

BINF6399 - Principles of Team Science

Course Introduction



UNC CHARLOTTE

**Richard Allen White III, PhD
RAW Lab**

Lecture 1 - Thursday Jan 21st, 2021

Learning Objectives

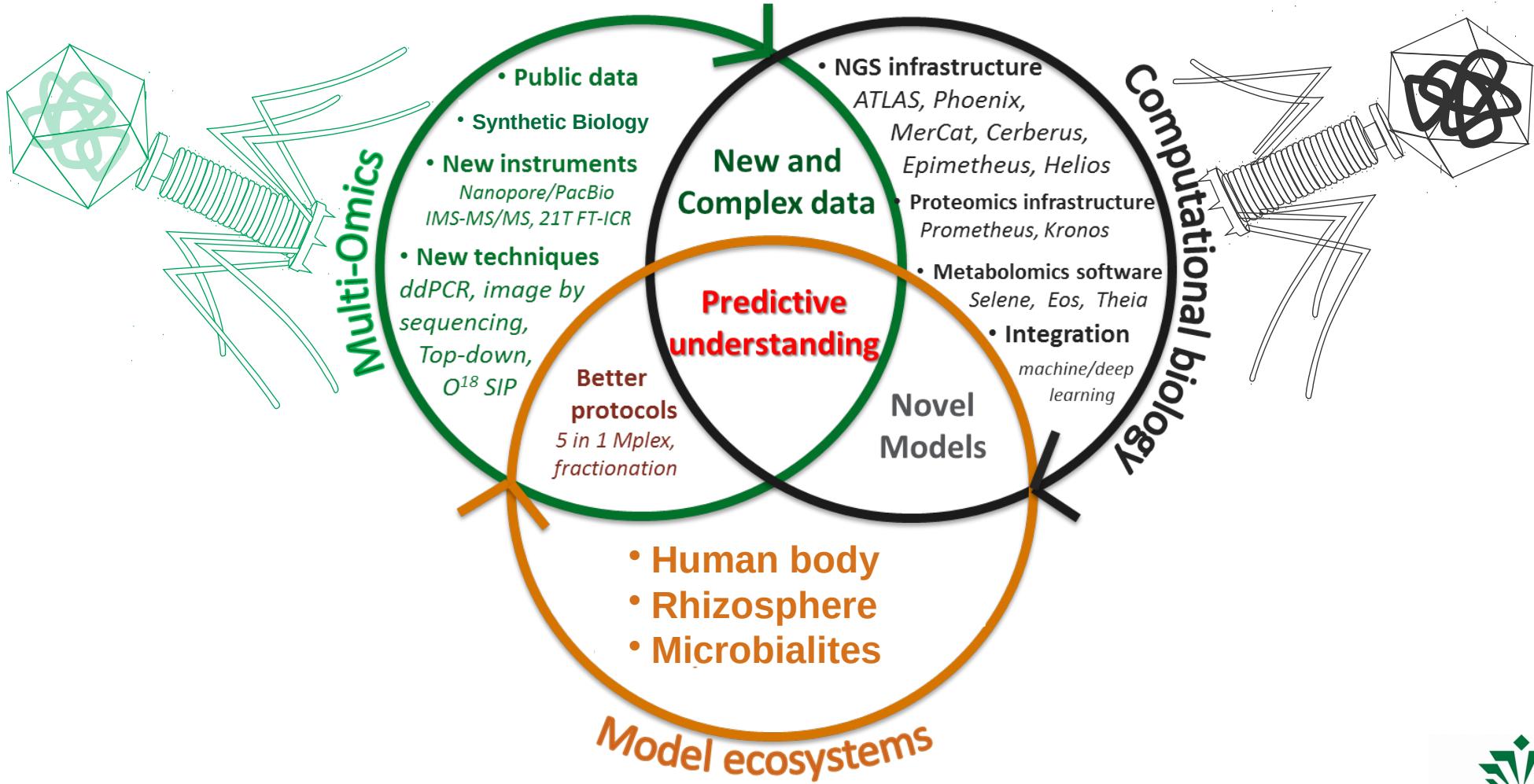
- Introduce Dr. White III and his RAW lab research
- Go through the Syllabus on Canvas
- Calendar and Schedule
- Team formation and topic ideas
- Introduce github page/Git tutorial/refresher

