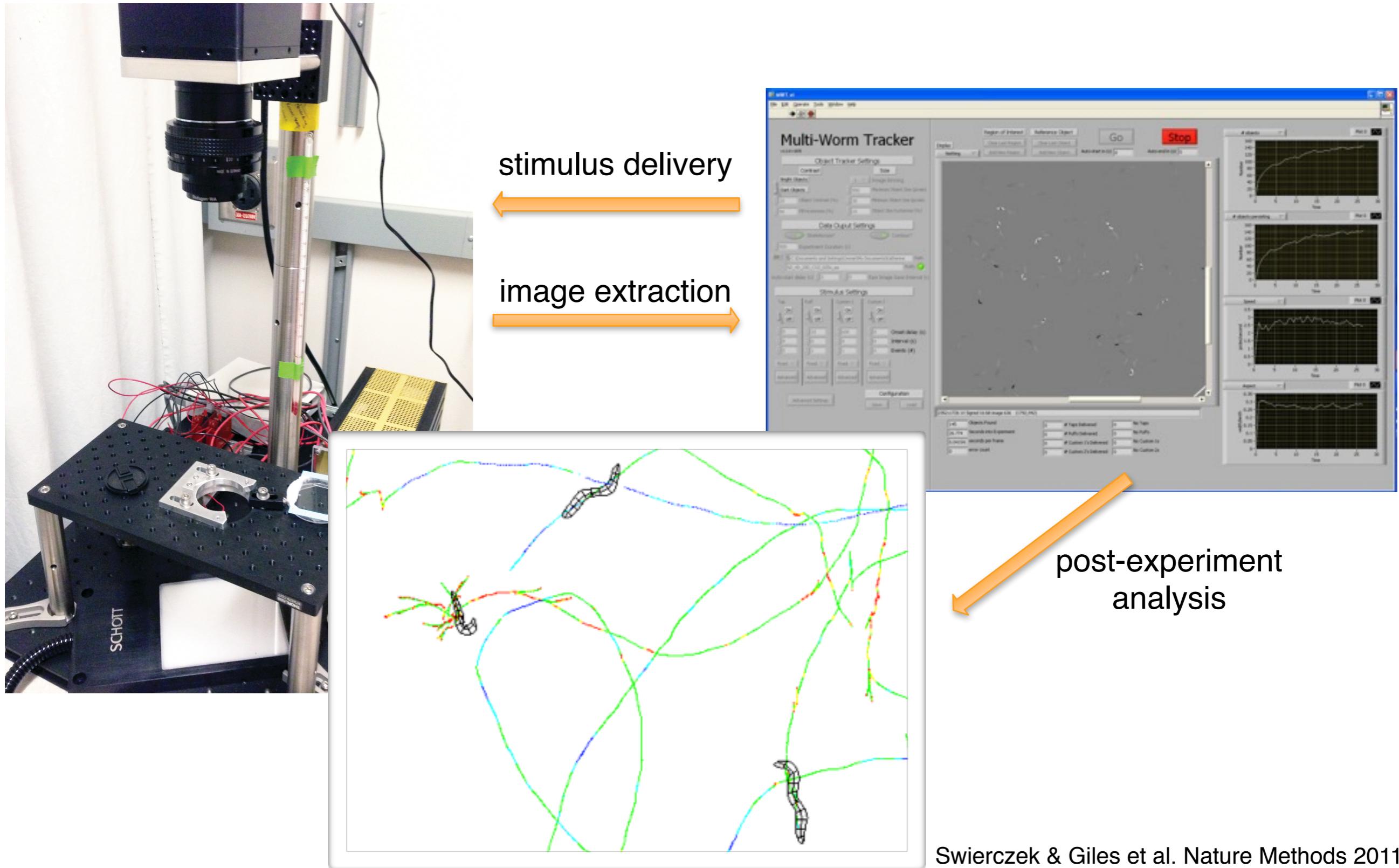
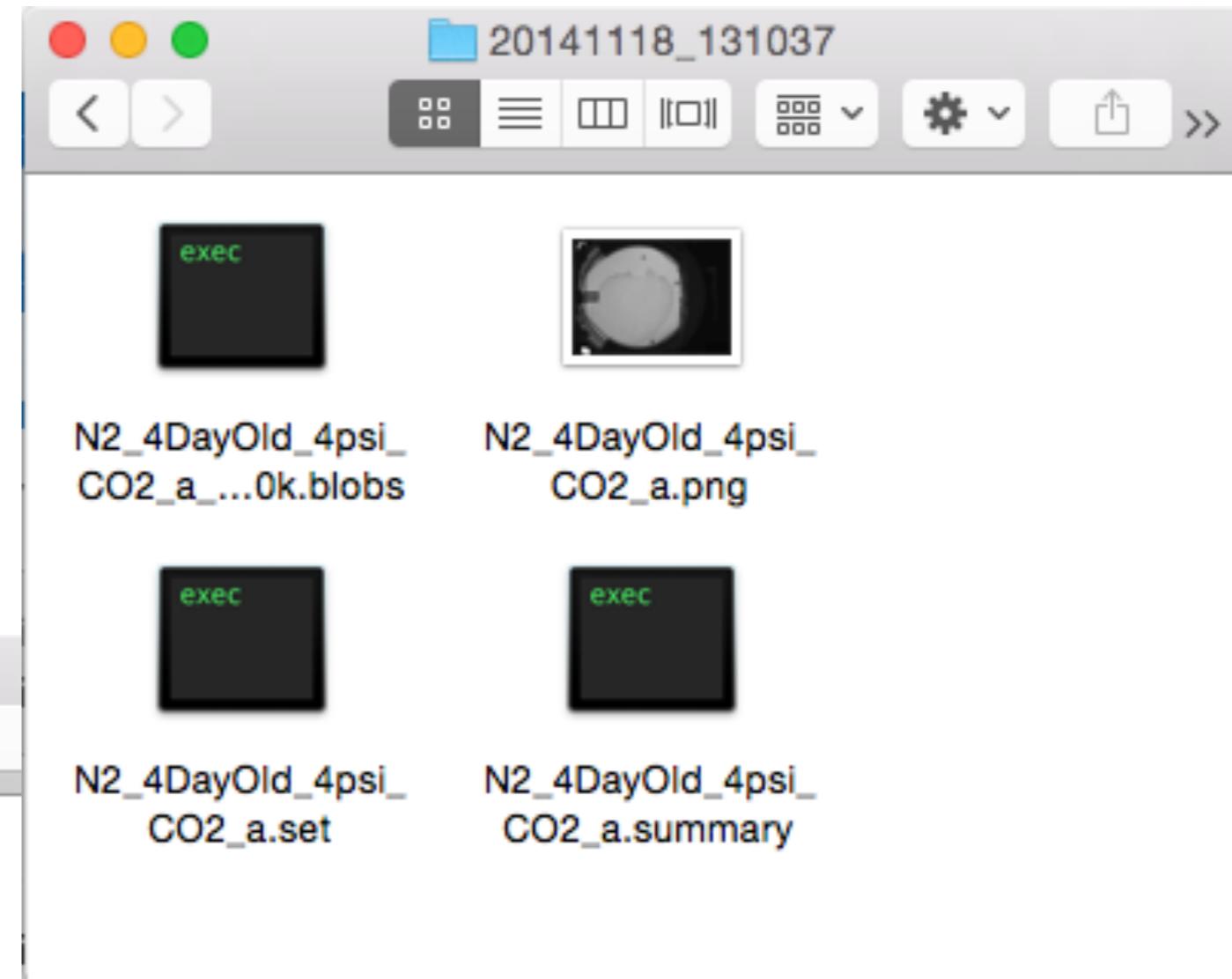
