



# Intro. to Scientific Writing

---

Mallarie Yeager  
(she/her/hers)  
[yeager.m@northeastern.edu](mailto:yeager.m@northeastern.edu)

# About Me

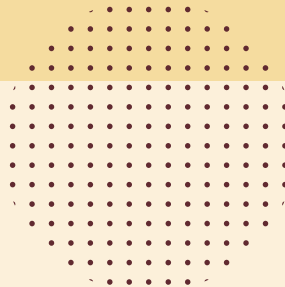
- A PhD Candidate at Northeastern University (Boston, MA)
- Study fish communities in RI
- Originally from Florida
- Did my Masters at SDSU (San Diego, CA)
- Just adopted a dogo ----->

 @mallarie\_yeager



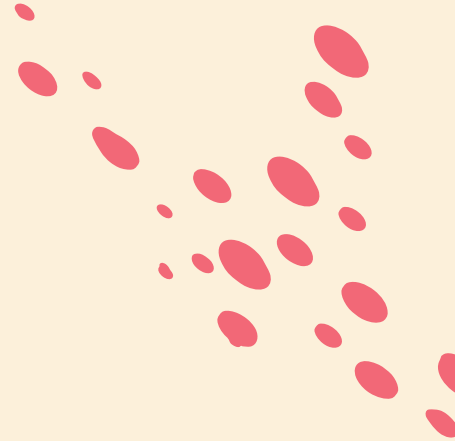




# Scientific Writing



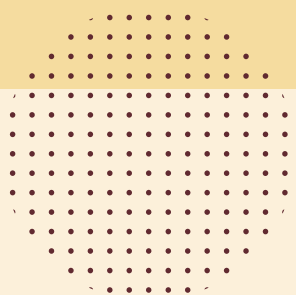
01

Main goals  
and styles






# Scientific Writing



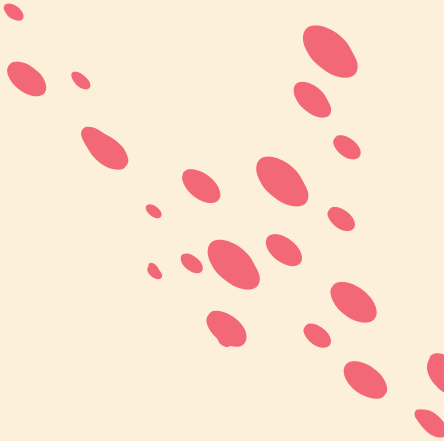

01



Main goals  
and styles



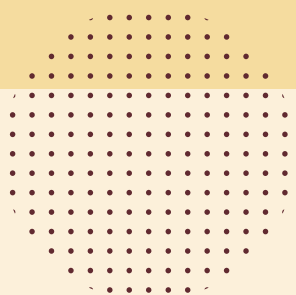
02

Structure of a  
scientific paper






# Scientific Writing




01

Main goals  
and styles



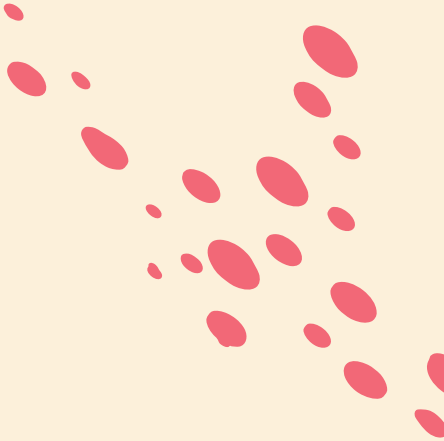
02



Structure of a  
scientific paper



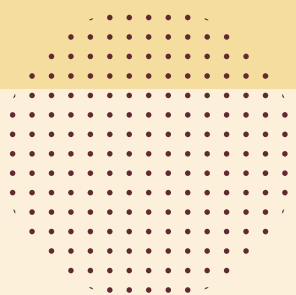
03

Writing tips  
and resources






# Scientific Writing



01

Main goals  
and styles




03

Writing tips  
and resources

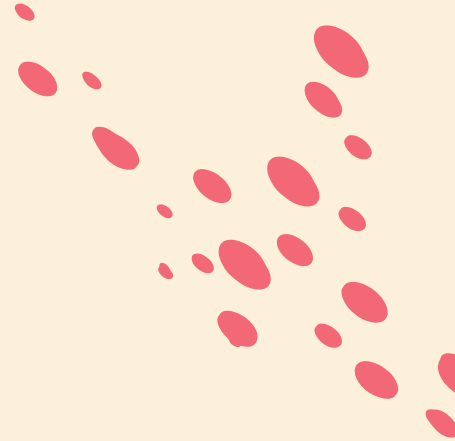
02

Structure of a  
scientific paper



04

Writing  
exercise



# 01

## Scientific Writing: Goals

### Purpose:

To present data and/or ideas with a level of detail that allows a reader to evaluate the validity of the results and conclusions based only on the facts presented



# 01

## Scientific Writing: Goals

### 1. Concise and Precise

- Communicate scientific information succinctly
- We do not want: Flowery, ambiguous, wordy and redundant language

### Purpose:

To present data and/or ideas with a level of detail that allows a reader to evaluate the validity of the results and conclusions based only on the facts presented



# 01

## Scientific Writing: Goals

### 1. Concise and Precise

- Communicate scientific information succinctly
- We do not want: Flowery, ambiguous, wordy and redundant language