RAW LAB

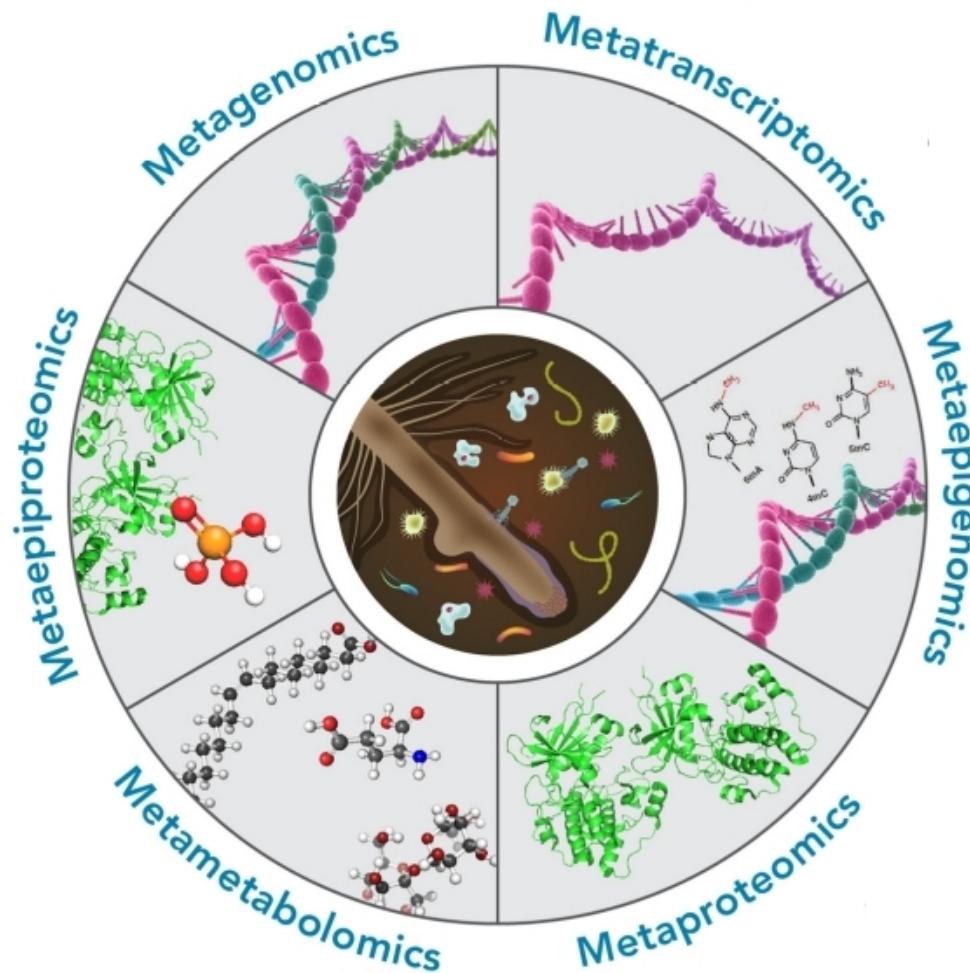
Understanding the totality of the virome - from farm to gut

- Viral lifestyle influencing microbial-host interactions
 - Phages as therapies for human viruses
 - Phage therapy for antibiotic resistant microbes
- > Check us at www.rawlab.org

RAW LAB - Group Model



RAW LAB – Omics terms (Wheel O' omics)



