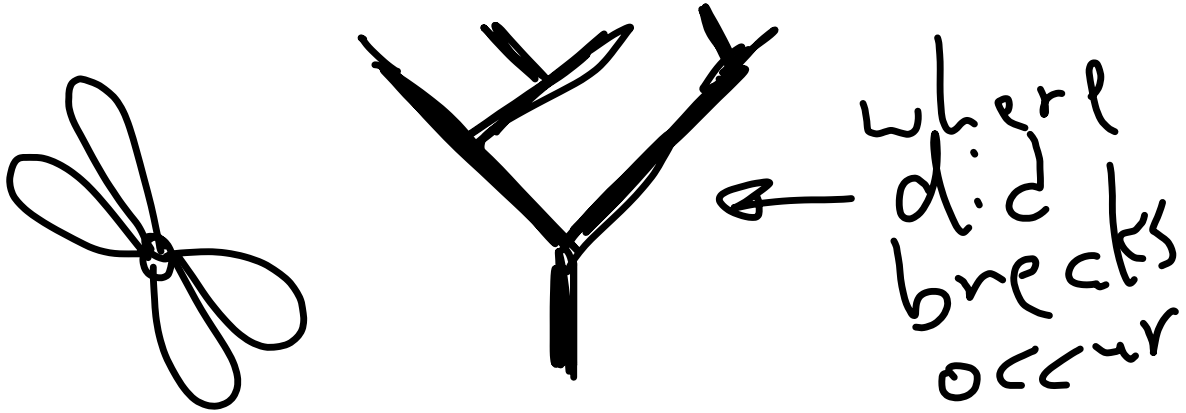
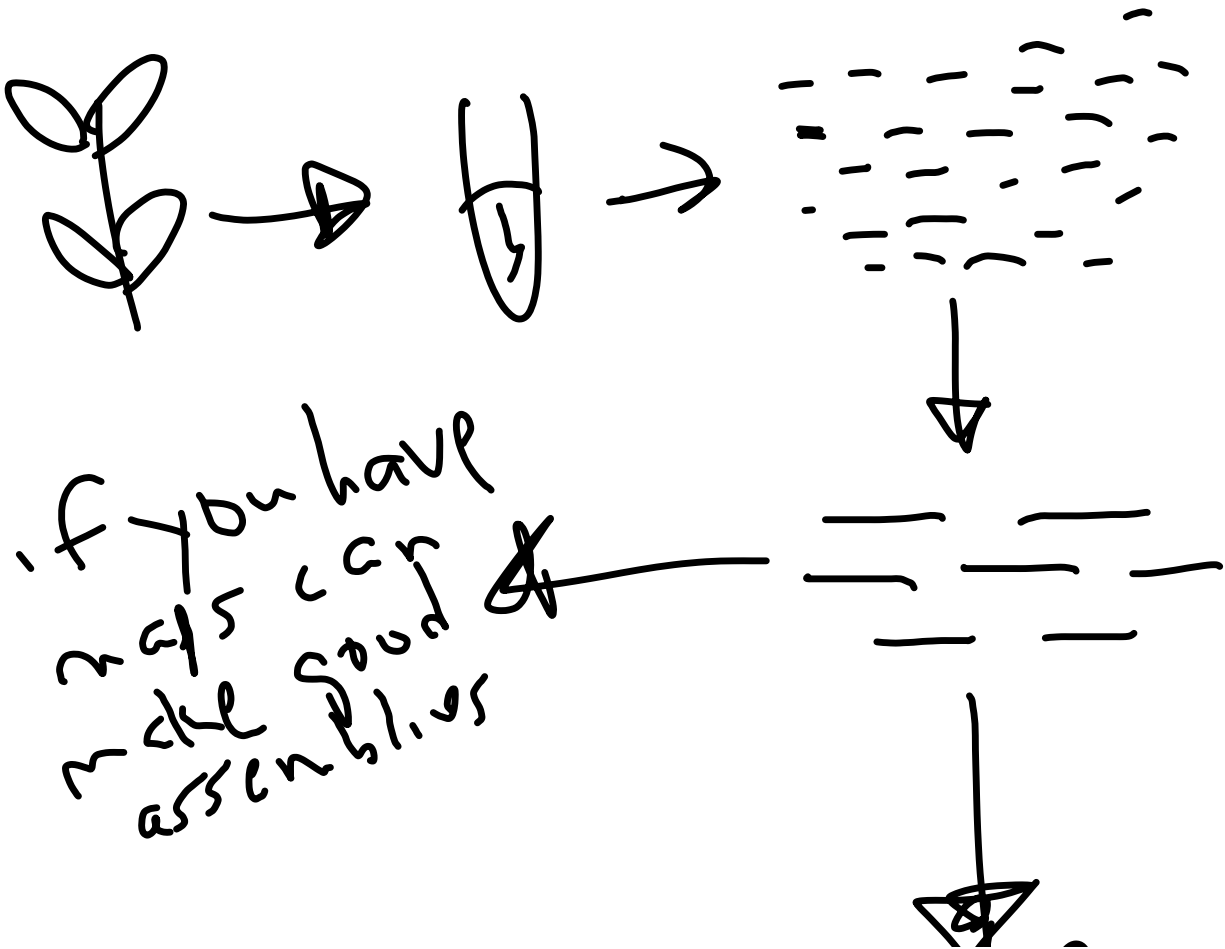


