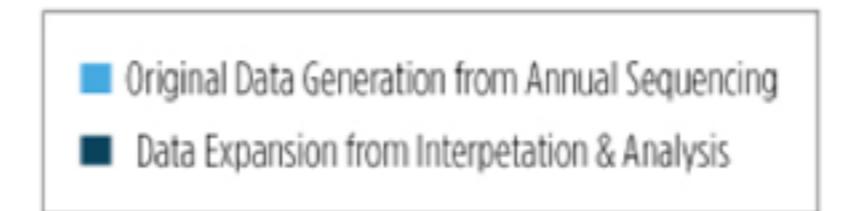


Intro to R and Bioinformatics

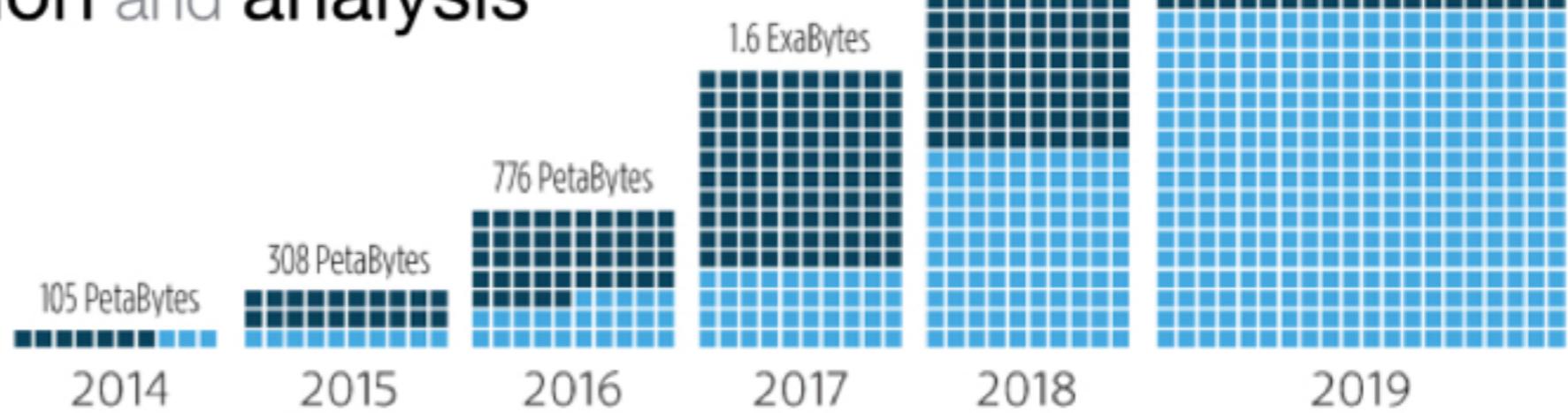
**Christina Azodi & Beth Moore
REU Workshop
June 30, 2018**

BioInformatics is a **Big Data** Problem

“Clearly, we’re dealing with a **data deluge** in genomics...



