

NEAR-TERM  
ECOLOGICAL  
FORECASTING  
INITIATIVE  
**SUMMER COURSE**

Kilachand Center, Boston University, July 28-Aug 2, 2019



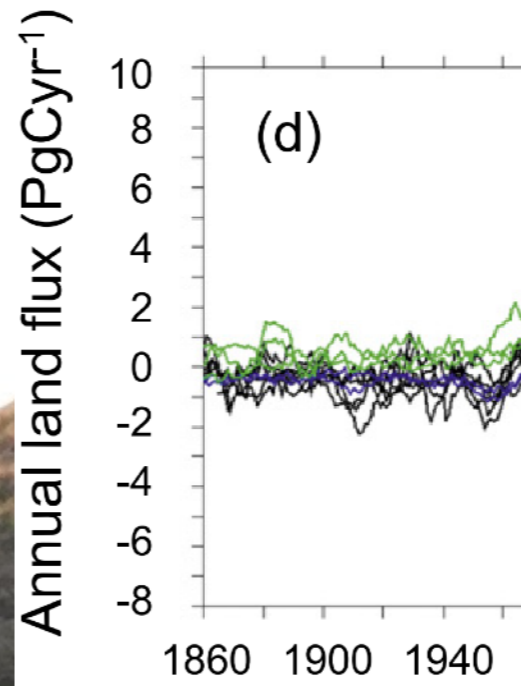
WELCOME TO BOSTON!







# About Me



**ECOLOGICAL FORECASTING** Michael C. Dietze

Four small images in a 2x2 grid: a bull, a peacock, a virus, and a lizard.







