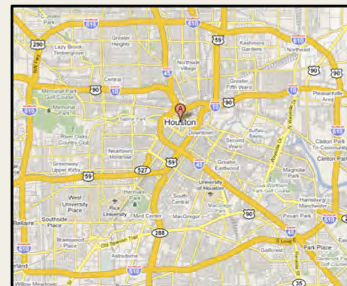


# Survey of Biological Research

Honors 120  
Stuart R. Borrett  
Fall 2013

## Class Road Map

- **Introductions** (~10 min)
- **Course Overview** (~10 min)
- **Consensogram** (~25 min)
- **Biology Big Picture** (~15 min)



### Create Folder

Major

Home Town(s)

Ecology, Ph. D.

El Paso, TX...  
Wilmington, NC

First Name

Last Name

Architect

Borrett, S.R.

Creative

When I grow up, I want to be ...

Adjective your friends would use to describe you

Last Name, First Initial

### Inside the folder ...

Your Course Objectives

- 1.
- 2.
- 3.

What do you want to accomplish this semester?

Introduce yourself to 1 new person in the class

## Borrett - Overarching Research Goals

Understand the processes that **create, constrain,** and **sustain** ecological systems

- Ecosystem organization and transformation

Build theoretical foundations for

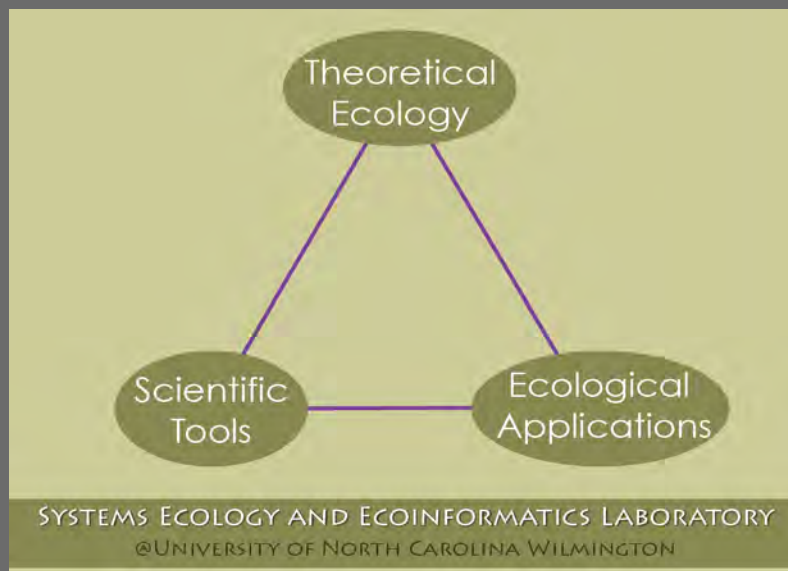
- Ecosystem health, sustainability
- Environmental impact assessment and management

Develop necessary computational & analytical tools

Apply theory to real world problems

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## Course Overview

## Learning Objectives

Through your experience in this course, you will have the opportunity to do the following

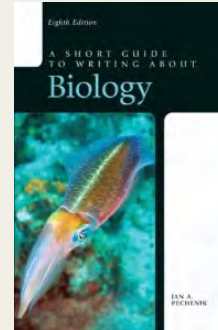
- Meet UNCW BAMB faculty
- Learn about faculty **research programs** and how undergraduates can get involved
- Read, summarize, and critique primary science **publications**
- Observe some **tools** used by biological scientists

## Assignments & Assessment

### Research Synopses (11)

Brief summary of

- (a) the required reading, and
  - (b) the research discussed in class
- Typed, 1 page maximum, Ch 7 Pechenik (2013)
  - Due in class at next meeting



### Assessment

*Final letter grade:*

- A Satisfactory completion of 10 of 11 assignments
- B Satisfactory completion of 9 of 11 assignments
- C Satisfactory completion of 8 of 11 assignments
- D Satisfactory completion of 7 of 11 assignments
- F Satisfactory completion of  $\leq 6$  of 11 assignments

## Website and Schedule

<http://people.uncw.edu/borretts/teaching.html>

The screenshot shows a web browser displaying the SEEL Teaching website. The page title is "SEEL Teaching" and the URL is "people.uncw.edu/borretts/teaching.html". The website header includes "SYSTEMS ECOLOGY AND ECOINFORMATICS LABORATORY" and "UNIVERSITY OF NORTH CAROLINA WELMINGTON". The navigation menu includes "HOME", "PEOPLE", "RESEARCH", "TEACHING", and "CONNECTIONS". The main content area is titled "HON120: SURVEY OF BIOLOGICAL RESEARCH" and "Fall 2013". It features a "Syllabus" link and a table of resources. Below the resources, there is a "Schedule" section with a table listing dates, topics, readings, and assignment due dates.