The **challenge** lies in
interpretation and analysis



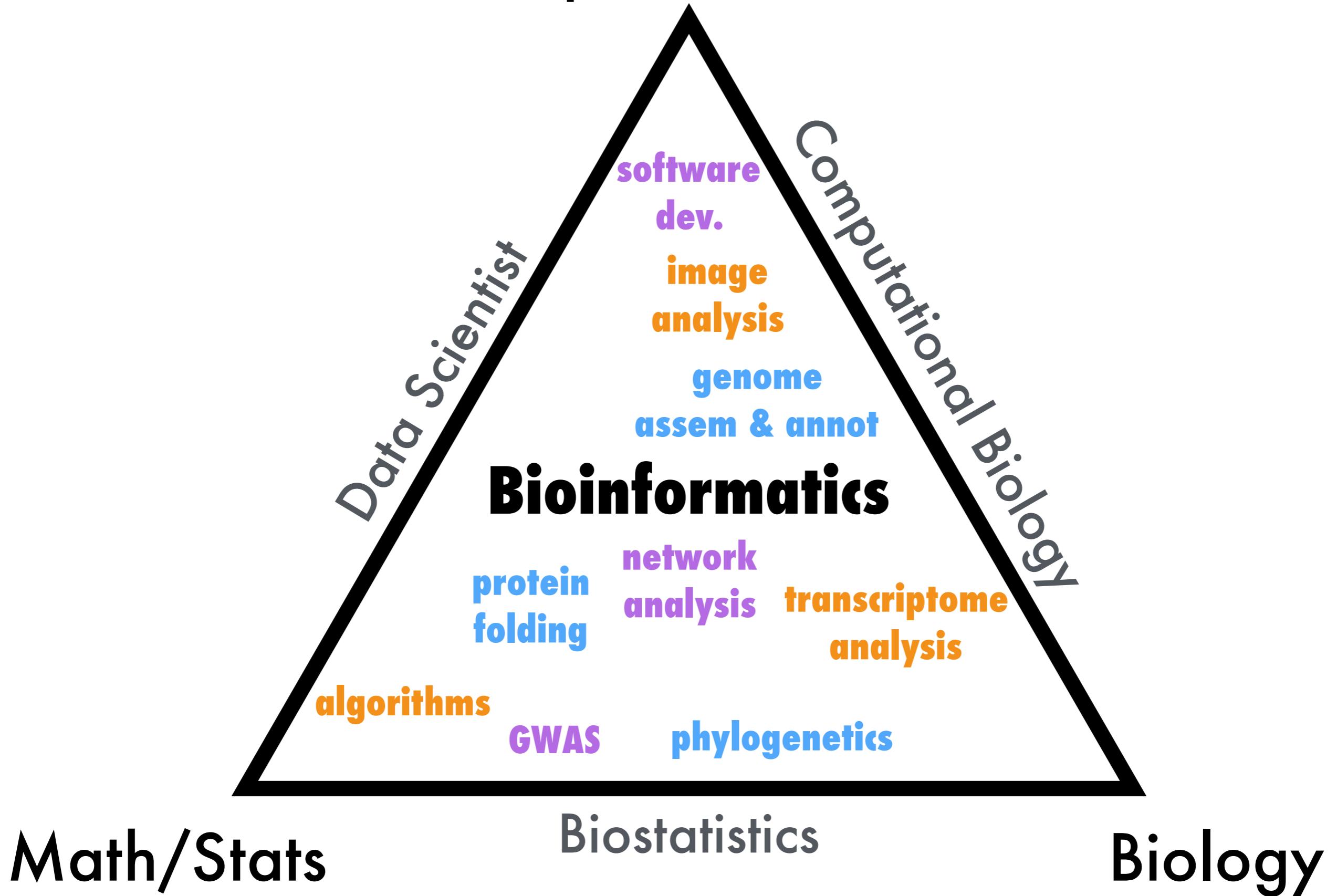
Source: Onramp BioInformatics 2014, Transparency Market Research Sept 2014

Onramp BioInformatics

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Source: Onramp BioInformatics 2014, Transparency Market Research Sept 2014