Dietze & Wheeler:  
Fluxes & Phenology

Weathers: Aquatic Productivity

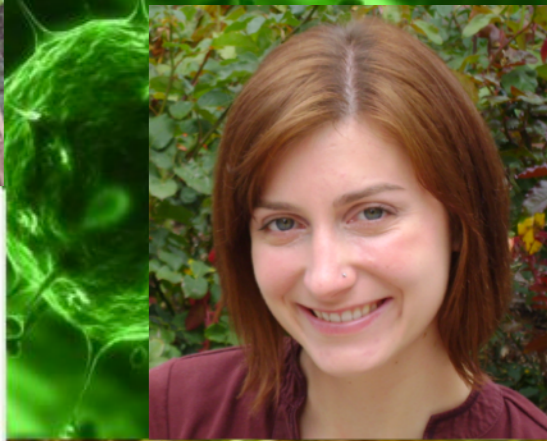


# Near-term Ecological Forecasting Initiative

LaDeau & Foster:  
Ticks & Small  
Mammals



Talbot, Averill, Werbin:  
Microbial diversity



neon

National Ecological Observatory Network

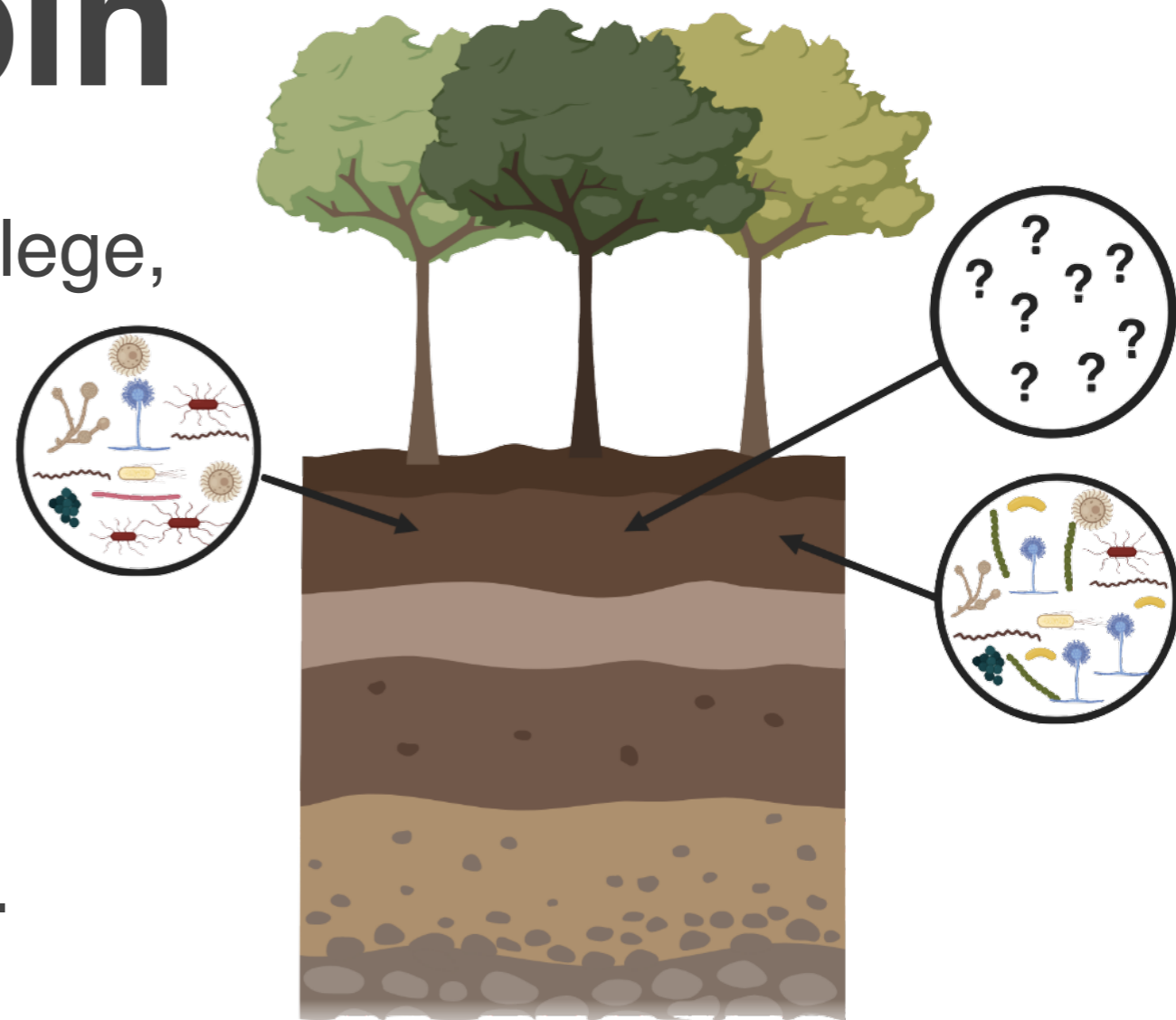


# Zoey Werbin

B.A. in Biology, Swarthmore College,  
PA

1st-year PhD student in the  
Bhatnagar/Dietze Labs at BU

I work on spatial and temporal  
forecasts of the soil microbiome.