#	Date	Topic/Activity	Reading	Assignment Due
	8/26	Course Introduction		
	9/2	Labor Day - no class		
	9/9	Dr. Finelli, Chair Dept. Biology and Mairne Biology	<a href="#">UNCW Biology</a>	
	9/16	Research Active University Faculty Primary Scientific Literature		research synopsis

## Consensogram

What is our starting point?

Everyone needs 5 post-it notes.  
Please number them 1-5 in top left corner



## Question 1 –Biological Interests

What type of biology interests you *most*?

### Responses

1. Cell & Molecular Biology
2. Anatomy & Physiology
3. Evolution & Taxonomy
4. Microbiology
5. Botany
6. Marine Biology
7. Ecology

## Question 2 – Scientific Method

How confident are you that...  
You can explain the *scientific method*  
to your family

### Scale

1–5

5 is totally confident

1 is not confident

## Question 3 – Scientists at Work

How confident are you that...  
You can explain what scientists *do*  
(e.g., daily activities) to your family

### Scale

1–5

5 is totally confident

1 is not confident

### Question 4 - Literature

How many articles have you read from the **peer-reviewed literature** (approximately)?

### Responses

1. I don't know what this means
2. 1-2
3. 3-5
4. 5-10
5. >10

### Question 5 - Future

What best describes your **current plans (hopes)** following your undergraduate degree (1-5 yrs.)?

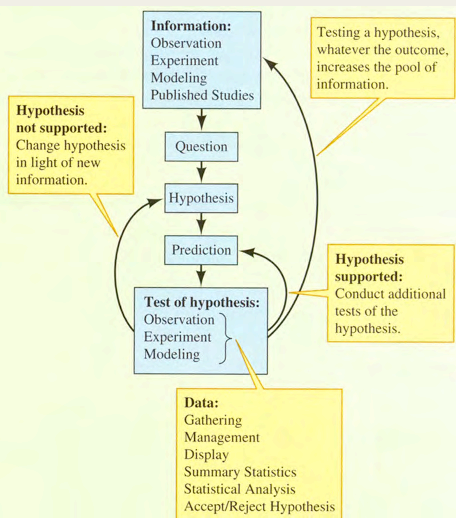
### Responses

1. Work for private or public business
2. Work for state or federal government
3. Work for non-profit
4. Entrepreneur – start your own business, org
5. Professional School (e.g., Medical, Dental, Veterinarian)
6. Graduate School (e.g., MS or PhD in Biology)
7. I have not seriously considered this



# Biological Science

## Biology is a Science - Scientific Method



Molles 2005

### Epistemic Enhancers

Humphries 2004



**Figure 1** Graphic summary of the scientific method. The scientific method centers on the use of information to propose and test hypotheses through observation, experiment, and modeling.

## Biology from E. O. Wilson's PoV

### Century of Biology



[http://graphics8.nytimes.com/images/2008/07/15/science/15wils\\_650.jpg](http://graphics8.nytimes.com/images/2008/07/15/science/15wils_650.jpg)

[http://www.youtube.com/watch?v=eN20LAm\\_1dl](http://www.youtube.com/watch?v=eN20LAm_1dl)

### Modern Biology

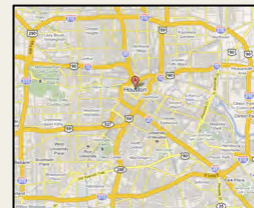


[http://en.wikipedia.org/wiki/File:Plos\\_wilson.jpg](http://en.wikipedia.org/wiki/File:Plos_wilson.jpg)

<http://www.youtube.com/watch?v=PCDAzrEHXA>

## Summary Road Map

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## Thinking like a Biologist

Learn to see with Biology lenses



...and as a scientist

  
**DEMAND  
EVIDENCE  
AND  
THINK  
CRITICALLY**

Facebook meme

## Next Steps

8/30 2 pm. Dept. Seminar.

Dr. Joe Luckovich, ECU, Food Web Ecology

9/2 = Labor Day & No Class

9/6 2 pm. Dept. Seminar. Stuart Borrett

9/9 = Dr. Finelli

– Review the UNCW Biology web page

<http://uncw.edu/bio/>

Please return folders and markers to their boxes.