This Is the Welcome Talk

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About this course

- Modern biology faces a number of challenges.
- One of them is sane and appropriate integration of sequence data into biology.
- We would like to see if we can help you from that.
- Many “sub”challenges

Challenge #1:

Most biologists don't know much about computational science.

- Among many biologists, there is a general fear or skepticism of computers.

- This leads to shallow thinking about computational science.

Challenge #2:

Most computational scientists don't know much about biology.

- Extant computational solutions may not use appropriate heuristics, or default parameters.
- "It works on my data…", but their data != yours!
- Solutions/programs may not be couched in the right terms for the biology, or with proper appreciation for biological complexity.

Challenge #3:

Both biology and computational science are deep, complex fields of study, inhabited by extremely smart people!

- None of this is easy, on any side of things.
- If it were easy, they wouldn't need people as smart as all of us to do it, right??
- A two week course can't possible teach you everything.

Challenge #4:

Sequencing technology is changing very fast.

- We don't understand its limitations or biases very well.
- The software and compute infrastructure lags behind volume of data, type of data.

The opportunity:

- The sequence is here.
- "In the land of the blind, the one eyed is king." -- those prepared to *think* about how to use sequencing technology to answer their question will have a substantial leg up.
- Who knows? Some of you might even like this mix!

Our goals

- Provide a "safe place" to experiment.
- Lots and lots of help (in the form of TAs)
- Provide lots of data sets, tools, scripts.
- Research specific help?

Our requirements of you

- Nothing.
- This is a requirements free zone.
- You can safely skip the entire course…

Our expectations

- Questions!
- Ask for help when you need it!
- A certain amount of tolerance may be needed, by you of us…

Our hopes

- Enthusiasm!
- Engagement!

Daily schedule (tentative)

- 9am – lecture
- 10:30am – tutorial 1
- 12-1pm - lunch
- 1:15pm – tutorial 2
- 3pm – free time!
- 5-6:30 - dinner
- 7pm – tutorial/lecture

Weekly schedule – tentative wk1

- Tuesday – BLAST, cloud computing, scripting
- Wed – mapping
- Thursday – assembly
- Friday & Saturday -- miscellany

Dramatis personae

- Titus Brown (that's me)
- Ian Dworkin -- co-instructor
- Istvan Albert – co-instructor

- Adina Howe -- cruise director
- Jiarong Guo – TA
- Likit Preeyanon– TA
- Qingpeng Zhang –TA

- Jordan Hindenach -- go-fer.

“Cruise director”?

Written rules

- No night-swimming without a buddy.

Unwritten rules

For this afternoon...

- Get connected to the network!
- Make sure you have an EC2 account. Hint: if you didn't get a phone call, you don't.
- I will go through an initial tutorial.