**Kathryn I. Wheeler**

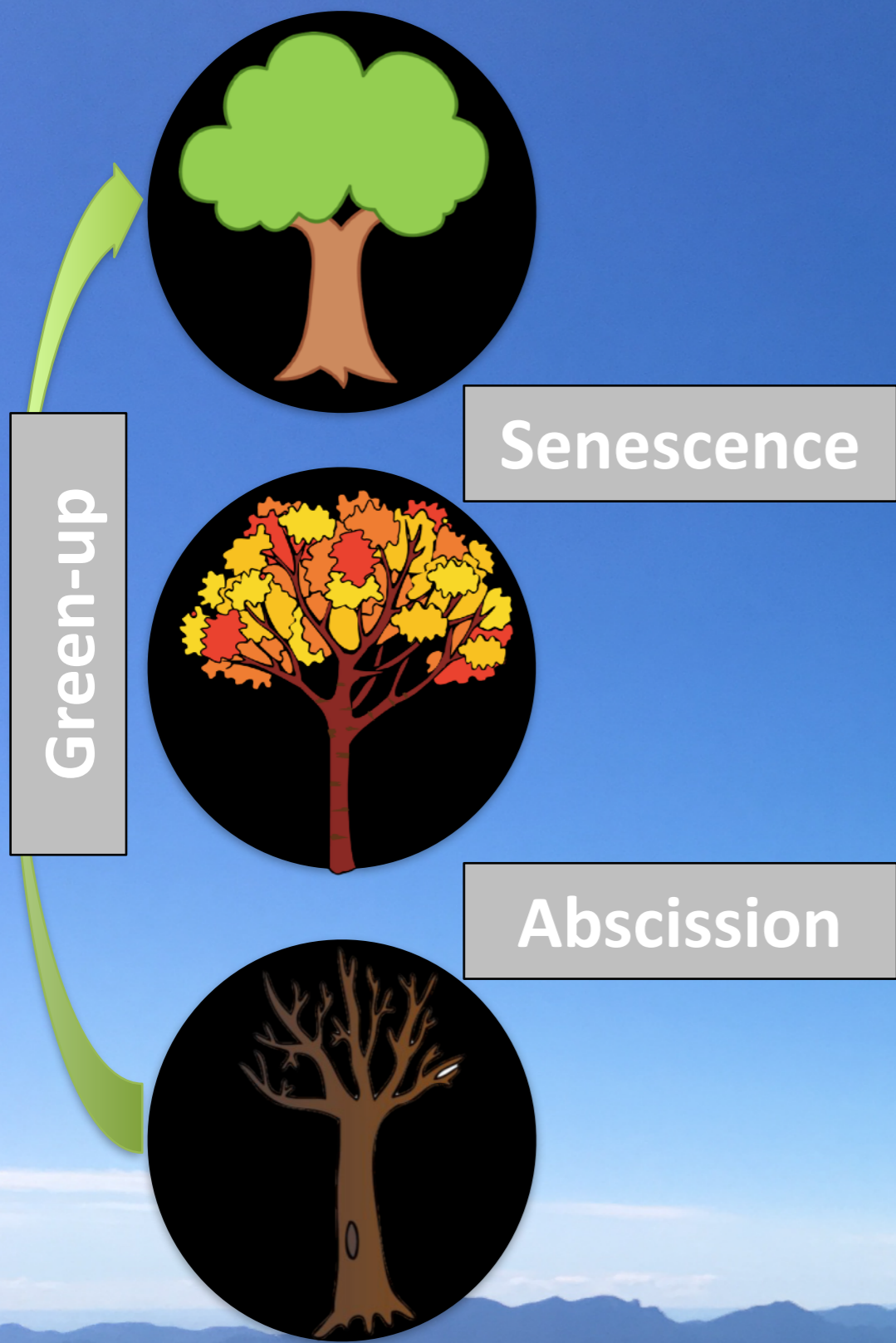
kiwheel@bu.edu

828-773-9737

@KathrynIWheeler

