M1D7: Phylogenetic Analysis!

3/6/13

And primer design challenge too!

Announcements

- Lab treat today!

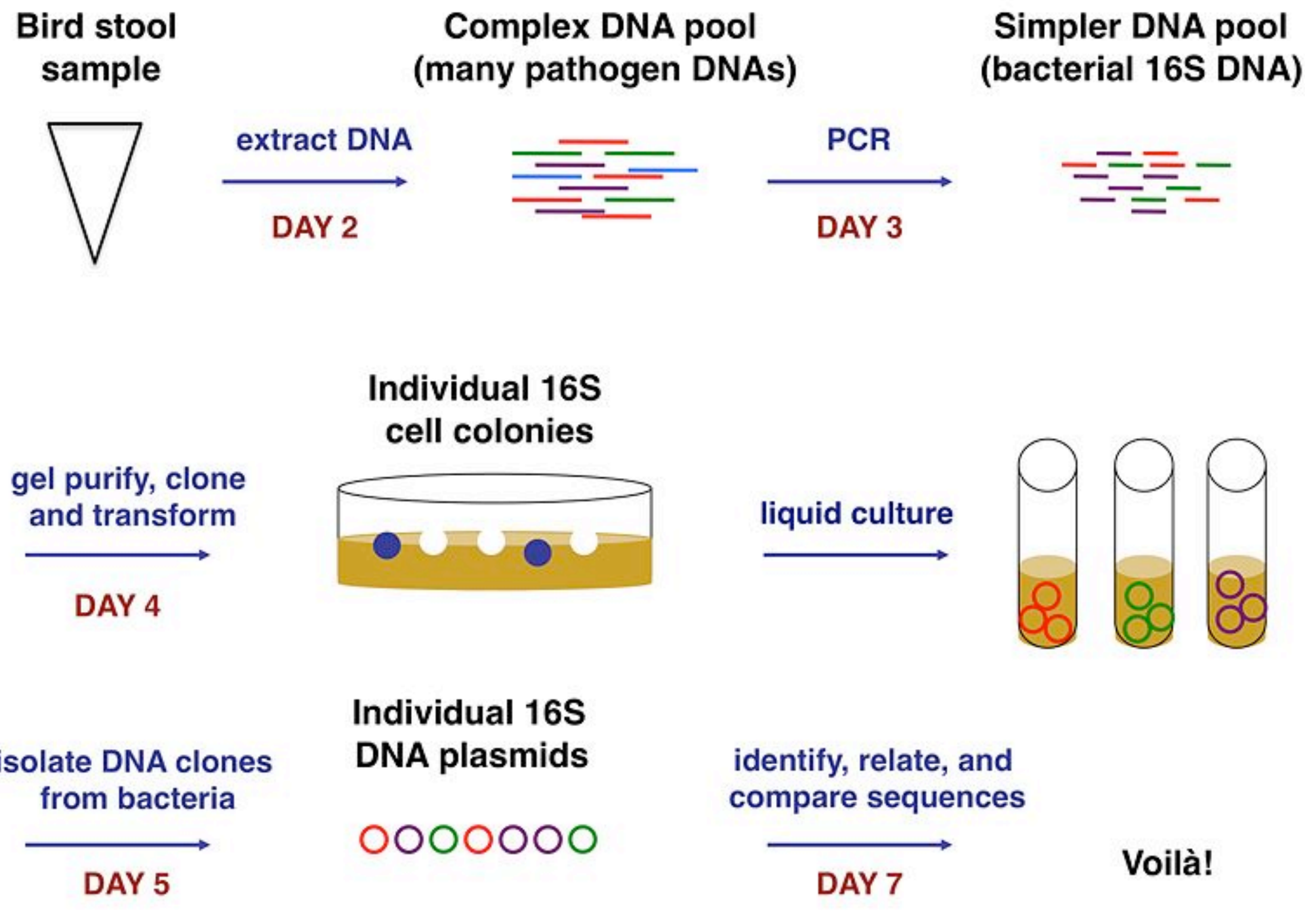
- Journal club next time: Meet in **16-336 at 1:20pm**

- Discussion of M1D5 FNT:
  schematic: great start! highlight unique elements and big picture
  results opening: nicely done! briefly recap motivation, specify samples
  results outline: sustain clear narrative, modulate detail
  figure: good work! review pre-lab notes as needed.
  figure text: good start. review scientific writing guidelines:
  motivation-complete interpretation-conclusion

BE Writing lab has opened its doors!