White III et al., 2017 Rhizosphere

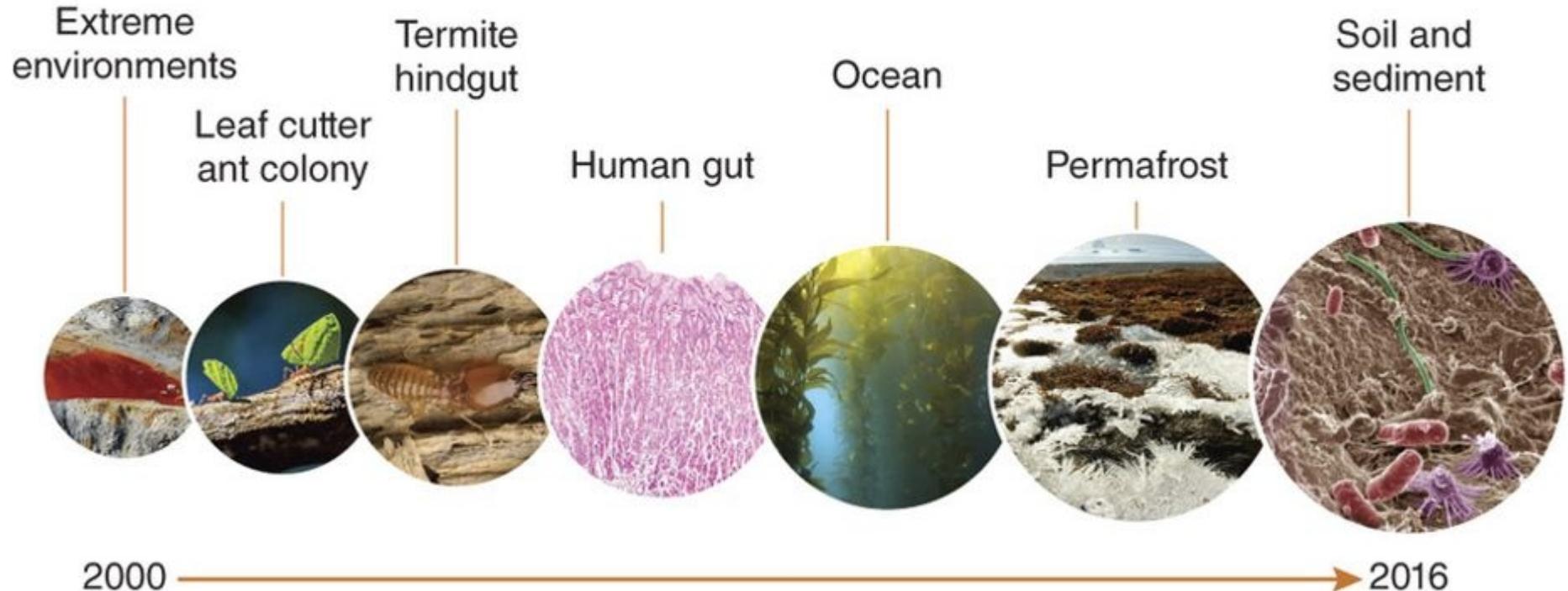
Link to article: <https://www.sciencedirect.com/science/article/pii/S2452219817300666#f0015>