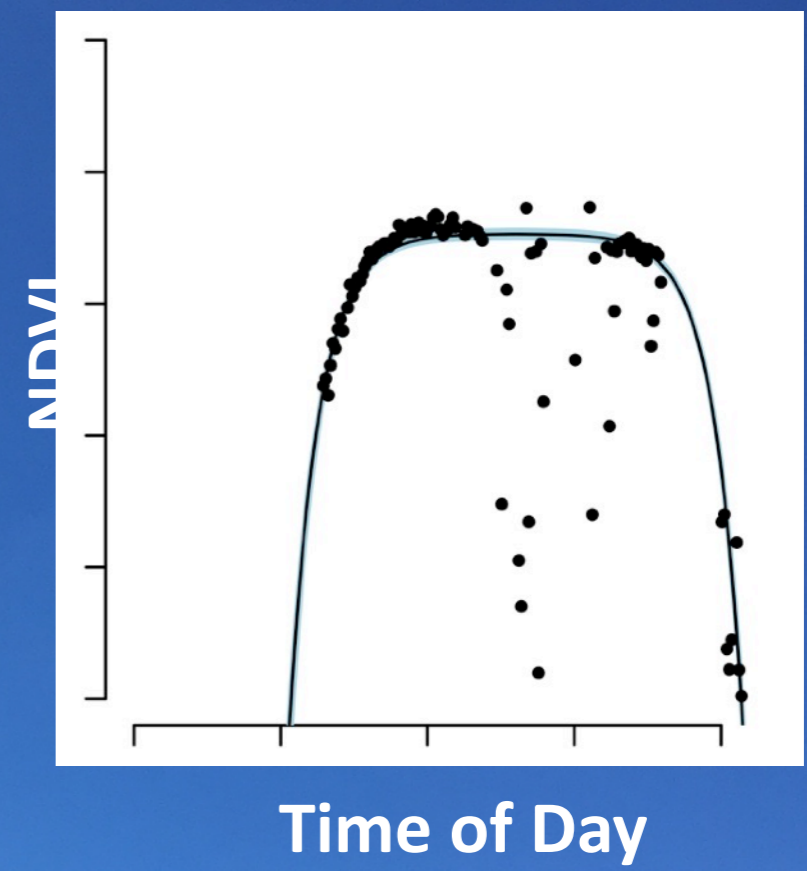






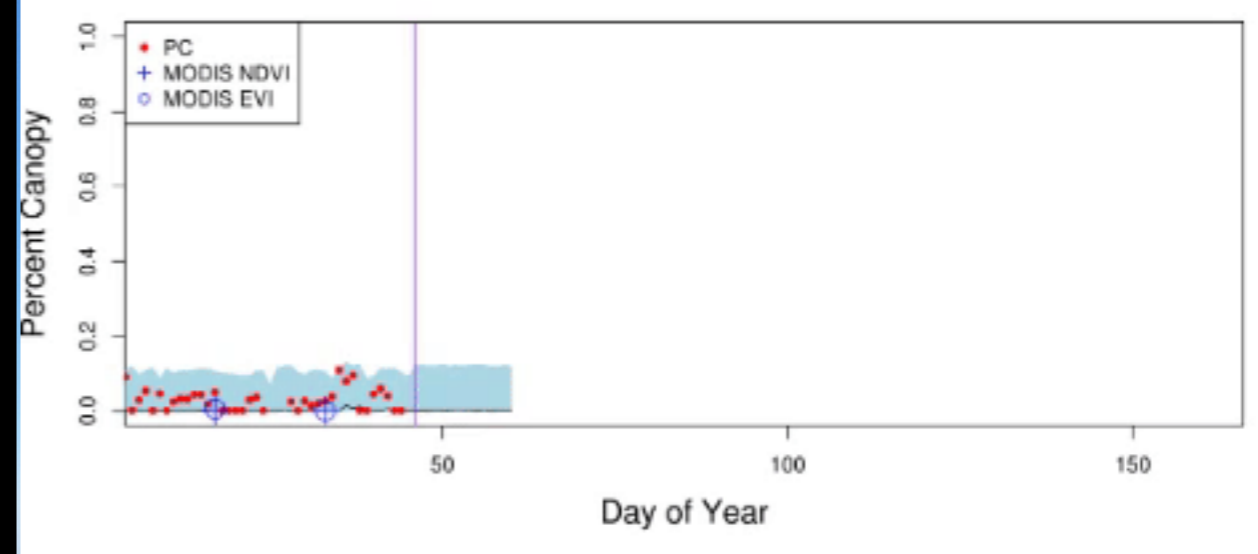
**GOES Diurnal Statistical Model and Phenology**

