

PBGG/CRSS/PBIO/HORT 8871: Genome Analysis and Comparative Genomics

Introduction:

This 1-credit hour course introduces graduate students to the methodologies used in genetic mapping, genome analyses and comparative genomics. The material is presented as formal lectures and is enhanced by hands-on mapping exercises. You will learn how to construct a genetic map, conduct comparative analysis at the map and DNA sequence level, and become conversant with the cutting-edge technologies that exist in genome analysis. Some key papers related to markers/genetic mapping will be discussed.

All academic work must meet the standards contained in 'A Culture of Honesty'. Students are responsible for informing themselves about those standards before performing any academic work. The link to more detailed information about academic honesty can be found at: <http://www.uga.edu/ovpi/honesty/acadhon.htm>.

Instructor:

Katrien M. Devos

Office: Miller Plant Sciences Bldg. Rm. 4107

Phone: 542-0925

Email: kdevos@uga.edu

Office hours:

Drop-in's will be accommodated whenever possible, but better to make an appointment.

Miscellaneous:

When: Spring 2020, February 6th – March 17th

Class times: Tuesdays and Thursdays from 2 pm – 3.15 pm

Where: Miller Plant Sciences Rm. 1203

Grading:

A-F

50% on class/home work

50% on final exam (take-home only or mix of in-class/take-home)

Tentative schedule

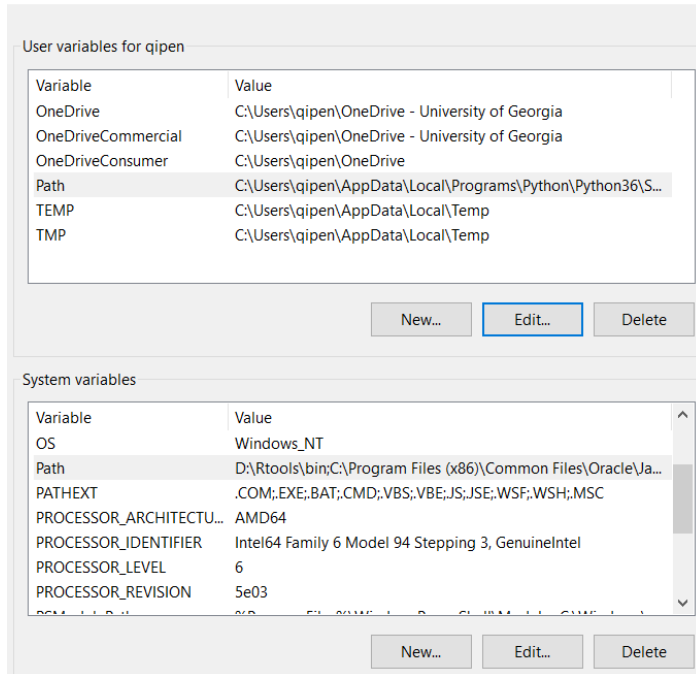
Thu 6 th February:	Markers: Lecture
Tue 11 th February:	Markers (cont.): Lecture
Thu 13 th February:	Markers (cont.); Lecture
Tue 18 th February:	Mapping: Lecture
Thu 20 th February:	Mapping: Lecture
Tue 25 th February:	Paper discussion
Thu 27 th February:	Genetic mapping: Exercise
Tue 3 rd March :	Genetic mapping: Exercise
Thu 5 th March:	From Trait to Gene
Tue 10 th March:	Spring Break
Thu 12 th March:	Spring Break
Tue 17 th March:	Discussion of mapping issues/paper

For Mapmaker practice:

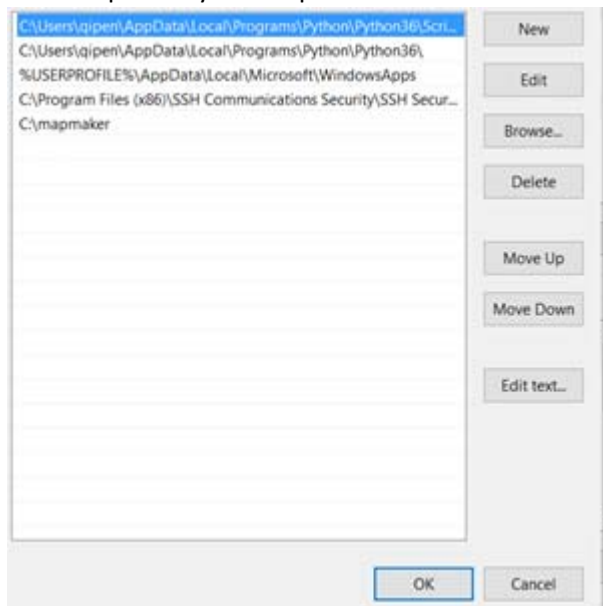
Go to <http://research.franklin.uga.edu/devoslab/scripts-used-genetic-mapping> and download mapmaker by clicking on 'MAPMAKER'