56-205, 7-9 pm, Sun-Thu (and by appt)
welcome event Monday in 32-124, 7-8 or 8-9 pm meet mentor

Bird Microbial Communities -- Experimental Overview



And now....Microsporidia Primer Design

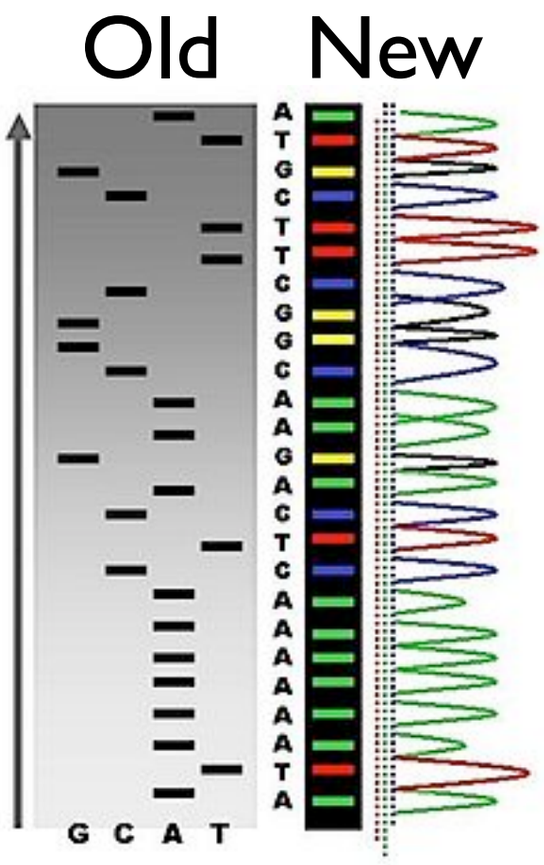
Lane	Sample (X µL)	Lane	Sample (Y µL)
1	Group 1, sample 1	6	V1-PMP2, sample 2
2	Group 1, sample 2	7	V1-PMP2, sample 3
3	Group 1, sample 3	8	Group 2, sample 1
4	DNA ladder (load 10 µL)	9	Group 2, sample 2
5	V1-PMP2, sample 1	10	Group 2, sample 2

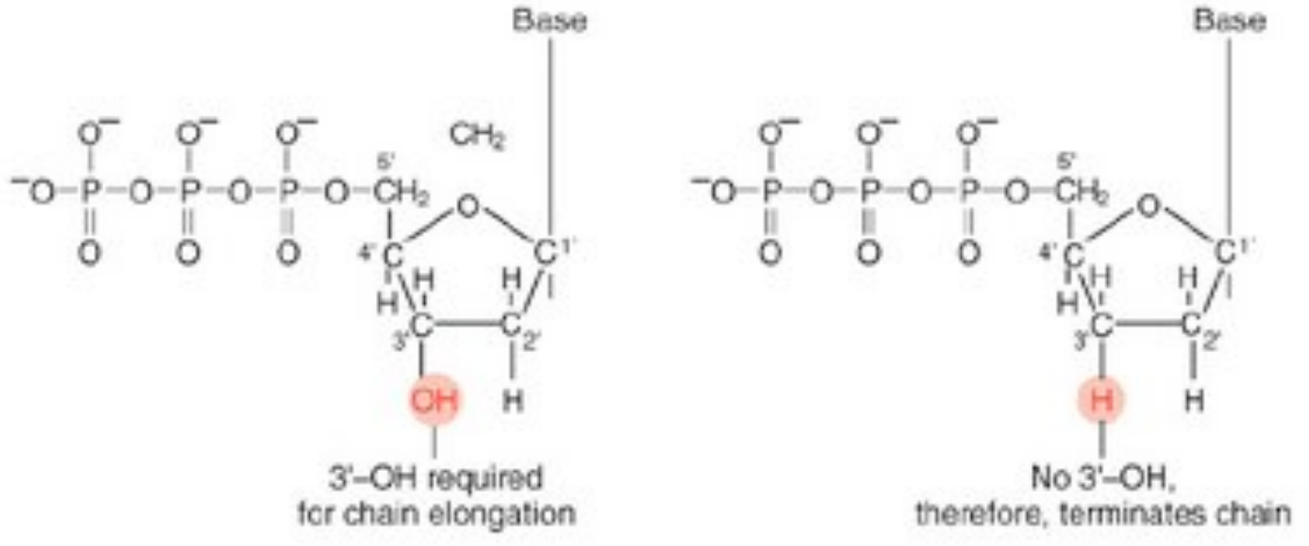
Gel number	Reference samples	Group 1	Group 2
T/R 1	Specificity (VC, EH, mixture)	Red	Orange
T/R 2	Specificity (VC, EH, mixture)	Blue	Purple
T/R 3	Sensitivity (VC: lo, mid, hi)	Yellow	Green
T/R 4	Sensitivity (VC: lo, mid, hi)	Pink	Plat runs W/F Red!
W/F 1	Specificity (VC, EH, mixture)	Orange	Green
W/F 2	Specificity (VC, EH, mixture)	Blue	Pink
W/F 3	Sensitivity (EH: lo, mid, hi)	Yellow	Purple
W/F 4	Sensitivity (EH: lo, mid, hi)	Platinum	Red runs T/R Platinum!