Computer Science



Gene Network Analysis

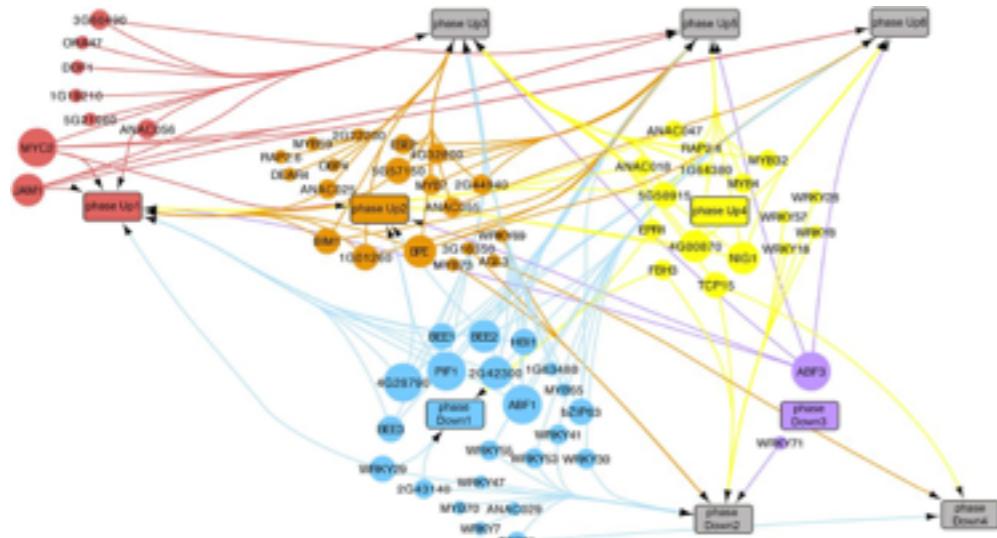
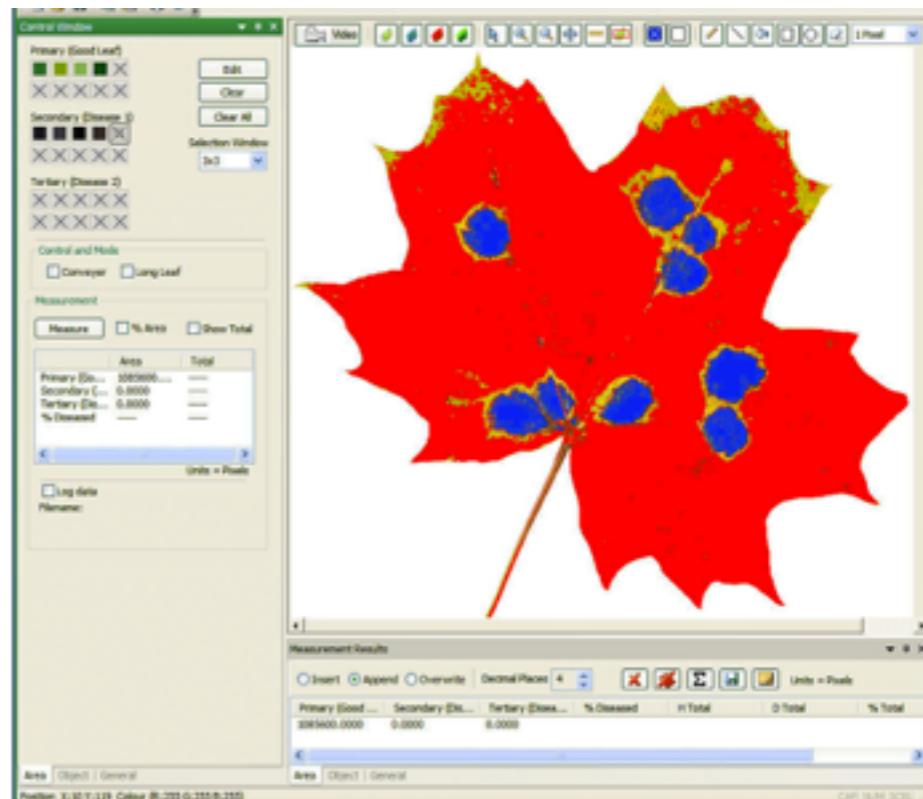
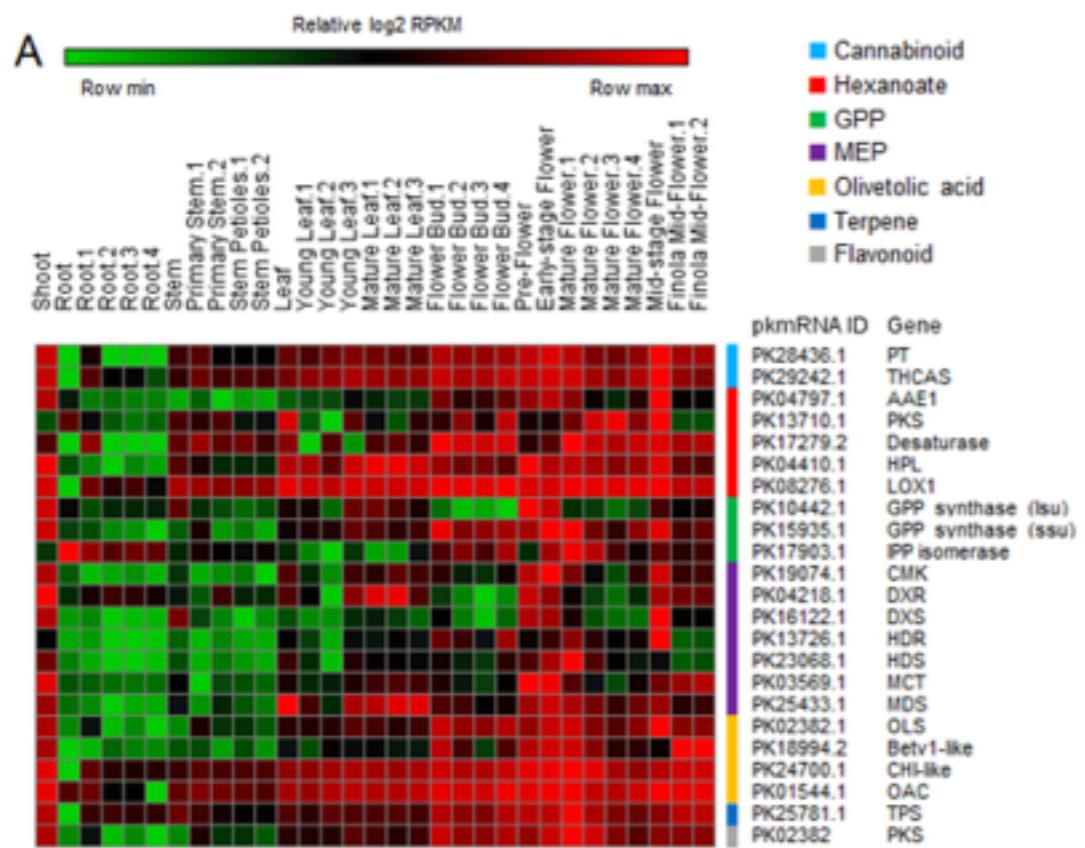