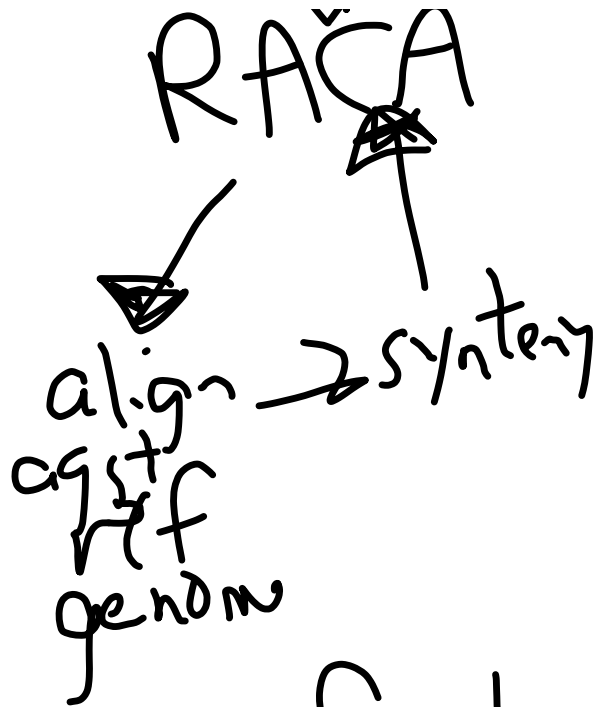
where are rearrangements taking place



Every genome sequence needs a good map



Reference  
assisted  
chromosome  
assembly



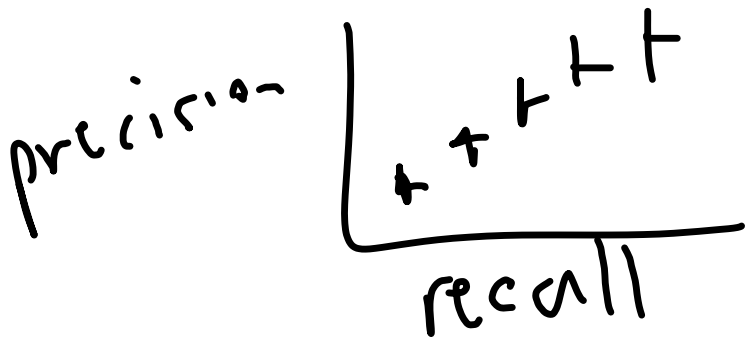
Key step in RACA is final ordering of scaffolds

1. Have to feed phylogeny to calculate prior for rearrangements

2. Look at all mate pairs to compute minimum path between any pair of scaffolds

...