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RAW LAB - microbiomes

Microbiome complexity and multi-omics analysis timeline



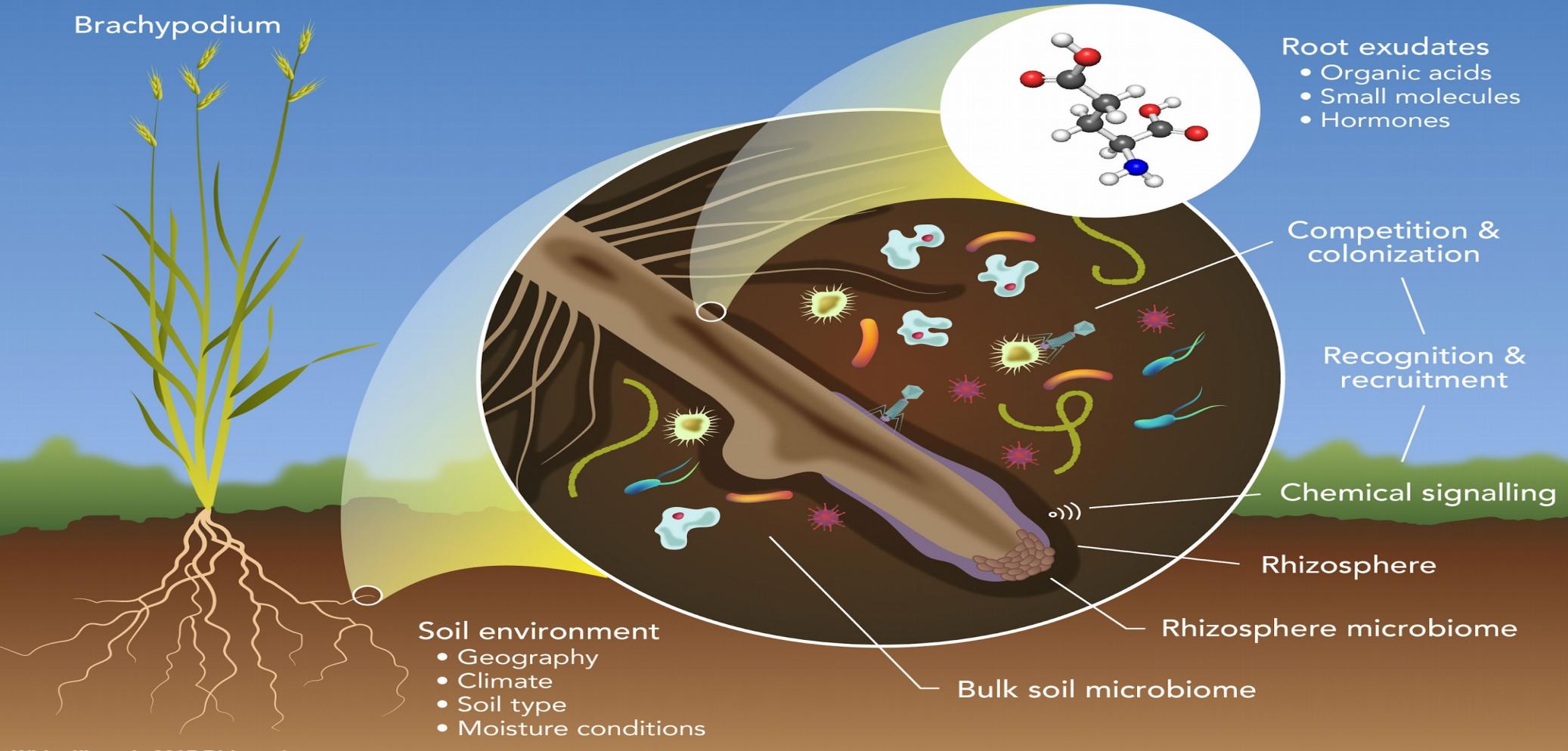
White III et al., 2016. Nature Protocols