### 2. Primary Audience Other Scientists

- Helps to reduce explanation of methodology or concepts
- However, more challenging to communicate to non-scientists

### Purpose:

To present data and/or ideas with a level of detail that allows a reader to evaluate the validity of the results and conclusions based only on the facts presented

# 01

## Scientific Writing: Goals

### 1. Concise and Precise

- Communicate scientific information succinctly
- We do not want: Flowery, ambiguous, wordy and redundant language

### 2. Primary Audience Other Scientists

- Helps to reduce explanation of methodology or concepts
- However, more challenging to communicate to non-scientists

### 3. In Context with Previous Work

- Science is always building on itself so we must always relate to past work in our field

### Purpose:

To present data and/or ideas with a level of detail that allows a reader to evaluate the validity of the results and conclusions based only on the facts presented

01

## Scientific Writing: Styles



### Peer-Reviewed Papers

Journal articles which present  
on primary research you and  
collaborators conducted

01

## Scientific Writing: Styles



### Peer-Reviewed Papers

Journal articles which present on primary research you and collaborators conducted



### Grant Proposals

Scientists need funding in order to conduct research. Proposals are proof to funding agencies that researchers can accomplish the project

01

## Scientific Writing: Styles



### Peer-Reviewed Papers

Journal articles which present on primary research you and collaborators conducted



### Grant Proposals

Scientists need funding in order to conduct research. Proposals are proof to funding agencies that researchers can accomplish the project

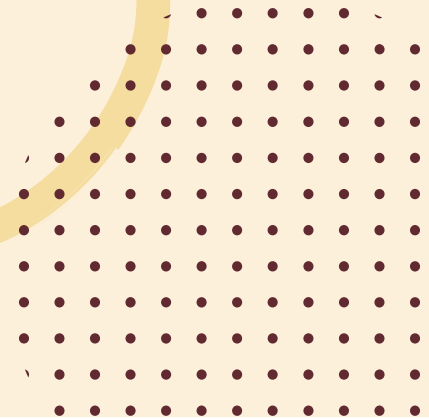


### Literature Reviews/ Meta-analyses

Summarizing and synthesizing research that has already been carried out.