Mapmaker setup (Windows OS only)

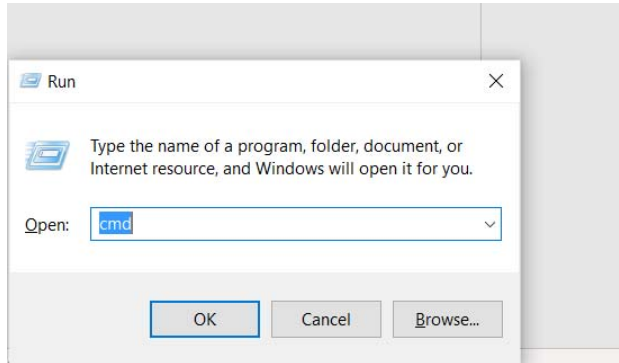
1. Right click windows symbol, click "System"
2. Click "system info" on the right side
3. Click "Advanced system settings"
4. Click "Environment variables"
5. Click "PATH" under 'user variables', and choose "edit"



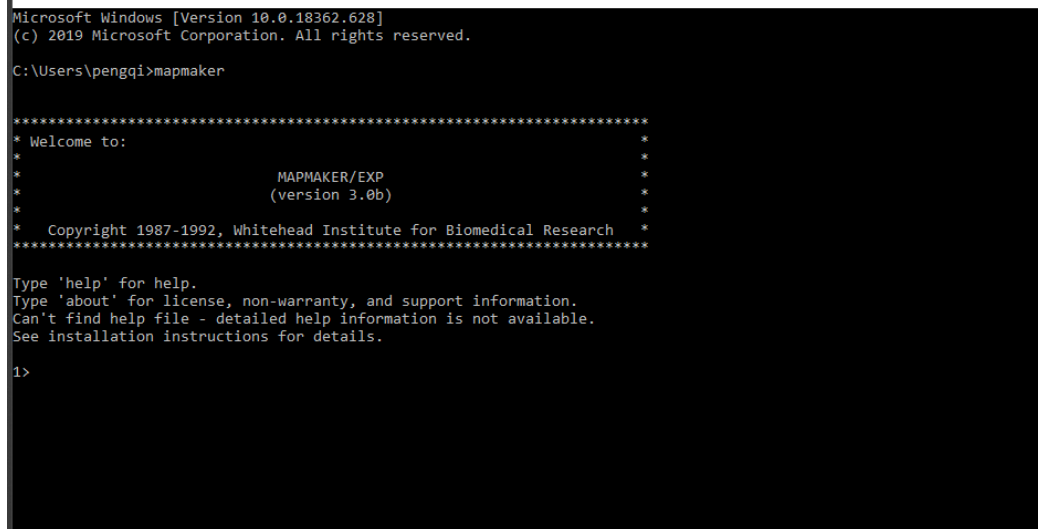
6. Add the pathway to "mapmaker" into the PATH



7. Click "PATH" under 'system variables', and choose "edit", then add "mapmaker" into the PATH
8. Restart the computer
9. Press windows symbol + R, and type "cmd"



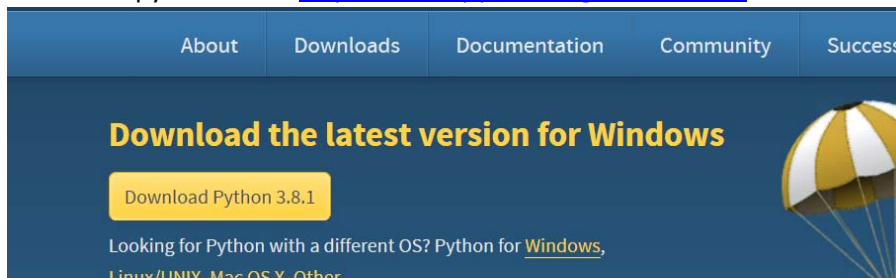
10. Type "mapmaker", mapmaker should start run.



Python installation

The script only works with Python ver 3 or higher, please DONOT use Python ver 2.7 or lower.

1. Download python from: <https://www.python.org/downloads/>



2. Install the python.

If you have python ver2.7 or lower in your computer, please disable it.