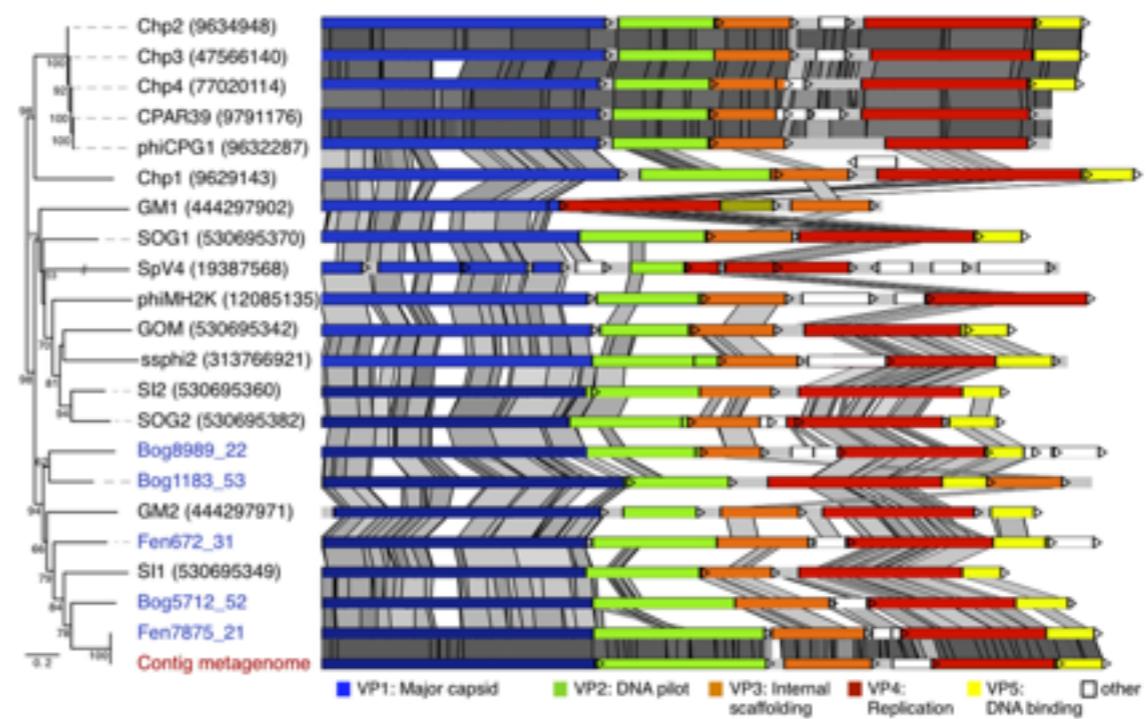
Image analysis



Gene Expression Analysis



Comparative Genomics



Today's Workshop

Basics of programming in R

Using R to do statistics

Gene Expression Analysis

Making Figures

How can I learn more?

Take classes at your University

Intro to programming (python, R)

Bioinformatics / Genomics

Algorithms & data structures

Statistics, linear algebra, etc.

Take online classes

Data Science and Bioinformatics Specializations available through Coursera (~\$50 a month)

Free courses through Udacity: Intro to Data Analysis, Machine learning, Statistics, etc.

Software carpentry (<https://software-carpentry.org/>)

Yes you can!

Know that coding is scary to many biologists

Be creative

Learn to fail fast and fail often