02

Scientific  
Writing:  
Structure

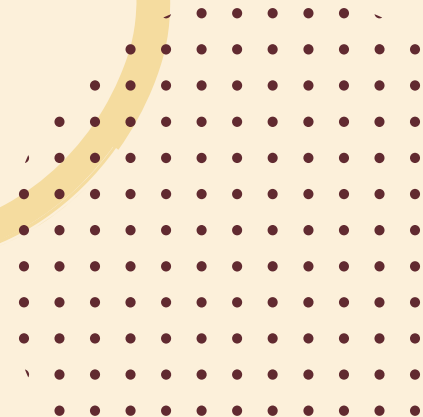


02

## Scientific Writing: Structure

### ABSTRACT

- Summarizes the paper





02

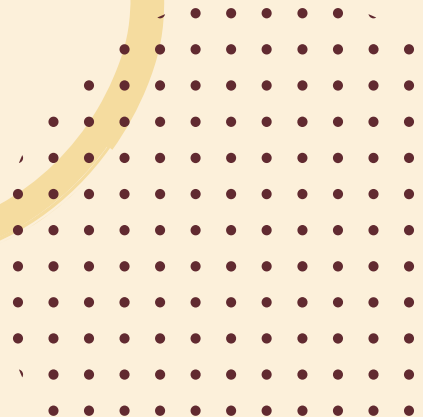
## Scientific Writing: Structure

### ABSTRACT

- Summarizes the paper

### INTRODUCTION

- Introduce why your research is important to and relevant in your field
- Presents problem and proposed solution



# 02

## Scientific Writing: Structure

### ABSTRACT

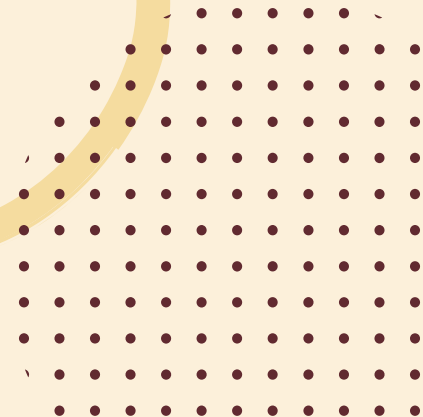
- Summarizes the paper

### INTRODUCTION

- Introduce why your research is important to and relevant in your field
- Presents problem and proposed solution

### METHODS

- Describe *exactly* how the experiments and analyses were conducted



# 02

## Scientific Writing: Structure

### ABSTRACT

- Summarizes the paper

### INTRODUCTION

- Introduce why your research is important to and relevant in your field
- Presents problem and proposed solution

### METHODS

- Describe *exactly* how the experiments and analyses were conducted

### RESULTS

- States the results of experiment(s) and analyses without interpretation

# 02

## Scientific Writing: Structure

### ABSTRACT

- Summarizes the paper

### INTRODUCTION

- Introduce why your research is important to and relevant in your field
- Presents problem and proposed solution

### METHODS

- Describe *exactly* how the experiments and analyses were conducted

### RESULTS

- States the results of experiment(s) and analyses without interpretation

### DISCUSSION

- Interpret findings
- Explore broader implications of those findings

02

## Scientific Writing: Structure

5

### ABSTRACT

- Summarizes the paper

1

### METHODS

- Describe *exactly* how the experiments and analyses were conducted

3

### DISCUSSION

- Interpret findings
- Explore broader implications of those findings

4

### INTRODUCTION

- Introduce why your research is important to and relevant in your field
- Presents problem and proposed solution

2

### RESULTS

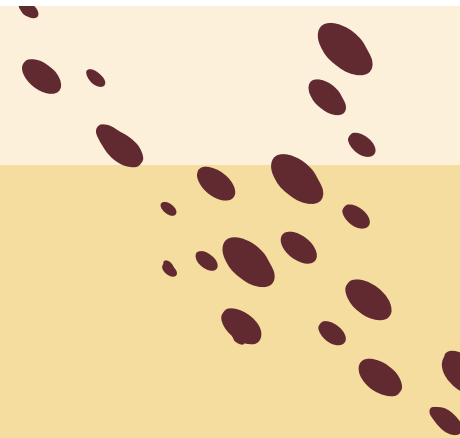
- States the results of experiment(s) and analyses without interpretation