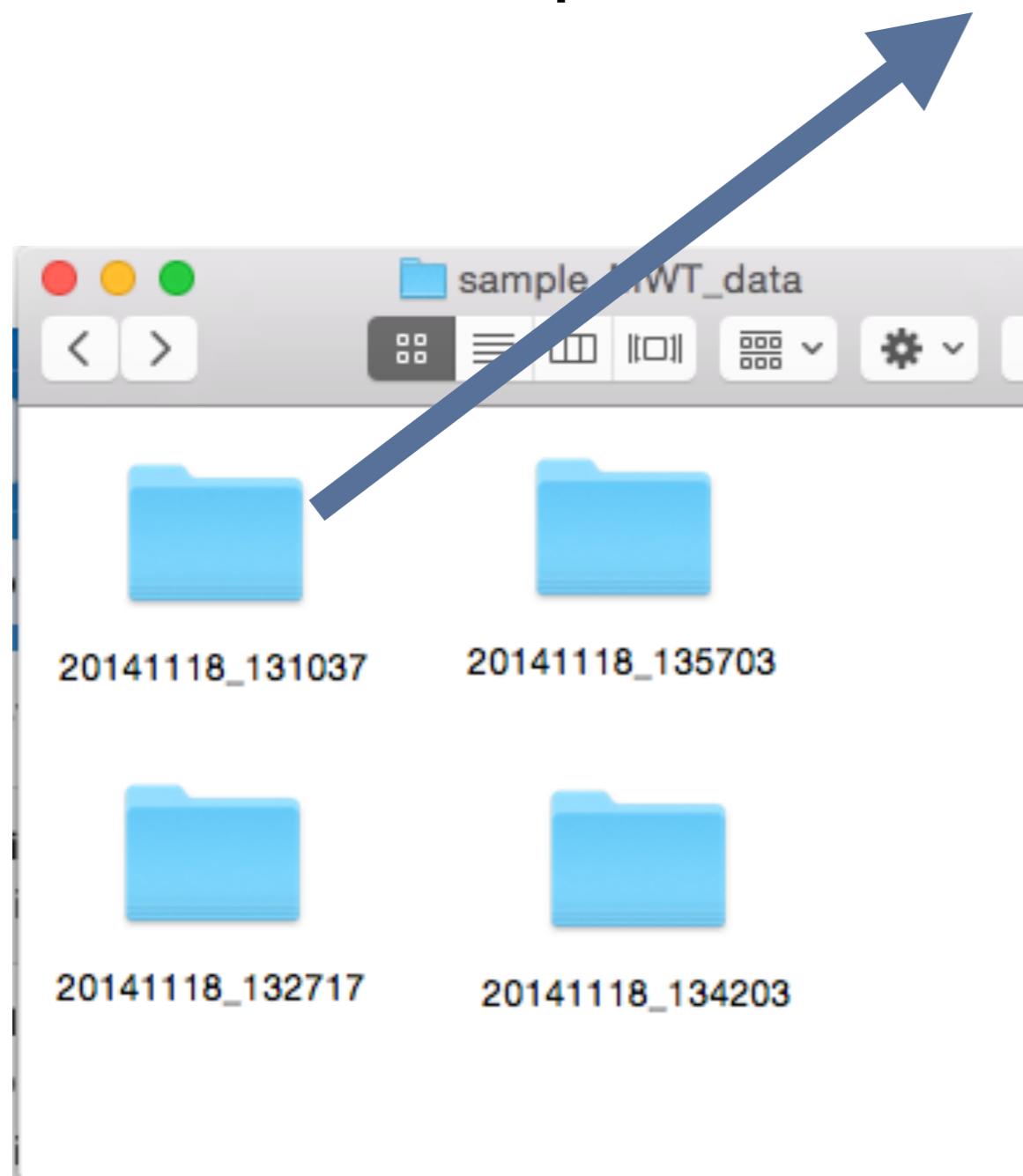