3. Used evolver to simulate break points

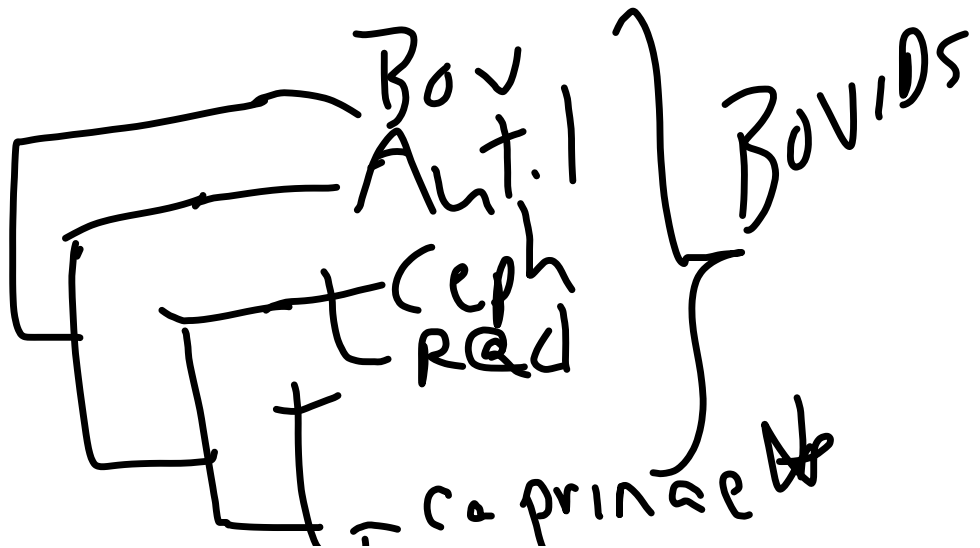


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Tibetan antelope / Chiru

\* 1,000,000 → 95,000  
↓  
b/c fur in demand

\* lives at up to 18K feet



NSO 2.76 mbp  
Total 2.5 Gbp

Aligned to cow  
- 30 chromosomes  
- aligned scaffolds = 2.59 Gbp

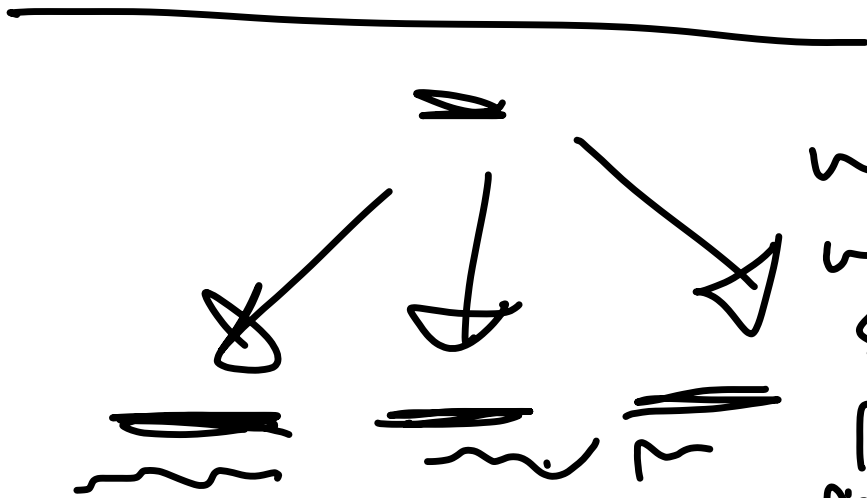
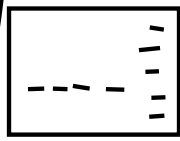
Visualization: Evolution  
highway



