

# Compiling Data Sets from RNA Kinetic Simulations

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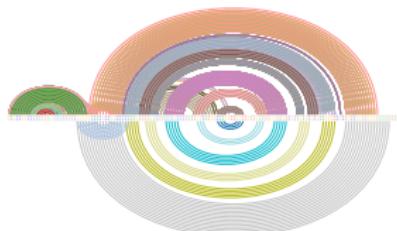
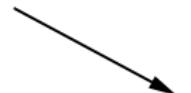
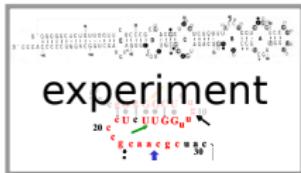
Bled, February 16, 2016

# RNA folding kinetics

kinwalker									
C	A	G	T	C	G	T	C	G	A
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C

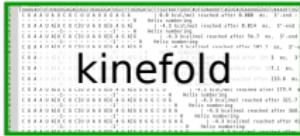
transat									
C	A	G	T	C	G	T	C	G	A
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C

kinefold									
C	A	G	T	C	G	T	C	G	A
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C
G	T	C	A	G	T	C	A	G	T
T	G	A	C	T	G	A	C	T	G
A	C	T	G	A	C	T	G	A	C



Lentz et al. (1996)  
Wong et al. (2007)