**GOES Diurnal NDVI**



**Leaf Phenology Forecasting**

**Harvard Forest Forecast**





# Shannon LaDeau



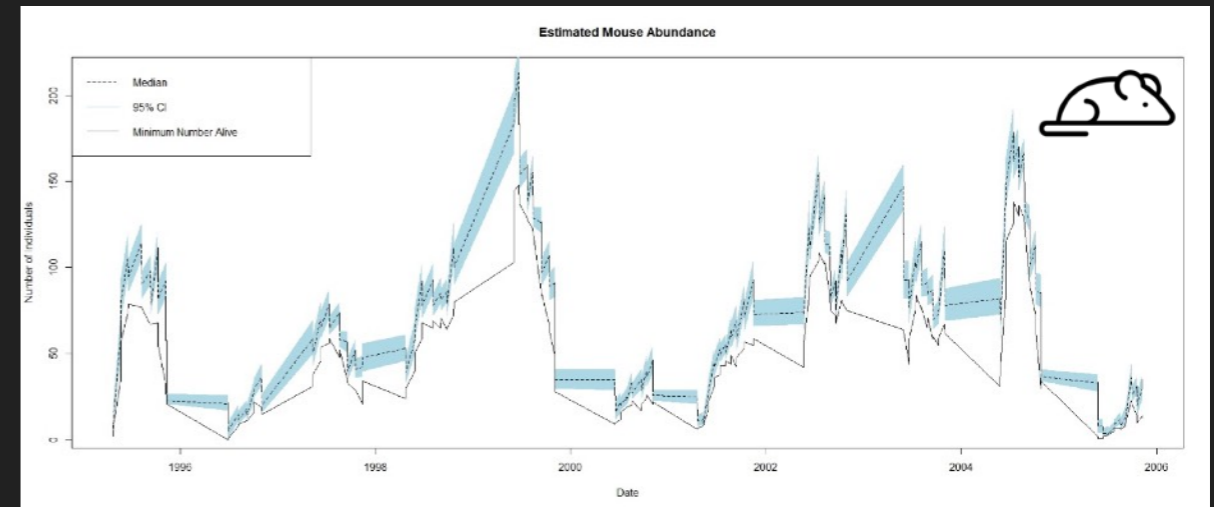


# John Foster

Colorado State - Wildlife Biology



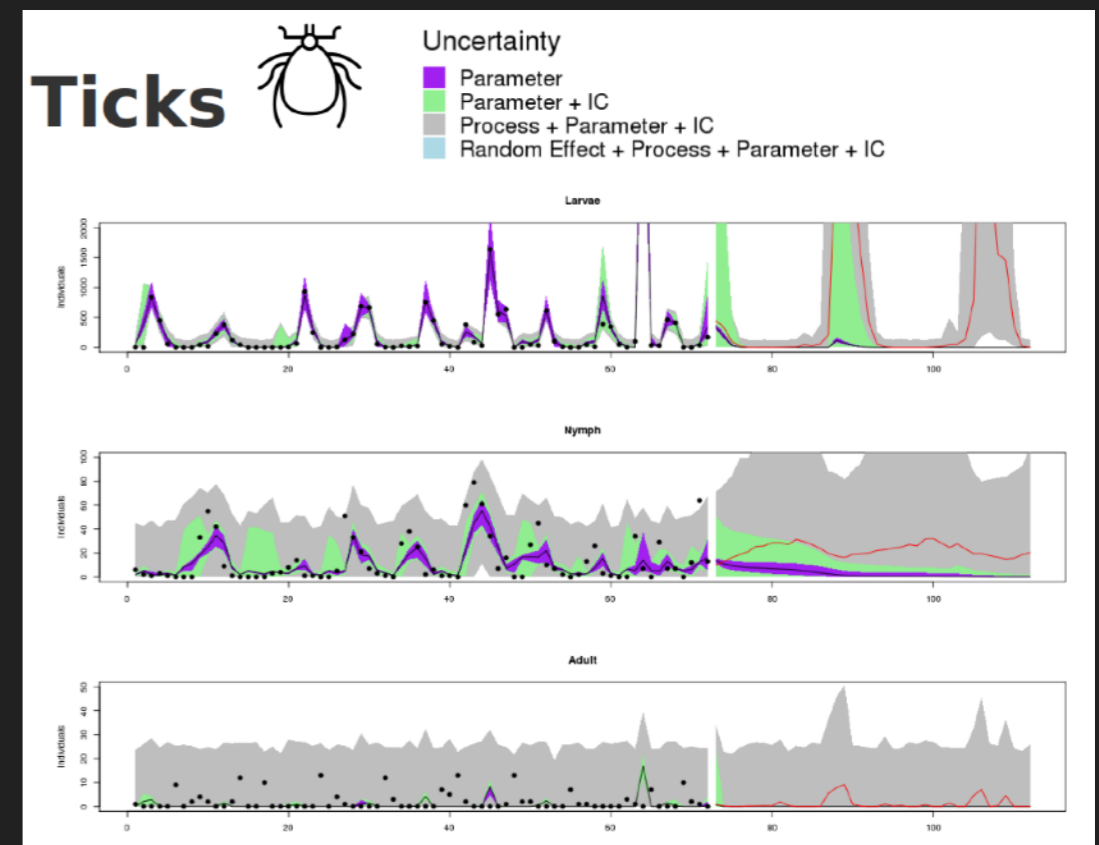
Colorado Parks and Wildlife