Link to article :<https://www.nature.com/articles/nprot.2016.148>

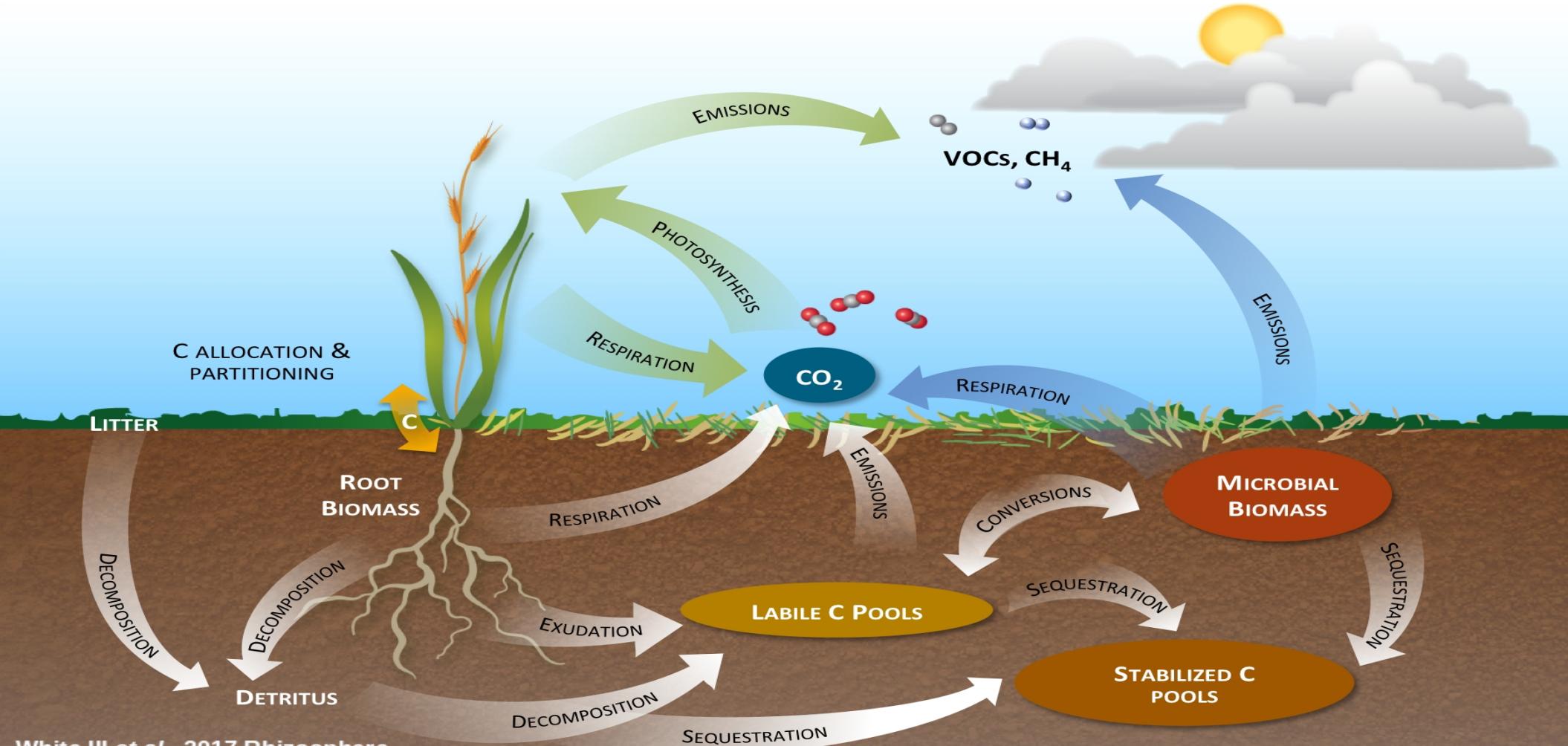


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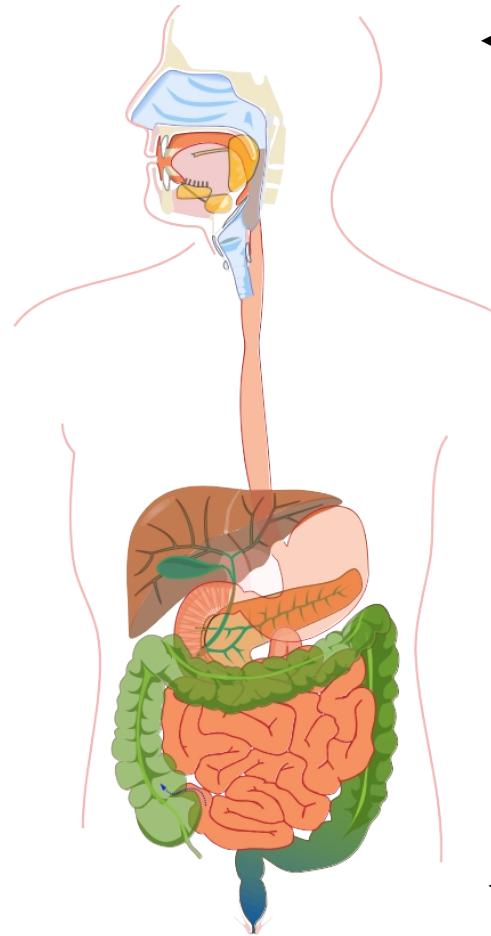
RAW LAB - Rhizosphere impacting carbon cycling



