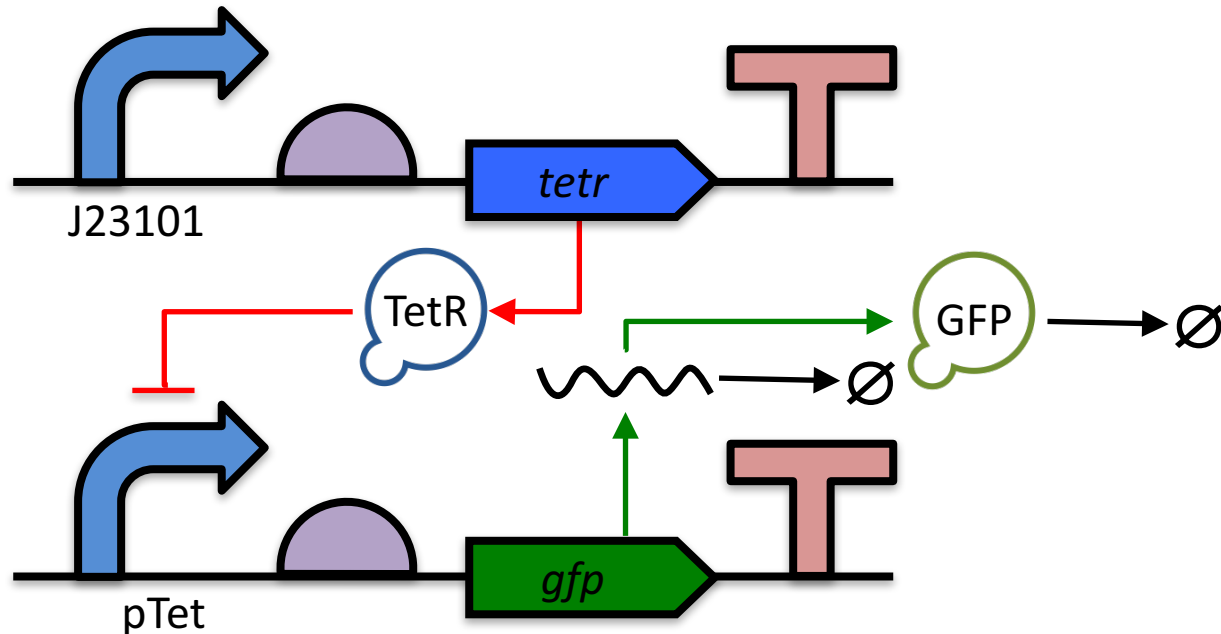
Diagram Elements

Sequence Feature Glyphs

Molecular Species Glyph

Nucleic Acid Backbone

GFP

gfp

pTet

tetR

Labels

Interactions

Reverse Complement Nucleic Acid Component Glyphs
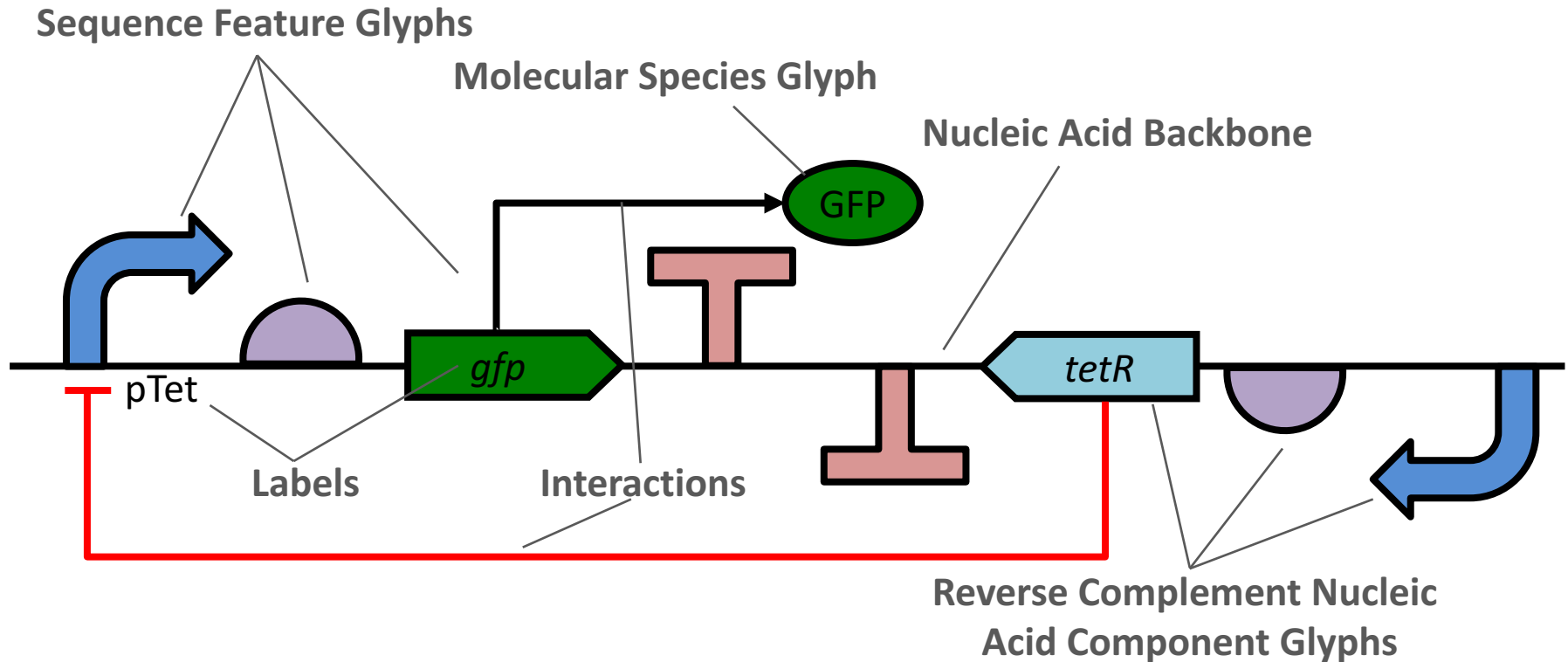
Grey text and lines (including this) are annotations