High-content behavioural and morphological phenotyping using the Multi-Worm Tracker



Multi-Worm Tracker raw output



efficiently stored!

But not readable
by humans :(

Choreography (Chore.jar) lets us read the data and reconstruct “cartoons” of the experiments



```
Tiffanys-MacBook-Pro:sample_MWT_data tiffany$ java -jar /Users/tiffany/Desktop/Chore.jar -o s /Users/tiffany/Desktop/sample_MWT_data/20141118_131037
```

We call Choreography from the Shell

Choreography writes our data to a .dat file:

```
java -jar /Users/tiffany/Desktop/Chore.jar --output speed,midline,  
morphwidth /Users/tiffany/Desktop/sample_MWT_data/20141118_131037
```

and can make simple graphs:

```
java -jar /Users/tiffany/Desktop/Chore.jar --output speed,midline,  
morphwidth /Users/tiffany/Desktop/sample_MWT_data/20141118_131037  
--graph
```

and can reconstruct the experiment as a cartoon:

```
java -jar /Users/tiffany/Desktop/Chore.jar --output speed,midline,  
morphwidth /Users/tiffany/Desktop/sample_MWT_data/20141118_131037  
--map
```

T	File Path ▾ : ~/Desktop/sample_MWT_data/20141118_131037/N2_4DayOld_4psi_CO2_a.dat
1	0.021 0.0000
2	0.046 0.0000
3	0.085 0.0000
4	0.125 0.0000
5	0.184 0.0000
6	0.203 0.0000
7	0.247 0.0000
8	0.287 0.0000
9	0.327 0.0000
10	0.367 0.0000
11	0.406 0.0773
12	0.447 0.0610
13	0.487 0.0579
14	0.528 0.0569
15	0.568 0.0390
16	0.608 0.0530
17	0.647 0.0545
18	0.689 0.0528
19	0.729 0.0534
20	0.770 0.0489
21	0.809 0.0490
22	0.848 0.0623
23	0.891 0.0640
24	0.932 0.0666
25	0.972 0.0743
26	1.011 0.0732
27	1.049 0.0727
28	1.093 0.0726
29	1.132 0.0724
30	1.172 0.0714
31	1.212 0.0718
32	1.251 0.0716
33	1.293 0.0696
34	1.333 0.0695
35	1.373 0.0696
36	1.413 0.0695
37	1.452 0.0694
38	1.492 0.0697
39	1.534 0.0708
40	1.574 0.0706
41	1.614 0.0664

The .dat files Choreography writes can be for a single worm or an average of the plate.

Either way, you get a row for each frame captured by the camera.

At ~ 25 frames/sec for a 300 sec experiment, that is 7500 values for each measure (e.g. speed) for each sample.

So we write scripts to automate this analysis, but we, as a human, have to choose what we want to plot and compare for statistical analysis.