# RNA folding kinetics

kinefold  


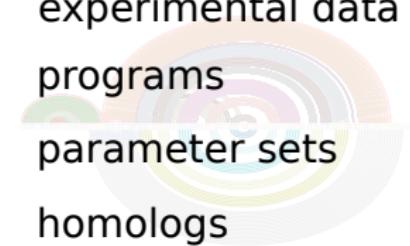
transat  


kinwalker  

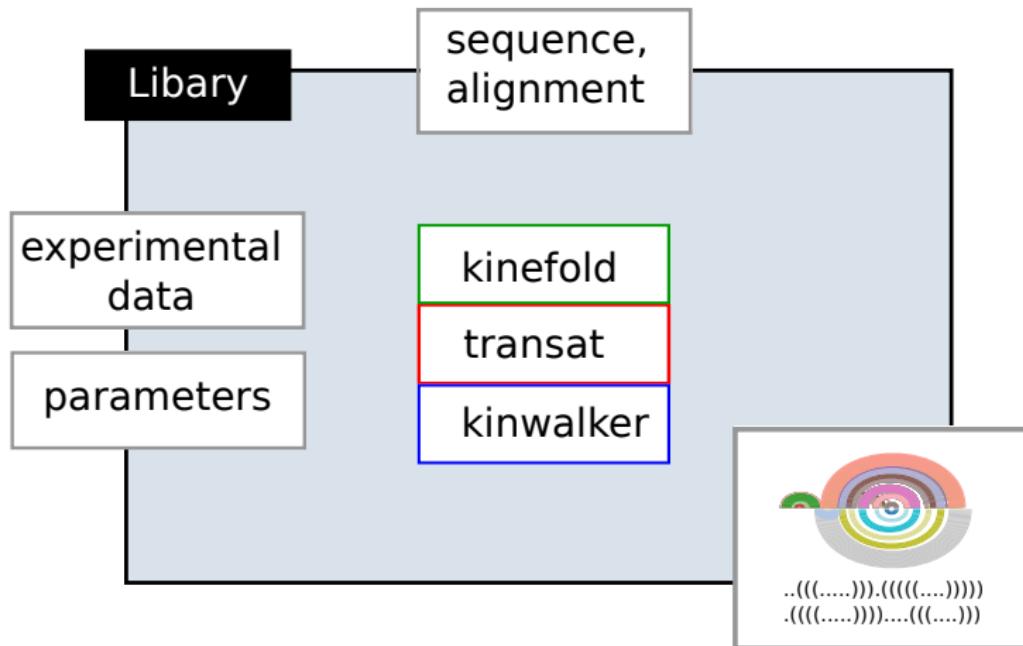

experiment  




experimental data  
programs  
parameter sets  
homologs



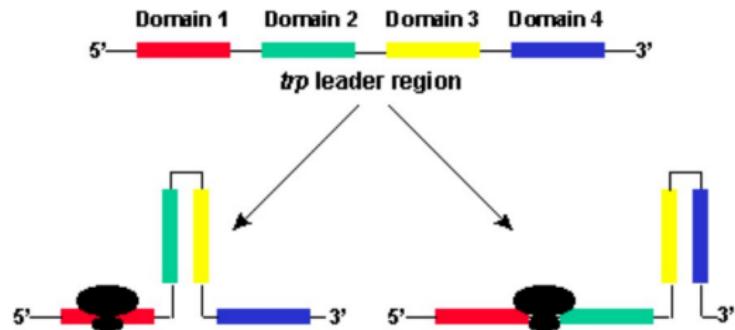
# Library



# Libary

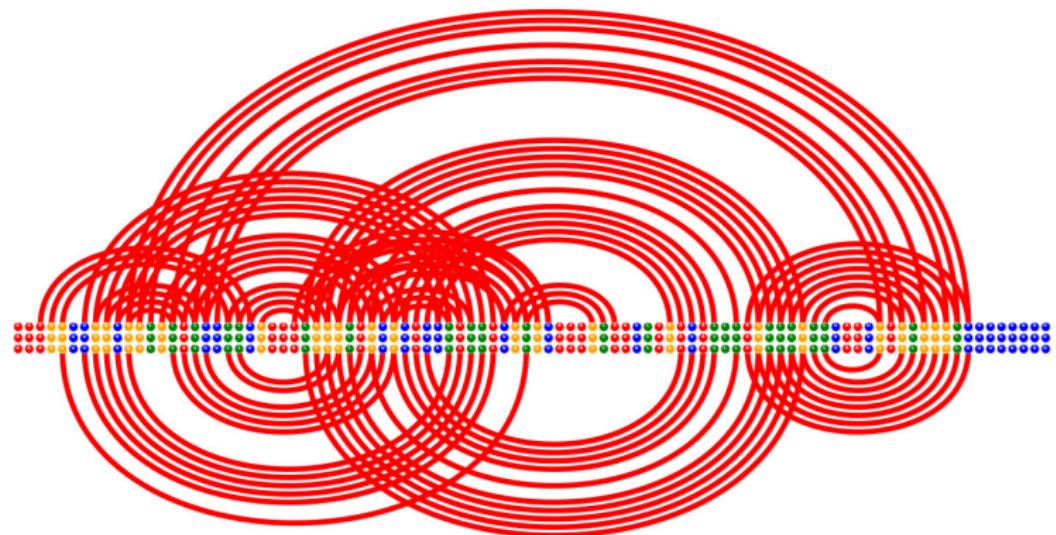
- ▶ Handle sequence files
- ▶ Run programs
- ▶ Extract structures
- ▶ Map structures to alignment
- ▶ Scoring