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.
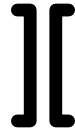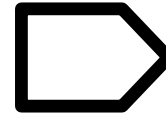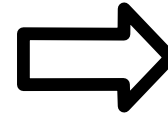
Nucleic Acid Glyphs

Aptamer

Assembly Scar
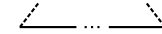
Blunt Restriction Site

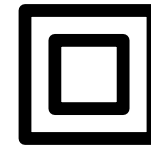*recommended*   *alternate*
CDS

Composite

Engineered Region

Sticky End
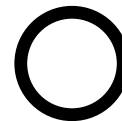
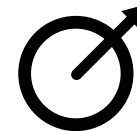Sticky Restriction Site

Insulator
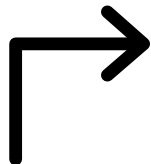
No Glyph

Non-Coding RNA

Omitted Detail

Operator
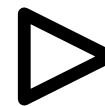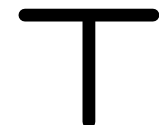
ORI

ORI-T

Poly-A Site

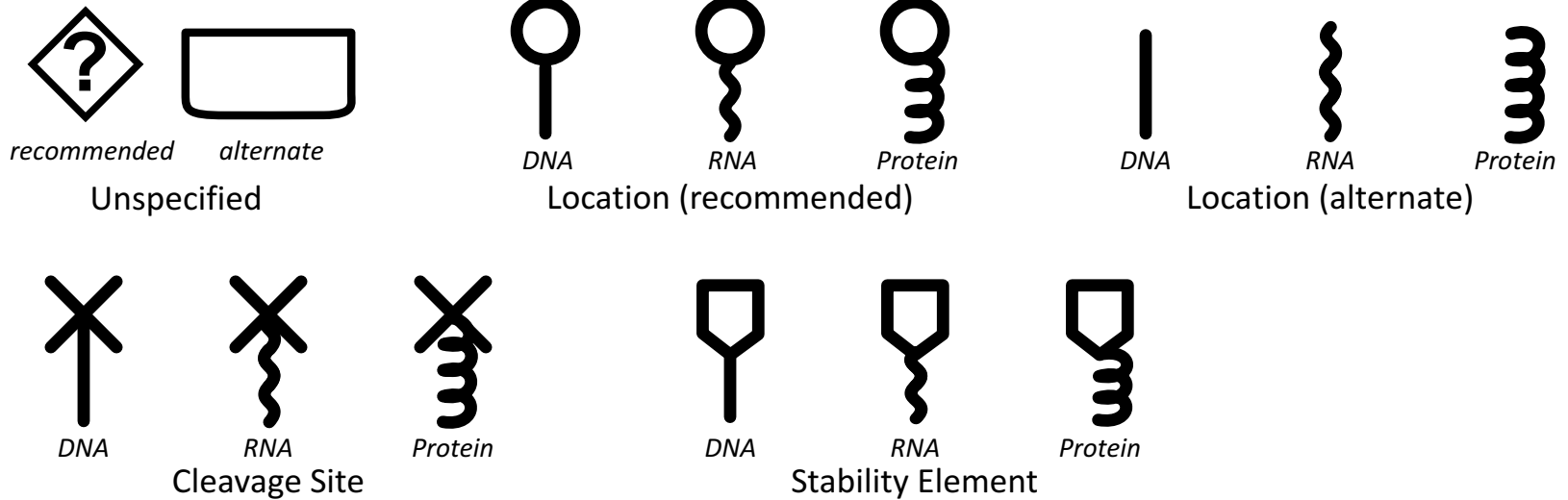Primer Binding Site

Promoter

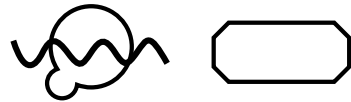Ribosome Entry Site

Signature

Recombination Site

Terminator

Nucleic Acid Glyphs

recommended   alternate

Unspecified

DNA   RNA   Protein

Location (recommended)