What Size??

Overview: Sanger Sequencing

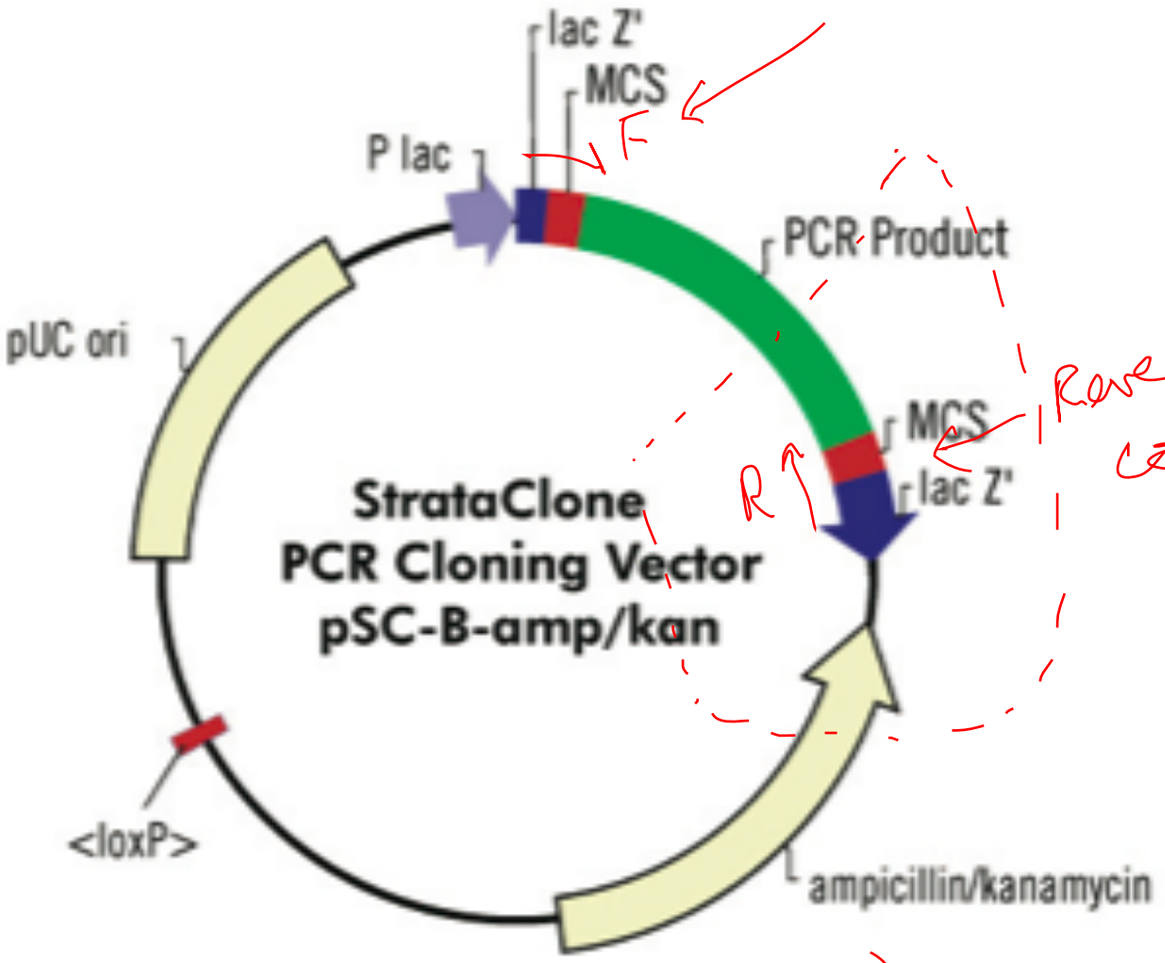
Four reactions run with one labeled di(dNTP) each:





'Chain terminating reaction'

Overview: Sanger Sequencing -- Insert Orientation



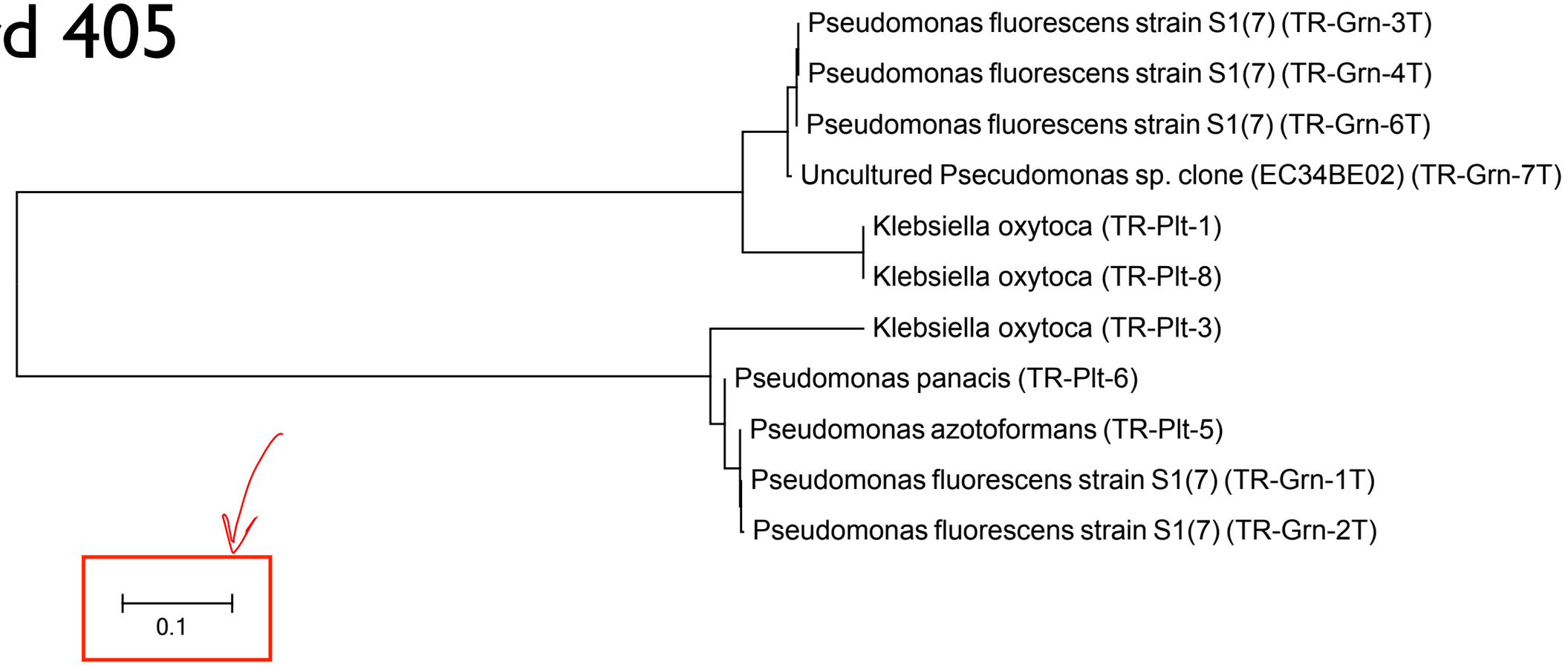
1) Think about tools you need.

2) Make a plan

3) Analyze! !!

Bird Microbial Communities -- Analysis

Bird 405



Infer evolutionary relationships based upon Sequence similarity (any metric?)

Today in lab:

1. Load microsporidia gels
   take careful look at PCR sample table and gel lanes!

2. Bird microbiome analysis: alone
   trim sequences
   identify closest species

3. Bird microbiome analysis: with ### partner
   align sequences for a given gull sample
   create a phylogenetic tree
   do with TR half of sample for now

4. Lots of file posting along the way!

Lab notebooks due today: