

UNM School of Engineering

# Student Research Experience Program



## Orientation

**Yadéeh Sawyer, Ph.D.**  
*she/her/ella*

Engineering Student Success Center

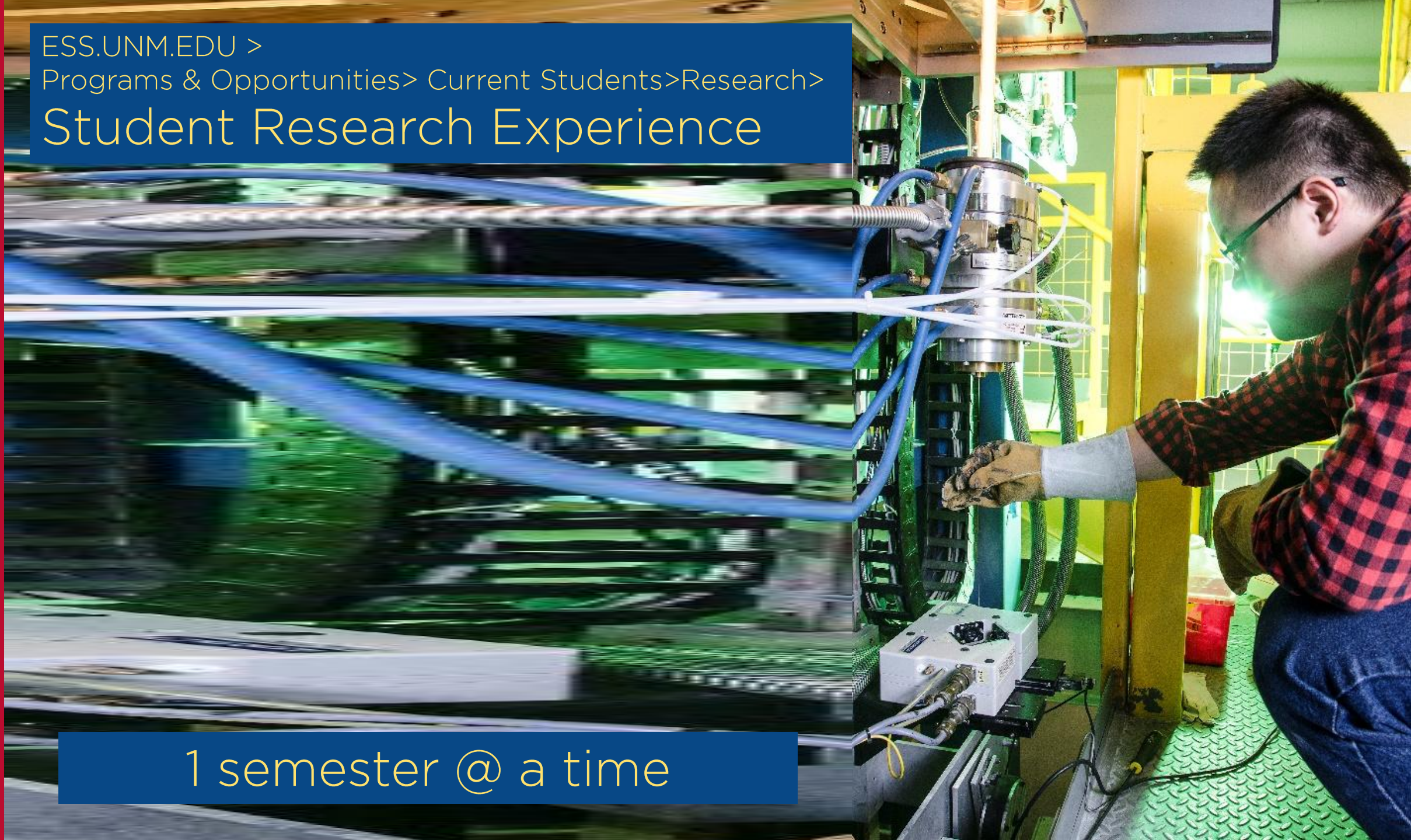
[ESS.UNM.EDU](https://ess.unm.edu) > Programs & Opportunities>  
Current Students>Research



[goto.unm.edu/sre](https://goto.unm.edu/sre)

ESS.UNM.EDU >  
Programs & Opportunities > Current Students > Research >  
Student Research Experience

1 semester @ a time





NO ONE IS A MIND READER.

*Clearly Communicate*

YOUR NEEDS.

# Hello

my name is

- Name & pronouns
- Major
- Year
- What does it mean to be a student researcher?
- What motivated you to join the program?

# RESEARCH BASICS





What  
Problem

Do You

Want to Solve?

The best research is the  
research that you don't  
know that you are doing.

Terry Pratchett

Research =  
Collaboration





# Lab meetings





Strength/Weakness  
Challenges





# Determine roles

# Balance



Individual goals

Group goals



Methods



Speak up

3x longer than  
you **THINK** it  
will take

**MANAGE**

**YOUR**

**TIME**





“

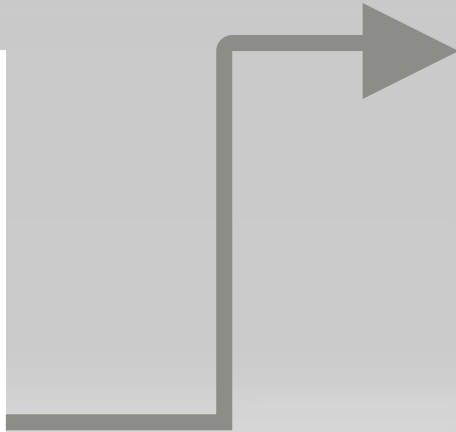
Coming together is a beginning.  
Keeping together is progress.  
Working together is success.

Henry Ford ”



# Problem solving





**Conflict  
resolution**

# Personal accountability



# Self- confidence





Trust

Respect

ink saving Eco

# Take risks





# Lab hierarchy



Primary or Lead Researcher/Advisor/Mentor

Post-Doc

Graduate Student

Upper Level Undergraduate

Early Undergraduate

High School Student

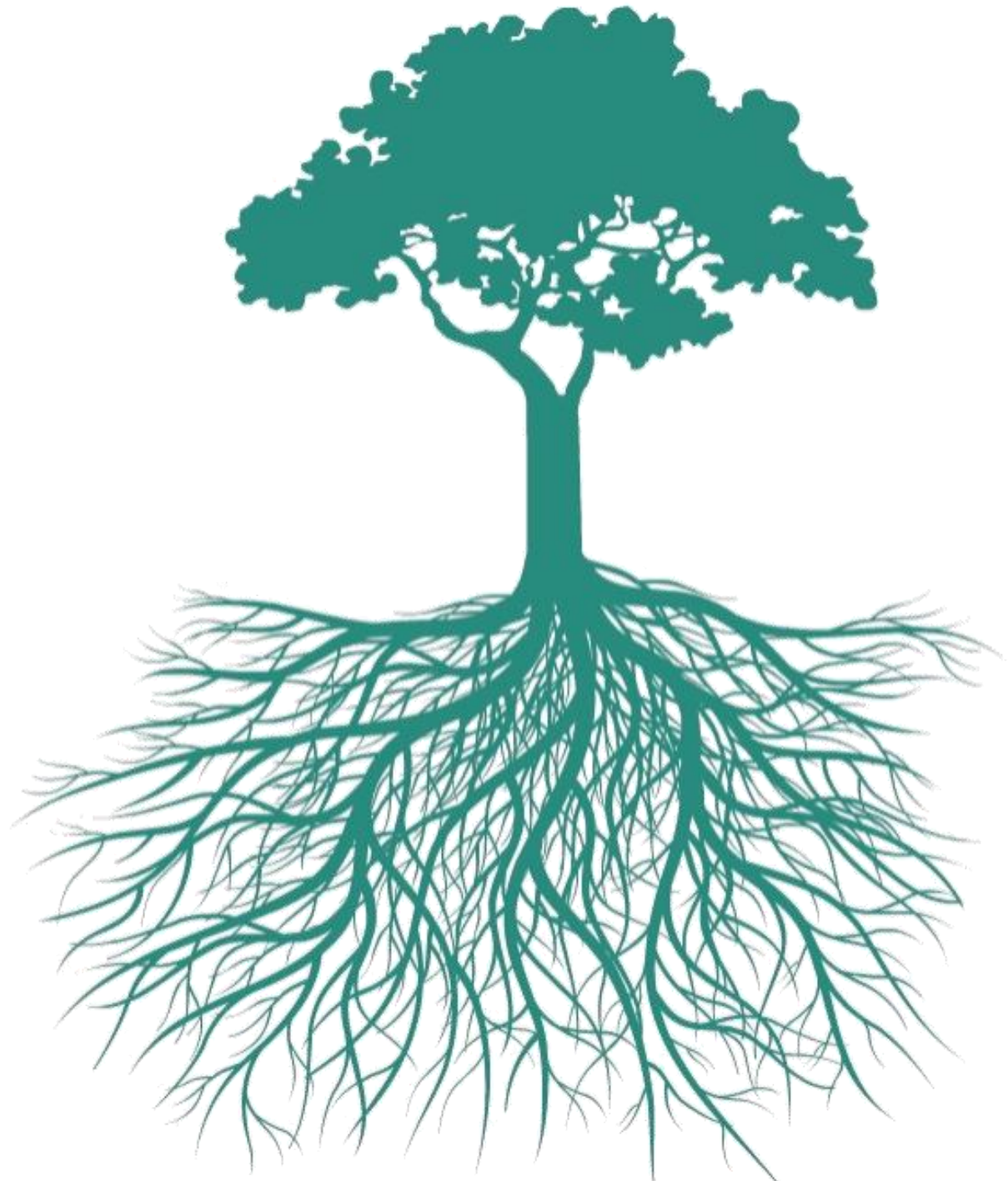


# Levels of Engagement

# Supportive tasks



Foundational  
information



# Collecting information

– *Theoretical vs Experimental*

– *Develop knowledge (science) vs designing for practical use (engineering)*

## SCIENCE

- Investigates to understand the natural world
- Scientists find out how and why something in the natural world occurs.
- Focuses on data collection and analysis. Data may confirm, contradict, or add to what we already know.

### Examples:

- Studies that categorize new species.
- Studies that explore space - including Mars and other planets.
- Studies that explore how environmental factors affect human life.

## ENGINEERING

- Applies science, math, and technologies towards existing problems in order to solve them.

- Engineers use investigation and data as a way to solve a problem or a need.

- Investigations may also be used to find the best solution to a problem.

### Examples:


- Designing eco-friendly fuels.
- Designing technology to clean up the world's oceans.
- Designing better bridges, buildings, and power supplies.

# VS

# Inception of unique research questions

- *Basic*
- *Applied*





Writing/  
reporting findings



# UROC

UNDERGRADUATE RESEARCH  
OPPORTUNITY CONFERENCE



<https://uresearch.unm.edu/>



# Research Location



# Scientific Reading & Writing





**PRACTICE**

*makes*

**PROGRESS**

FRESHLY

Abstract

Introduction

Materials &  
Methods

Results

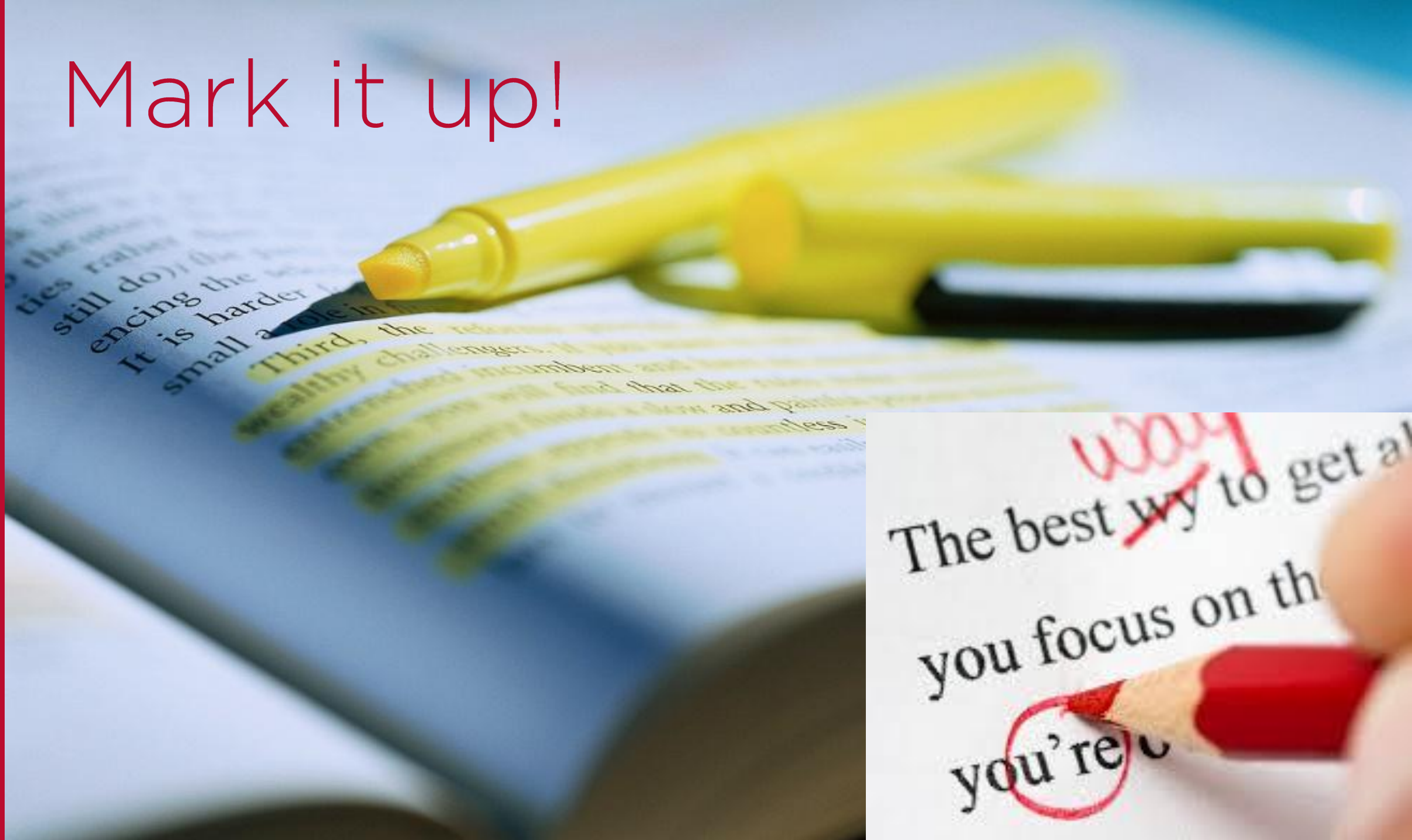
Discussion

References/  
Literature Cited/  
Bibliography

No details



# Mark it up!



The best ~~way~~ to get a  
you focus on th  
you're

# Get Feedback



# PROGRAM EXPECTATIONS & TIPS FOR SUCCESS







BEE

PROFESSIONAL

# TITLES

## COMMON TITLES



Mr.



Mrs.



Miss

## FORMAL TITLES



Gentleman



Ma'am



Sir



Lord



Excellency



Lady

## ACADEMIC/PROFESSIONAL TITLES



Dr.



Professor



Chancellor



Principal



President



Master



Warden



Dean



HARD  
WORK



REWARD

# Where to Start




A black and white promotional image for the movie 'The Big Picture'. The central focus is the title 'THE BIG PICTURE' rendered in large, white, 3D block letters with black outlines. The letters are arranged in two lines: 'THE' on top and 'BIG PICTURE' below. Behind the letters is a large, semi-circular globe showing the Americas. The background is a dark, cloudy sky. A vertical red bar is visible on the far left edge of the image.

THE  
BIG PICTURE



PAID

UNPAID



# Time Commitment







Communication!



Logistics



**KEEP YOUR  
COMMITMENT**



Late. Cancel. Re-schedule.

3:00  
4:00  
5:00

Wednesday

NAME

8:00  
9:00  
10:00  
11:00  
12:00  
1:00  
2:00  
3:00

8:00  
9:00  
10:00  
11:00  
12:00  
1:00  
2:00  
3:00  
4:00



No show!

NUMBER





**DISCRIMINATION**





<https://goto.unm.edu/ess-resources>

**Want help with anything related to your SOE Experience?**

For academic support, career & professional development and so much more.

**Check out our resource page and reach out as needed.**



# OTHER PROGRAMS/ OPPORTUNITIES

# Drop-In Tutoring for Engineering & Computing

Get help in your core STEM courses, engineering & computing specific classes, software, and coding languages.

ESS suite (CEC 2080) & online via Zoom



Tutoring schedule & more info at  
[ess.unm.edu/services/tutoring/](https://ess.unm.edu/services/tutoring/)

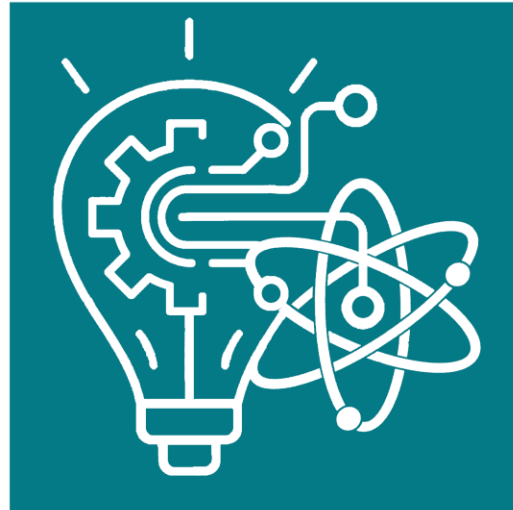
or through our web-app - succESS



A tool for  
engineering your

SUCCESS

This web **APP** allows you  
to keep up to date on all  
we have to offer.



Put your learning into your own hands.



[success.unm.edu](https://success.unm.edu)

*Includes 1-click RSVP*



You are **WELCOME** to ALL events



Spring 2025 Events

We are Student Success

**Pre-Semester Prep Series**

Algebra through Calc 3, Chem 1, Physics 1

**Semester Long Programs**

Mentoring, Internships, Research

**Pizza & Presentation Prep Series**

What is a Conference?  
Designing Effective Presentations  
Data Visualization  
Delivering Presentations

**1st & 2nd Year Student Events**

Student Bash & Find Your Pack  
STEM Mixer  
How to make the most of your learning  
Manage Your Time  
Study Skills  
Fundamentals of MATLAB  
Basic Excel

**Career and Professional Development Events**

Building Connections & Networking  
Resumes and Cover Letters  
Interviewing Basics  
Landing an Internship  
So, What's Next? Start-Ups, Patents, and Publications  
*...and industry site visits...*

**Additional Events**

JEADI Summit  
UROC - Attendance Participation  
Engineering Expo

**Lab Safety Series**

Hazard Communication & Hazard Evaluation  
Hierarchy of Controls & Basics of PPE  
Chemical Waste Management

**WIN** a gift card. **GAIN** experience.  
**BUILD** your skill set. **ENHANCE** your resume.



And more! For more details, visit:  
[ess.unm.edu/events](https://ess.unm.edu/events) OR through our web-app - success

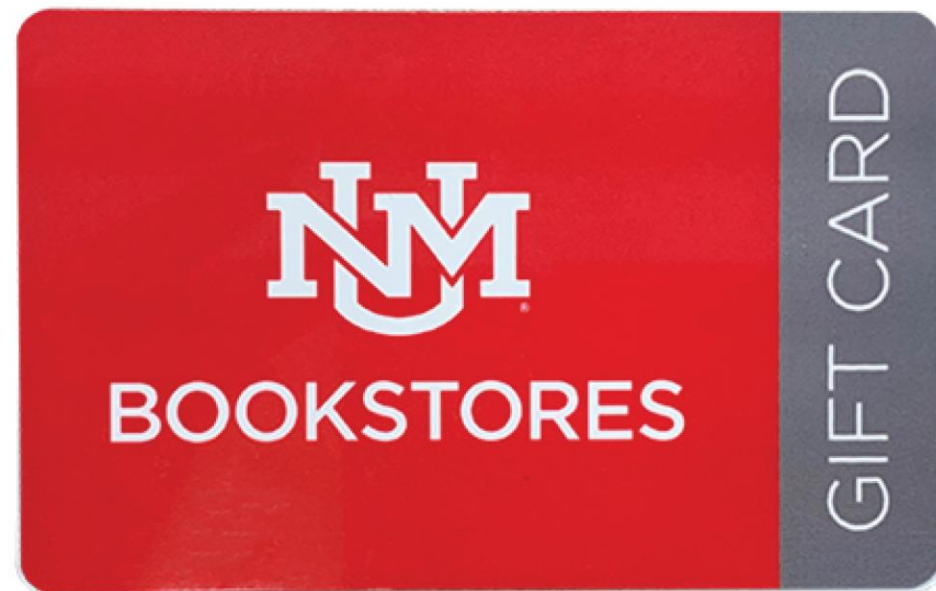




Join our events for **YOUR CHANCE** to win!

Each semester we award **Gift Cards** to the UNM Bookstore based on most attended (with bonus points for providing feedback).

**WIN** a gift card.  
**GAIN** experience.  
**BUILD** your skillset.  
**ENHANCE** your resume.



## Weekly ESS Center Announcements

*Week of August 24, 2021*

*Please share as you feel appropriate.*

ESS HOTLINE: 505-277-4354 | E-mail: [ess@unm.edu](mailto:ess@unm.edu) | Website: [ess.unm.edu](http://ess.unm.edu)

### SUMMARY

*All of our events are FREE and you can...*

*WIN a gift certificate. GAIN experience. BUILD your skill set. ENHANCE your resume.*

- Upcoming Engineering Student Success Center Events and opportunities
  - **This Week**
    - Welcome back to campus and to the Fall 2021 semester
    - Join us at the UNM Communities Day (8/25)
  - **New Announcements**
    - Intel Information Session (9/1)
    - Spatial Visualization Series (9/20, 10/25, 11/16)
  - **Next Week**
    - Lab Safety Matters series (3 part series; every other Tuesday)
  - **Coming Up**
    - Building Connection & Networking (Sept 2)
    - Join our Semester Long Programs (deadline: Sept 5)
      - STEM Mentoring & Peer-mentoring Programs
      - Internships
      - Student Research Experience Program
    - Interviewing Basics (Sept 7)
    - STEM Mixer (Sept 10)
    - Open House (Weekends this fall)
  - **Reminders**

- Sign up to be part of EPICS @ UNM
- Read all about Mari Aoki (athlete) our newest showcased student
- ESS Resource Page
- Together We Stand

- **Other ESS Center/SOE News and Info**

- Job/Research Opportunities/Scholarships
  - Join our Internship Programs
- Other UNM opportunities and news for STEM students
- Community news and opportunities

**Stay informed via our app!**  
"engineering your succESS"  
[SUCCESS.UNM.EDU]SUCCESS.UNM.EDU

Download instructions:  
<https://success.unm.edu/about/howToInstall>



The graphic features the UNM Engineering Student Success Center logo at the top. Below it, the text reads: "Introducing a tool for engineering your succESS". To the right is a blue square icon with a white lightbulb and circuit lines. Below the icon, it says: "This APP allows you to keep up to date on all we have to offer." At the bottom, it says: "Put your learning into your own hands." and includes a QR code, the website "success.unm.edu", and social media icons for Facebook, Twitter, Instagram, and YouTube.