Writing  
Order

03



Scientific  
Writing:  
Tips & Resources



# 03

## Scientific Writing: Tips & Resources

### 1. Form a weekly writing group

- Creates goals and accountability among peers
- Allocates *quiet* time to write

File Edit View Insert Format Data Tools Add-ons Help Last edit was made on March 27 by Torrance Hanley						
<div> <span>Undo</span> <span>Redo</span> <span>Print</span> <span>Find</span> <span>100%</span> <span>\$</span> <span>%</span> <span>.0</span> <span>.00</span> <span>123</span> <span>Arial</span> <span>10</span> <span>B</span> <span>I</span> <span>U</span> <span>A</span> <span>Insert Table</span> <span>Insert Chart</span> <span>Insert Link</span> </div>						
	A	B	C	D	E	F
1	Date	Name	Session Goal(s) (optional)	Fraction of Goal Met?	Goal(s) for Next Week	Fraction of Goal Met?
2	1/17/2020	Torrie	draft strategic plan for semester, redo figures for TIDE manuscript	0.5	resubmit TIDE manuscript, review manuscript for Diversity	0.25
3	1/17/2020	Mallarie	Rework intro of PED proposal	0.5	Finish first draft of PED proposal; Edit career goals and quantitative education statements	0.75
4	1/17/2020	Katie	Read papers for a) sustainability seminar, b) ecological dynamics, c) independent readings.	2/3	Read independently	0.75
5	1/17/2020	Dan	finish permanova of flowering stages; work into manuscript		edit manuscript	



# 03

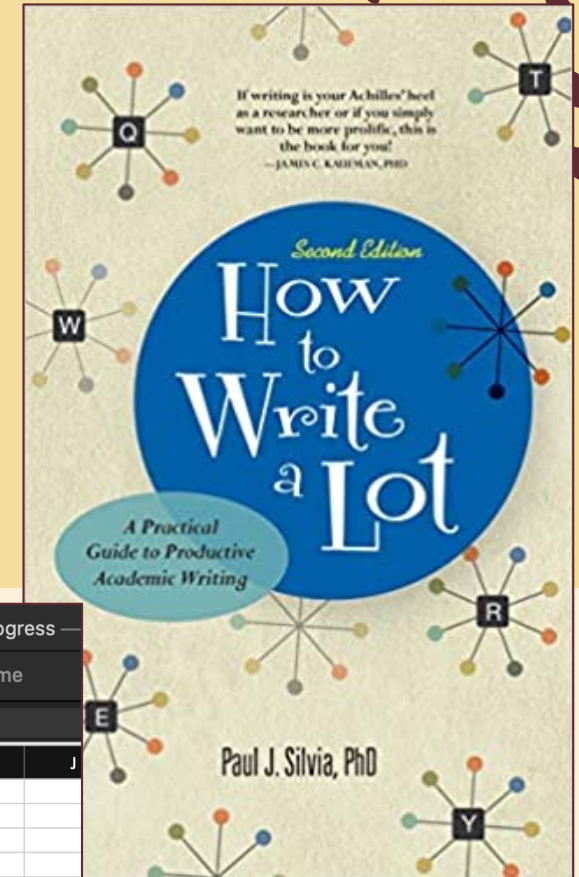
## Scientific Writing: Tips & Resources

1. Form a weekly writing group
  - Creates goals and accountability among peers
  - Allocates *quiet* time to write
2. Set aside time to write everyday
  - Possibly with a beverage of your choice
    - Be sure to edit sober ;)

# 03

## Scientific Writing: Tips & Resources

1. Form a weekly writing group
  - Creates goals and accountability among peers
  - Allocates *quiet* time to write
2. Set aside time to write everyday
  - Possibly with a beverage of your choice
    - Be sure to edit sober ;)
3. Keep a record of daily writing
  - From book: "How to Write a Lot"



Writing Progress										
Home Insert Draw Page Layout Formulas Data Review View Tell me										
B11 fx										
	A	B	C	D	E	F	G	H	I	J
1	Month	Date	Day	Words	Goal	Project	Comments	Year		
2	Feb		17 Monday	201	Met	CH 2		2020		
3	Feb		18 Tuesday	92	Met	CH 2		2020		
4	Feb		19 Wednesday	0	Unmet	CH 2		2020		
5	Feb		20 Thursday	136	Met	CH 2		2020		
6	Feb		21 Friday	188	Met	CH 2		2020		
7	Feb		22 Saturday	0	NA			2020		