DNA   RNA   Protein

Location (alternate)

DNA   RNA   Protein

Cleavage Site

DNA   RNA   Protein

Stability Element

Molecular Species & Interaction Glyphs

Molecular Species

superpose glyphs   *alternate*

Complex

recommended   *alternate*

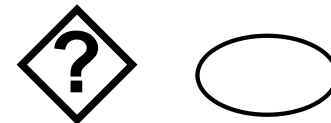Macromolecule

No Glyph   Nucleic Acid (Generic)

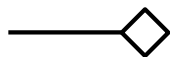Nucleic Acid (1-Strand)   Nucleic Acid (2-Strand)   Small Molecule

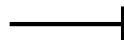*recommended*   *alternate*
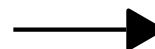
Unspecified

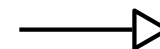## Interaction

Control   Degradation   Inhibition   Process   Stimulation

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
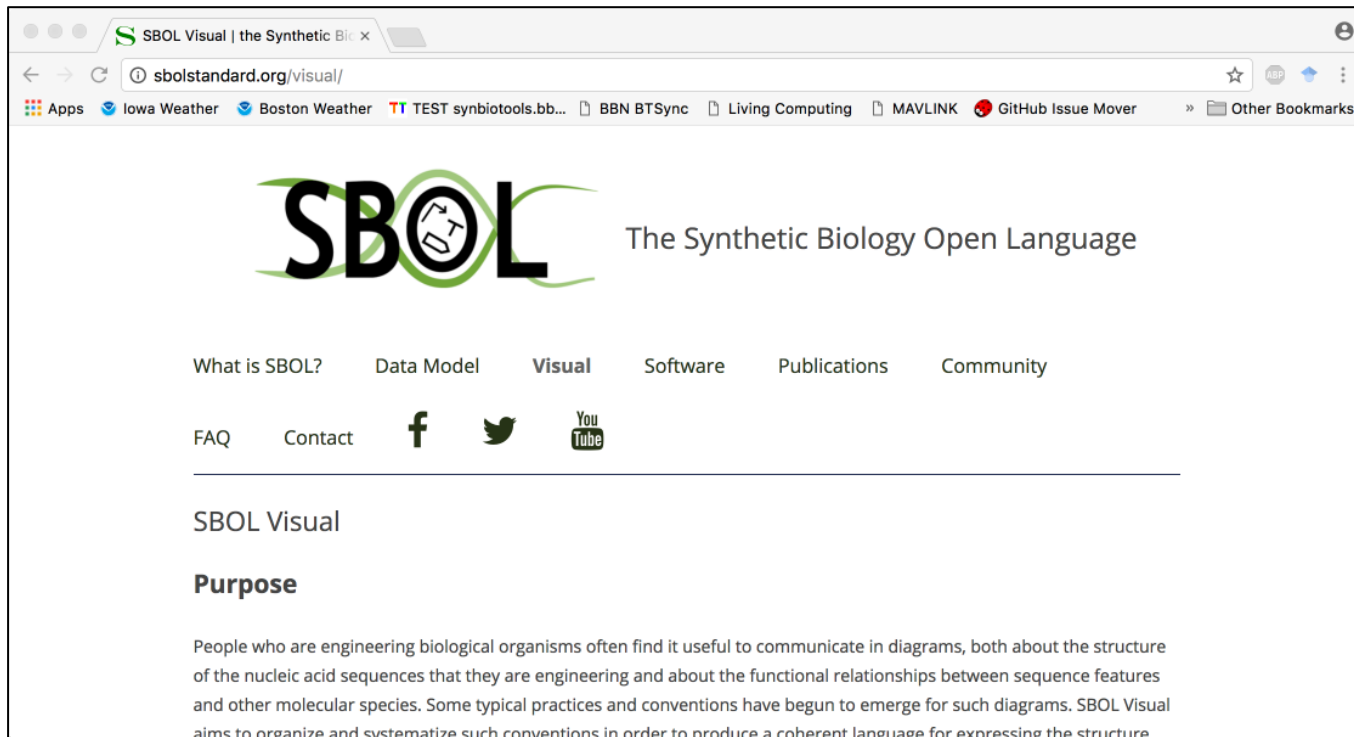
- Community is open for anyone to join