Colorado State - Microbiology



Boston University - Ecology

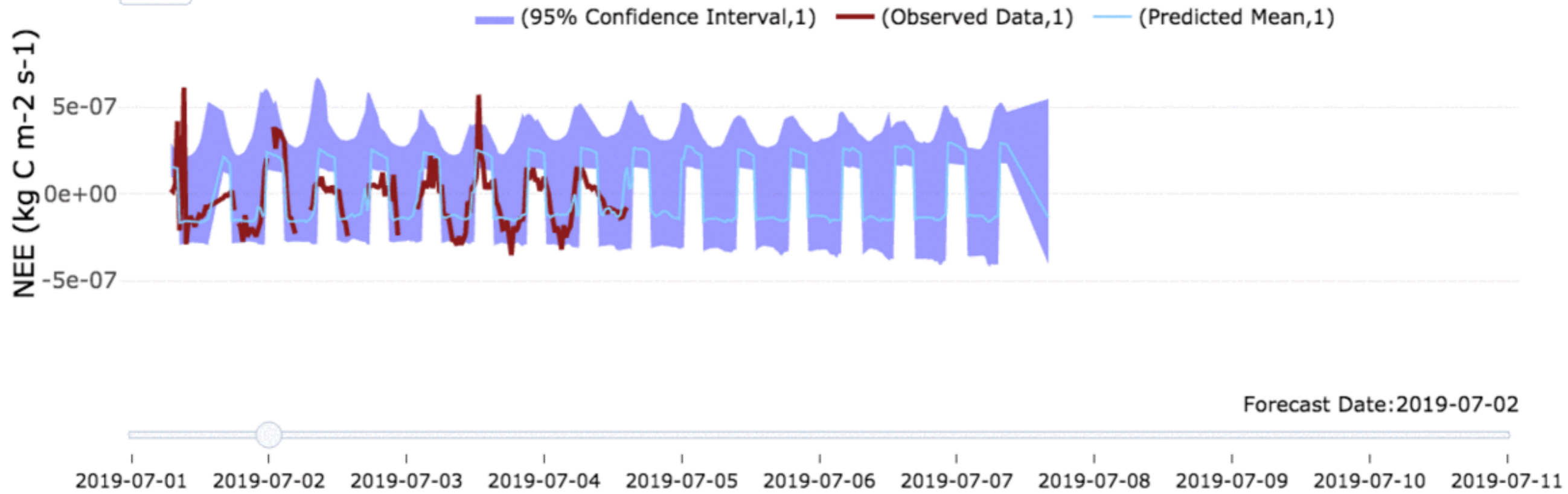


@fosfate\_



### Net Ecosystem Exchange for 2019-07-01 to 2019-07-27, Willow Creek, Wisconsin

Play



BS Ecology  
BS Biochemistry and Molecular  
Biology  
MS Fisheries and Aquatic Sciences