# 04

## Scientific Writing: Writing Activity

# Movie into Abstract

### Directions:

1. Pick your favorite movie.
2. Write 6-8 sentences summarizing the movie into the structure of an abstract

### ABSTRACT STRUCTURE

- 1-3 sentences explaining the intro/building of plot
- 1 sentence describing the objective/conflict
- 1-2 sentences summarizing how they accomplished objective/conflict
- 1-2 sentences discussing the results of objective/accomplishing conflict

04

Scientific  
Writing:  
Writing Activity

# WALL-E

1. Human's abandoned Earth and left behind robot WALL-E to pick up accumulated trash.
2. When a spaceship, EVE, comes to earth in search of living plants, WALL-E falls in love and gives her Earth's last living plant.
3. Upon receiving plant, EVE gets picked up by spaceship and WALL-E follows.
4. On Axiom, humans have become so fat and lazy, they are unaware of their surroundings- including the fact that a group of robots have taken charge.
5. The evil autopilot, Auto, tries to get rid of the discovered plant EVE brings back to the spaceship, in order to keep humanity on Axiom forever.
6. This compels WALL-E, EVE, the pilot and some malfunctioning robots to retrieve the plant from Auto and begin the transition back to Earth.
7. They make it back to Earth with the only living plant to start cultivating natural life again.

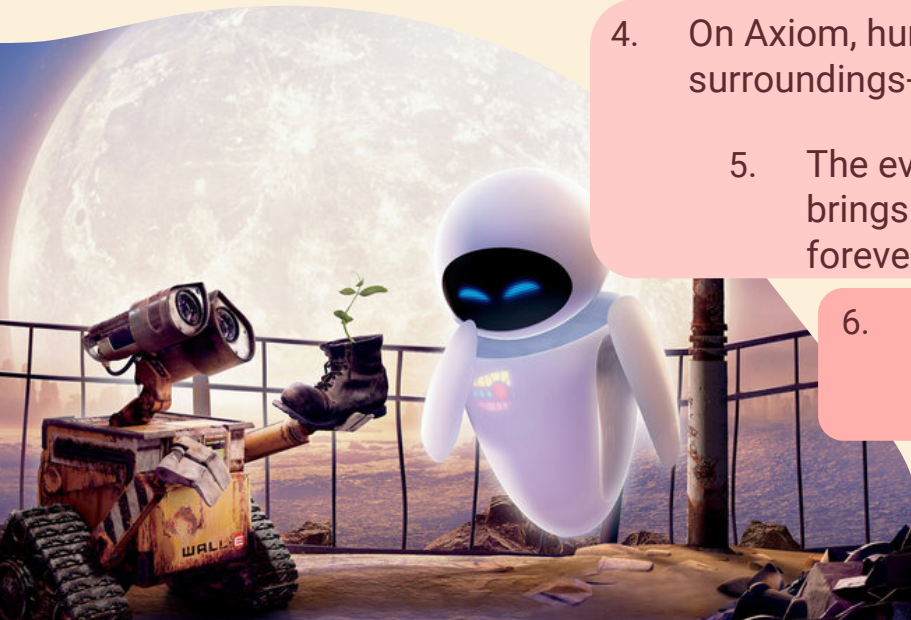


04

Scientific  
Writing:  
Writing Activity

# WALL-E

1. Human's abandoned Earth and left behind robot WALL-E to pick up accumulated trash.
2. When a spaceship, EVE, comes to earth in search of living plants, WALL-E falls in love and gives her Earth's last living plant.
3. Upon receiving plant, EVE gets picked up by spaceship and WALL-E follows.
4. On Axiom, humans have become so fat and lazy, they are unaware of their surroundings- including the fact that a group of robots have taken charge.
5. The evil autopilot, Auto, tries to get rid of the discovered plant EVE brings back to the spaceship, in order to keep humanity on Axiom forever.
6. This compels WALL-E, EVE, the pilot and some malfunctioning robots to retrieve the plant from Auto and begin the transition back to Earth.
7. They make it back to Earth with the only living plant to start cultivating natural life again.





Thanks!

Happy to take  
any questions!

Email: [Yeager.m@northeastern.edu](mailto:Yeager.m@northeastern.edu)