*Please share as you feel appropriate.*



@UNMESSCENTER Follow us on Social Media

We have additional resources for Future Students [HERE](#).

### ENGINEERING STUDENT SUCCESS CENTER EVENTS:

*All students are welcome to attend.*

*More information can be found at <https://ess.unm.edu/events> or through our app ([succESS](#))*

### THIS WEEK:

*Welcome to the Fall 2021 Semester!*

**Join us at the UNM Communities Day (8/25)**

<https://sac.unm.edu/events/welcome-back-days.html>

# ADDITIONAL INFORMATION





1st

2nd

3rd

4th

5th

6th

7th

8th

Open Thursday,  
February 6<sup>th</sup>  
ONLY




Pairs  
announced  
(by Feb 12)



*Reach out to your  
pear*


# If you don't get a match... Make the opportunity for yourself


- Finding a Research Mentor
  - 5 Page PDF
  - Extended edition as a YouTube Video
- WHY Lab


 **ELECTRICAL & COMPUTER ENGINEERING**


The **WHY** lab is an Electrical Engineering and Computer Department Resource **open to all** students who wish to pursue their own **research or class projects**. We provide the **resources and mentoring** needed to develop ideas into results.


 


  
6 Drones

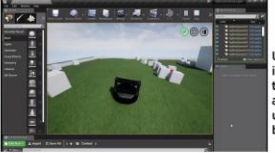
  
6 Ground Robots


  
Haptic Robot

  
15' by 15' by 9' Flight Space 3-Drone Swarm

  
Adaptable platform with Raspberry Pi can carry extra sensors to interact with environment

  
Surgical Trainer Full 6 DOF range of motion with simulated feedback

  
Using the Haptic Robot it is possible to interact with a Drone or Robot and control their movement in the labs space as well as a virtual environment. This is made possible using Quanser's seamless integration between Simulink and UREAL Engine.

  
WHAT do Engineers Do? HOW the heck do you do that? WHY am I taking this course?

Contact Eric Ehrhardt Hamke (ehamke@unm.edu) and Ramiro Jordan (rjordan@unm.edu) if you are interested in using the WHY Lab space.

WIN a book scholarship\*. GAIN experience. BUILD your skill set. ENHANCE your resume.

 **ENGINEERING STUDENT SUCCESS CENTER**

# How to Get Into a Research Lab

As an Undergrad

Part of our Summer Bridge Series Summers  
July & August; 10 - 11:15 AM

Synchronously Hybrid (ESS Suit & Zoom)

     
@UNMESSCENTER

RSVP is preferred, but not required.  
[ess.unm.edu/events](https://ess.unm.edu/events) > July/August  
or through our web-app - **succESS**







**ENGAGEMENT**

**Level**

**AVERAGE**

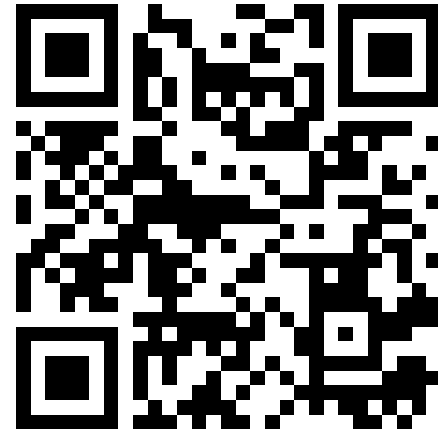
**LOW**

**HIGH**

**MAXIMUM**

# Questions?

Give  
feedback.  
Win a gift  
certificate!



Don't forget to follow  
up on social media.



[goto.unm.edu/ess-feedback](https://goto.unm.edu/ess-feedback)



[ess.unm.edu](https://ess.unm.edu)

or

our succESS web-app