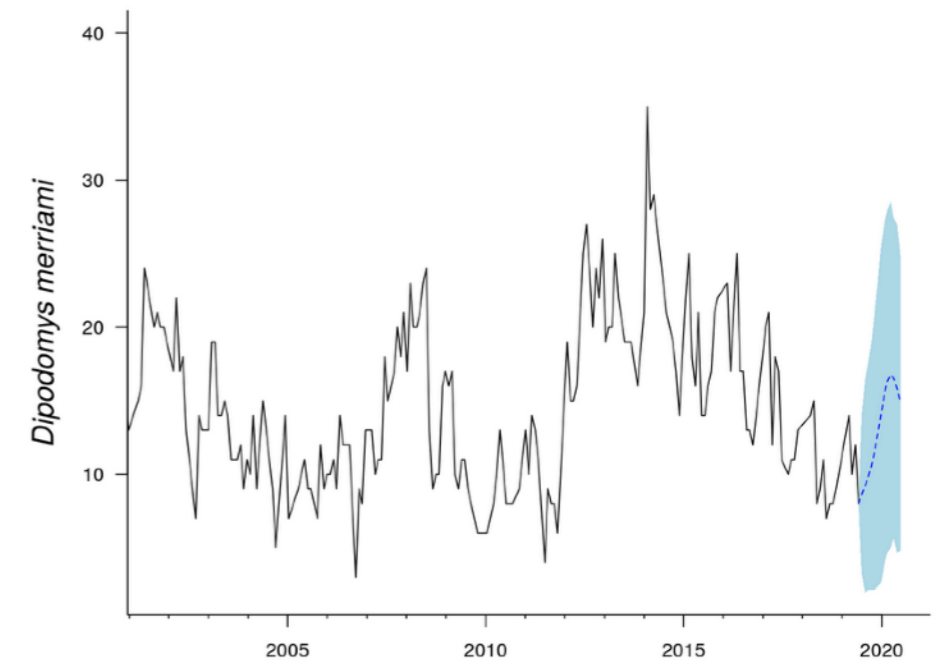
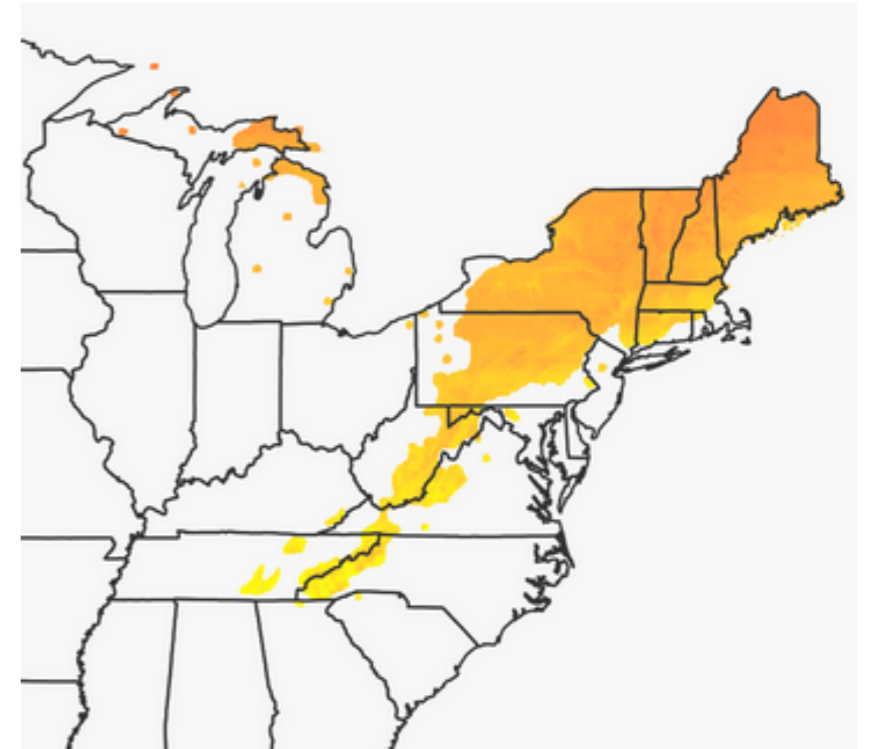