# Example TRP operon leader

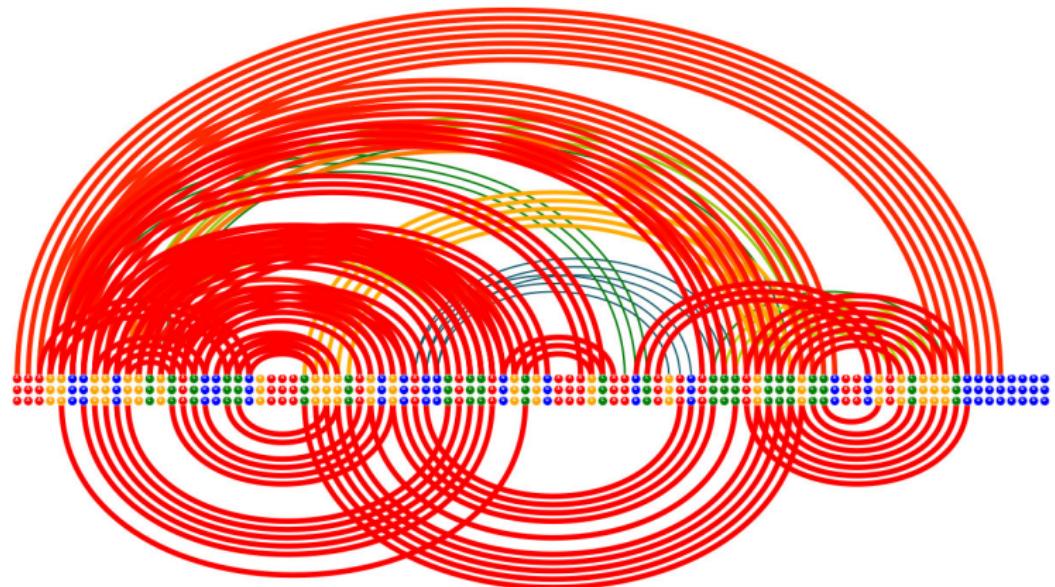


Yanofski (1981)  
www.ndsu.edu

## Example TRP operon leader - Kinwalker



## Example TRP operon leader - Kinfold

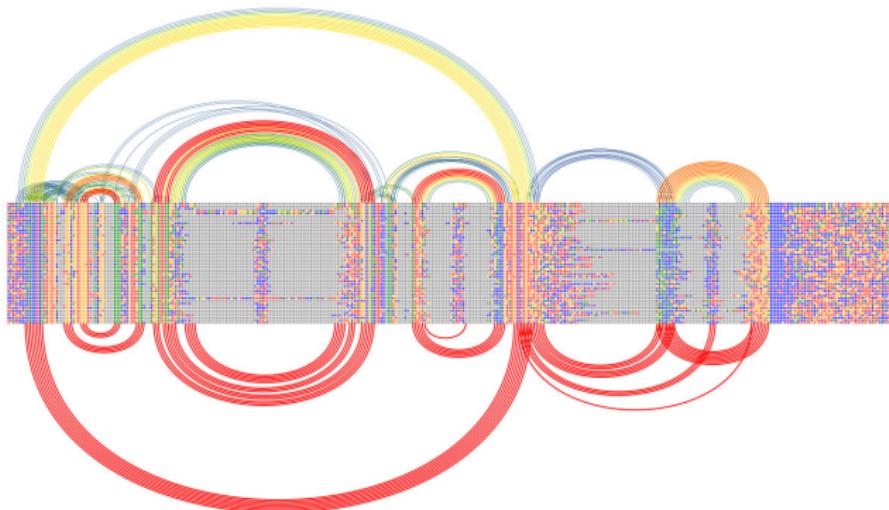


# Example SAM riboswitch

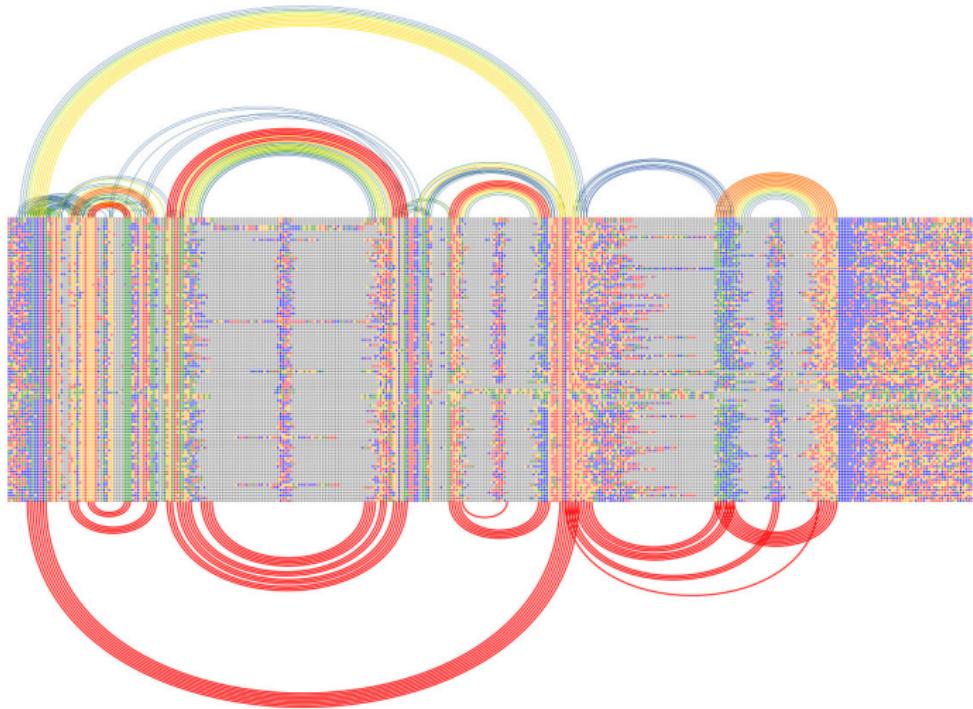


Winkler et al. (2003)

# Example SAM riboswitch - Kinwalker



# Example SAM riboswitch - Transat



## Data Set

- ▶ pre-processed alignments
- ▶ predicted functional and transient structures and bp-lists
- ▶ experimental data
- ▶ visualization via `arcplotter`
- ▶ gtf-like data format

# Data Set

⇒ currently we have 6 Rfam families:

bacterial RNase P RNA

bacterial SRP RNA

HDV ribozyme

TRP operon leader

Levivirus maturation gene

SAM riboswitch

data and suggestions welcome!

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<http://www.rnalands.net/>



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