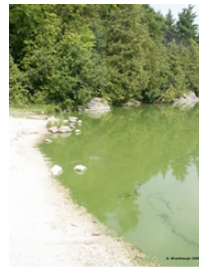


The logo for the Virginia Green Network (VGN) is centered in the background. It features a stylized green leaf shape on the left and a circular emblem on the right. The emblem contains a yellow and white striped pattern, possibly representing a sun or a specific environmental symbol. The letters 'VGN' are written in a light green font across the middle of the logo.

## Metagenomic Survey of Blue-Green Algae

A Pilot Project of the NECC

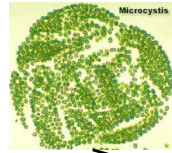
# Blue-green Algae



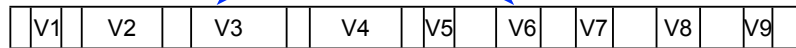


Why and how do  
cyanobacteria  
dominate?

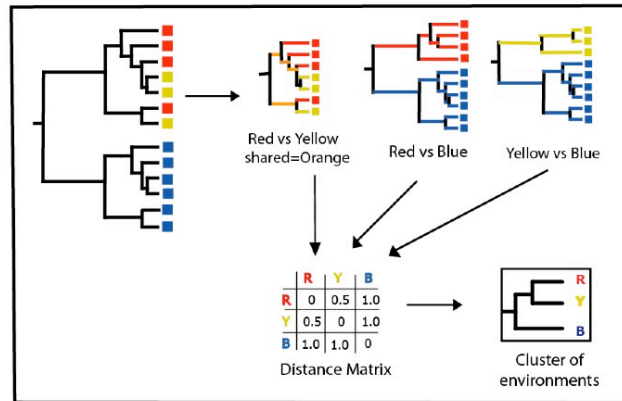
# Metagenomic Approach

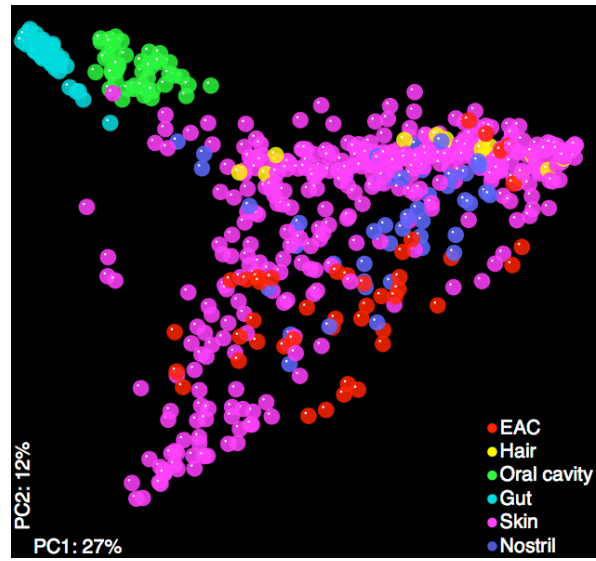


16S rRNA



# Compare samples





Human microbiome

# Metagenomic Approach

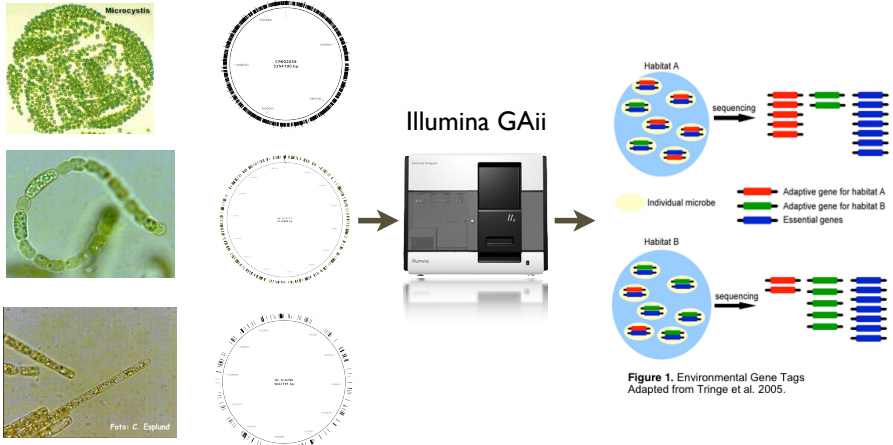
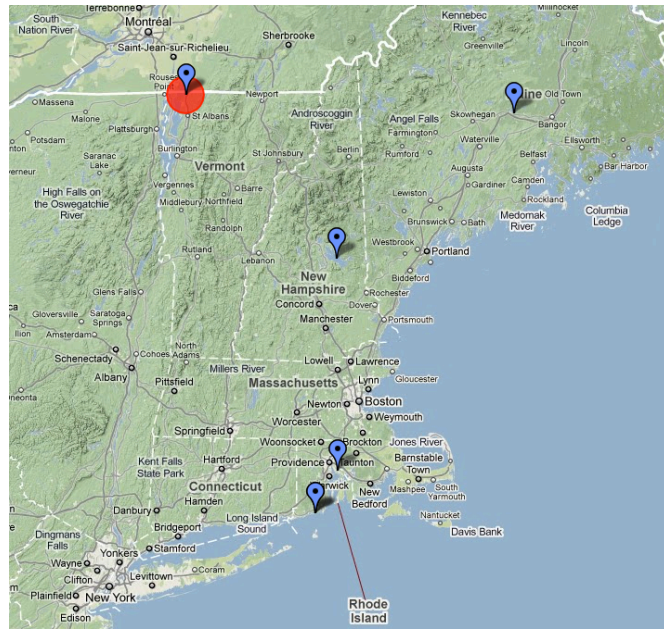


Figure 1. Environmental Gene Tags  
Adapted from Tringe et al. 2005.











Pat Pearson

# Sample Collection

- Once per week at each location
- Three replicates each time
- Same time, location each week

# Sample Collection

	VT	NH	ME	RI a	RI b	RI c	
Month 1	12	12	12	12	12		60
Month 2	12	12	12	12	12	12	72
Month 3	12	12	12	12	12	12	72
Totals	36	36	36	36	36	24	<b>204</b>

~ 200 samples x 6 preps each = Lots Of  
Work

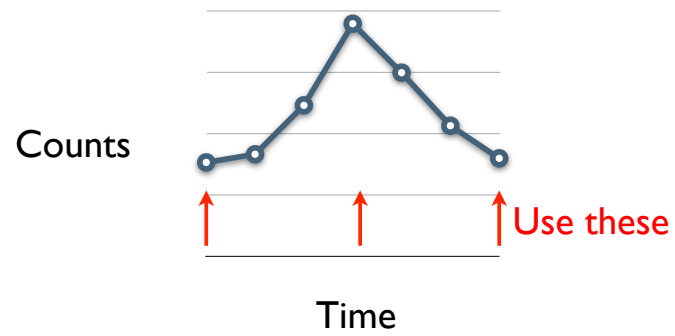
# Sequencing

- 16S region sequenced by 454 (1 plate)
- full DNA sequenced by Illumina (13 lanes)

# Select Samples

Begin - Peak - End

Bloom Density Over Time





# Your Job

Tell a story about the blooms

# Class Project

- use BLAST to identify sequences
- write python program to analyze BLAST results
- write shell scripts to run jobs
- summarize, say something interesting