**Katie Zarada**  
**Research**  
**Fellow**

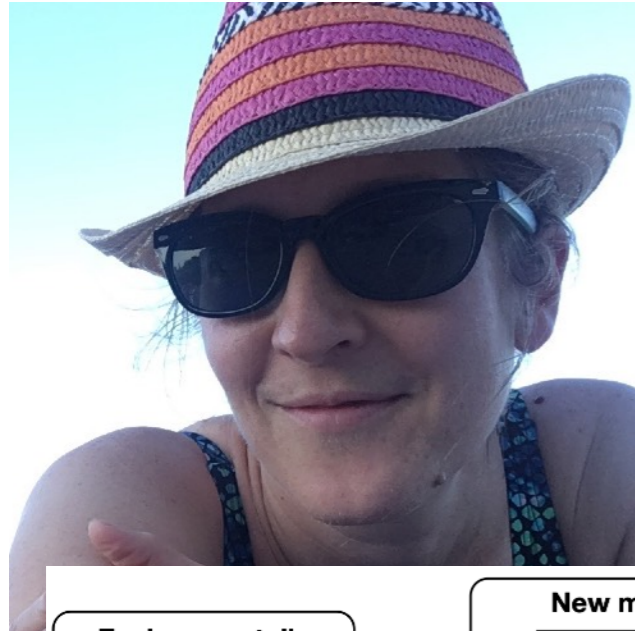




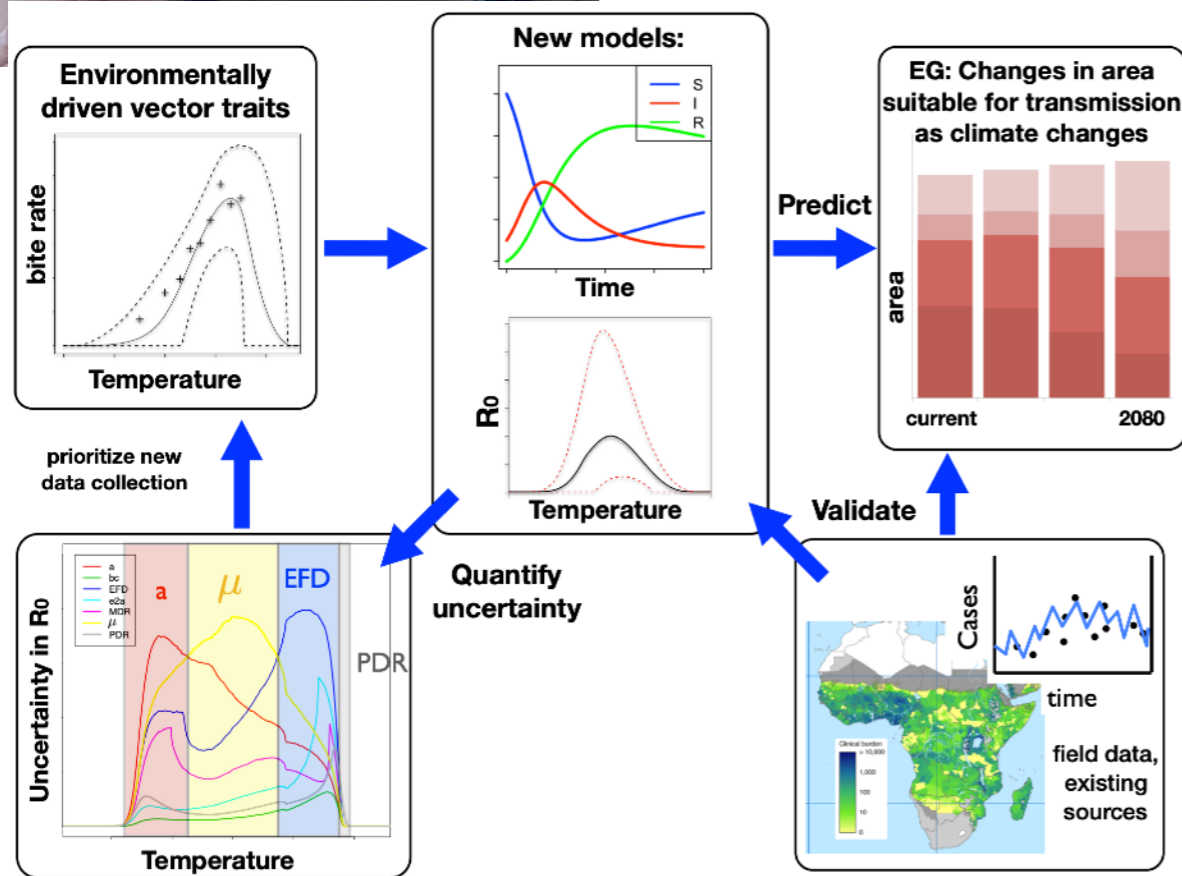
**DATA**  
**CARPENTRY**  
||| ||| ||| ||| ||| **D**







# VECTOR BITE





INTRODUCTIONS



Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
8:30	Arrivals	Introductions		Uncertainty Propagation (LJ & MD)	Ensemble Data Assimilation (MD)	Data Fusion (MD)
9:00			Hierarchical Bayes (LJ)			
9:30		why forecast (MD)				
10:00		break				
10:30			hands on	hands on	hands on	hands on
11:00		Lightning talks	Structured Decision Making & Expert Elicitation (MD)			
11:30				Project	Project	Project
12:00	Lunch	Project talks	Lunch	Lunch	Lunch	Lunch
	(on your own)	Lunch				
12:30			State Space (SL)	Analytical Data Assimilation (MD)	Model assessment	Forecast Infrastructure & Automation (EW)
13:00	Bayes Primer	Complex data in Bayes (SL & LJ )				
13:30			hands on	hands on		
14:00		hands on			Project	presentations
14:30						
15:00		break	break	break		
15:30			Project	round table		
16:00						wrap-up
16:30		Machine Learning (EW)				