RAW LAB - Rhizosphere impacting carbon cycling



RAW LAB - Human microbiome and virome



100 Trillion

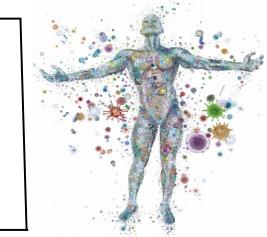
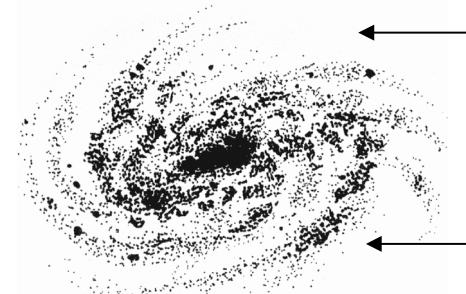
150:1 genes

5:1 viruses

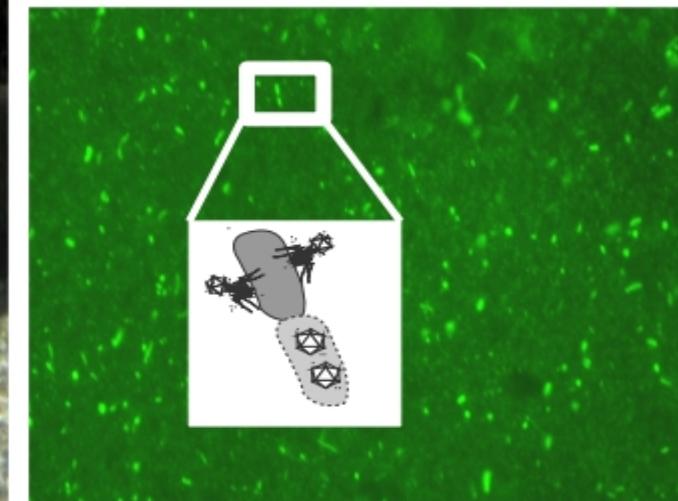
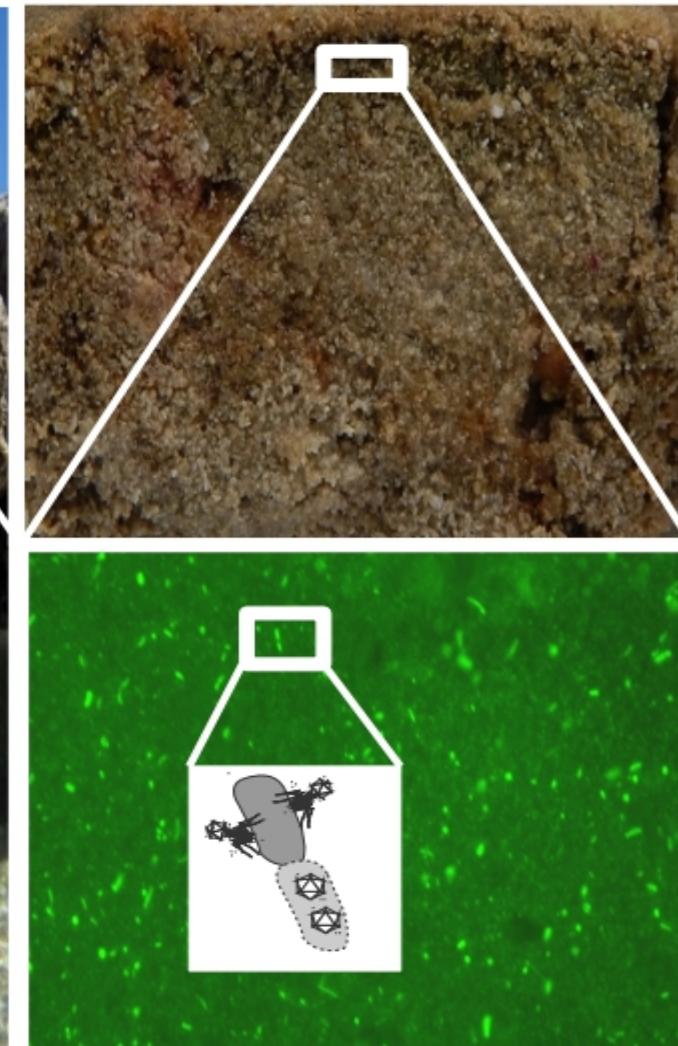
1.3x cells