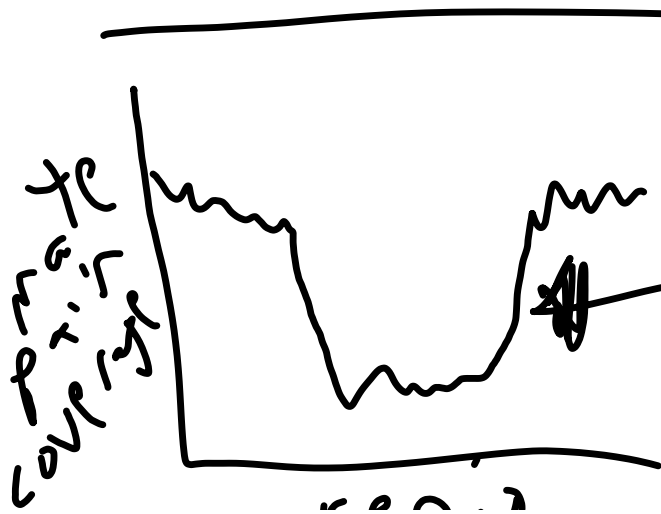
found new overlaps

Look for overlap

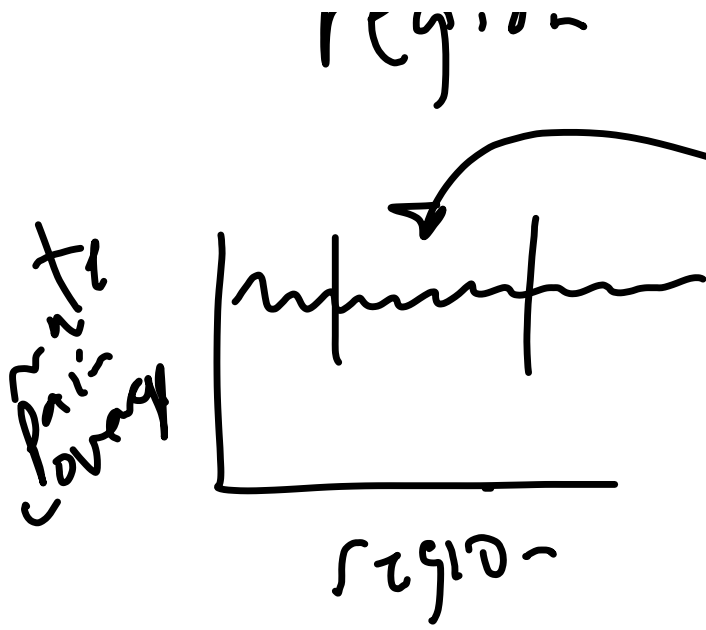
test w/  
PCR



what do  
when  
scaffold  
maps  
multiple  
chromosomes



likely due  
to assembly  
error

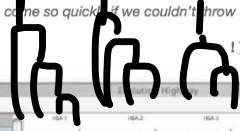


when there  
are real  
rearrangements  
you get random  
coverage

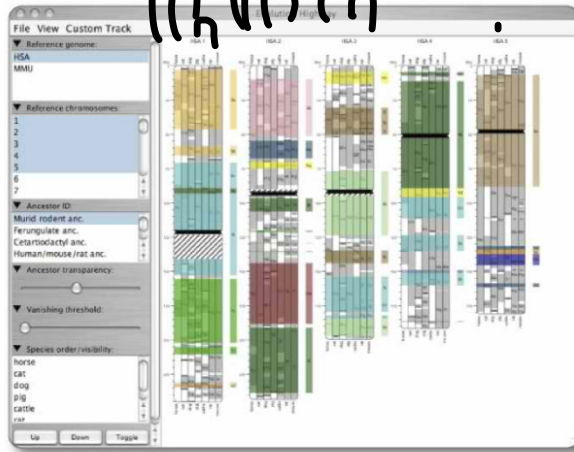
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Note - Evolution + highway  
should show  $\sqrt{t}$

insights wouldn't have come so quickly if we couldn't throw the data at this tool from NCSA."



This application requires the latest Java Plugin



[Genome Research](#)

- [Evolution Highway included in Visualization Research Challenges report](#)
- [Evolution Highway appears in Science](#)

#### Blogroll

- [Institute for Genomic Biology](#)
- [SyntenyTracker](#)

#### Tags

[chromosome](#) [genome](#) [mammalian](#)  
[visualization](#)

#### Archives

- [August 2009](#)
- [March 2009](#)
- [January 2006](#)
- [July 2005](#)

#### The Tool

Evolution Highway was developed to visualize the results of the mammalian genome comparative analysis. It started as a set of D2K components created to load, correlate and map chromosome and species data to a visual chromosome metaphor for comparative analysis. These were converted into Meandre components. It employs a zoomable user interface that allows the user to zoom in for detailed

Why?? chrom. evolve

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Special thanks to SKYPE!