2.5x
12.5x



RAW LAB - Modern microbialites/stromatolites



Syllabus – essential course details

- Meeting time T/TH 4:00-5:15 pm
- Office hours T/TH 5:15-6:15 pm
- Online until Feb 22nd
- Hybrid after Feb 23rd (In-class Tuesday, online Thursday)
- Canvas (ZOOM logins in Announcements)
- No Slack
- Course github page (<https://github.com/raw-lab/BINF6399>)

Syllabus: Course introduction - ‘Start-up experience’



Syllabus: Course introduction - Teams

- Teams of three (3)
- One CEO (Chief Executive Officer - the prominent leader of the team)
- One CTO (Chief Technology/Technical Officer - leads all technology development)
 - Reports to CEO
- One CFO (Chief Financial Officer - leads all sales and outreach for the project)
 - Reports to CEO
- All team members are responsible for specifications, deliverables, timelines, and work required to reach overall team goals

Syllabus: Deliverables for the course

- Product, service, tool related to bioinformatics, genomics, or computation
- Team name
- Team logo
- Team Github page
- Team formation structure (For-profit vs. Non-profit)
- Team formation documents
- Team corporate structure assignment (CEO, CTO, CFO assignment)
- 3 Pre-read documents (Pre, mid and final), submitted 48 h before the oral presentation
- 3 Oral presentations (Preliminary, Mid-term, final)
- 13 Customer discovery interview reports (~1 per week)

Syllabus: Grading

Grading rubric

Pre-read 1 - 50 pts

Oral pitch 1 - 50 pts

Pre-read 2 - 50 pts

Oral pitch 2 - 50 pts

Pre-read 3 - 50 pts

Oral pitch 3 - 50 pts

Customer Discovery documents - 130 pts

(10 pts each)

Formation documents - 35 pts

Github page - 35 pts

Total points - 500

Any grade in-between will be rounded to the next highest grade.

While grades are important, and you should strive to get the highest marks. The knowledge you take with you and gain will last a lifetime!!

Based on points for grading

500 - 450 pts (100-90%) = A

445 - 400 pts (89-80%) = B

395 - 350 pts (79-70%) = C

<345 (<69%) = U

Syllabus: Sections Diversity, Mental health, Title IX

- Please read: An environment of non-discrimination and diversity section
- Please read: Mental healthcare and positive self-care
- Please read: Title XI reporting of sexual harassment or other related reporting
- Please read: Disability accommodations
- Please read: COVID-19 policies
- Please read: ZOOM online format

ANY Questions?

Syllabus: Course Schedule

Week of	Lecture Topic	Due dates (Thursday)
Jan 19th	Introduction to the course	
Jan 26th	Team Building 101	Team formation + Topic ideas
Feb 2nd	Spring break - no classes	
Feb 9th	Customer Discovery 101/Product Dev	Team formation documents
Feb 16th	Preliminary Oral presentations	Pre-read/Oral pitch 1
Feb 23rd	Managing Research Teams	
March 2nd	Conflict Management	
March 9th	Finding Funding in Science	
March 16th	Mid-term Oral presentations	Pre-read/Oral pitch 2
March 23 rd	Collaboration in Science	
March 30 th	Advertising 101	
April 6 th	Detecting Misinformation	
April 13 th	Logic in Science	
April 20 th	Intellectual Property	
April 27 th	Entrepreneurship in tech	
May 4th	Final Oral presentations	Pre-read/Oral pitch 3

Syllabus: Team formation and topic ideas

Requirements (to provide):

- Team name
- Product, service, tool related to bioinformatics, genomics, or computation
- Team formation structure (For-profit vs. Non-profit)

Due Thursday - Jan 28th, 2020

Github and Git tutorial

- <https://github.com/raw-lab/BINF6399>
- https://github.com/raw-lab/BINF6399/blob/main/course-materials/git_tutorial.md