EM in Research 101 Package

As part of a project to boost the productivity of undergraduate research programs at universities a series of videos and activities were created to expose students to research concepts and opportunities early in their academic careers. These are organized into five modules that can be adapted and used in a variety of freshmen and sophomore level courses. The main outcomes for students will be that they walk away with 1) basic facts about research and research experiences, 2) an understanding of what is called an “Entrepreneurial Mindset” focused on curiosity, connections, and creating value, and 3) a lower barrier of entry for those contemplating opportunities to engage in research. At the end of any course which implements these modules we also have a brief survey to be deployed at the end of the term. Faculty who implement these modules and deploy the accompanying survey in a freshman or sophomore level course will receive a stipend for their participation in this project.

The five modules are organized by video and include the following:

1) What is Research?
    a) “What is Research” Video
    b) “Minute Paper - Research Reflection” Handout
    c) “Minute Paper - Research Reflection” Instructor Guide
    d) “Researcher Interview” Handout
    e) “Researcher Interview” Instructor Guide
2) Why Should I Do Research?
    a) “Why Should I Do Research?” Video
    b) “Why Do Research Reflection Activity” Handout
    c) “Why Do Research Reflection Activity” Instructor Guide
3) What Is The Entrepreneurial Mindset?
    a) “What Is The Entrepreneurial Mindset?” Video
    b) “Exploring Opportunities” Handout
    c) “Exploring Opportunities” Instructor Guide
    d) “Technology in Daily Life” Handout
    e) “Technology in Daily Life” Instructor Guide
4) How Does Research Get Done?
    a) “How Does Research Get Done?” Video
    b) “Find a Grant Program” Handout
    c) “Find a Grant Program” Instructor Guide
5) How Can I Get Involved In Research?
    a) “How Can I Get Involved In Research?” Video
    b) “Research Opportunity Bingo” Handout
    c) “Research Opportunity Bingo” Instructor Guide

Why EM? Why Research?

An Entrepreneurial Mindset is characterized by the 3 C's of Curiosity, Connections, and Creating Value. When students combine an entrepreneurial mindset with their engineering skills they are able to see opportunities around them and bring their ideas to fruition. We want our students to make an impact on the world wherever they apply themselves. Undergraduate research experiences are one of the many opportunities available to our students in their academic pursuits and there is much evidence that students who engage with research make significant gains on a variety of metrics. One of our objectives is to infuse EM within a research context in order for students to be aware of opportunities to engage in research and make the most of those research experiences.

Tips and Tricks for Implementation

- Familiarize yourself with the content and scope of these modules by watching the "EM in Research 101" playlist of videos.
- Identify themes (or existing projects) that are taught in your course that naturally compliment engineering research or emerging technologies.
- Identify course objectives (e.g., from course catalog or syllabus) that align with research and/or EM.
- Read through Instructor Guides for other module-specific tips and tricks.

Minute Paper Research Reflection

Take one minute to reflect on the following questions before taking one minute to write your responses

- What are some questions you are curious about in your field?

- If you were to conduct any type of research what kinds of topics would you pursue?

- What kind of impact would you want to have on the world if you did research?

Research Reflection Instructor Guide

Overview:

This module is meant to be integrated into a freshman-level engineering course to introduce students to an entrepreneurial mindset in the context of research. The purpose of this activity is to have students reflect on the possibilities of pursuing research in their field.

Objectives:

- Introduce Entrepreneurial Mindset in a research context
- Have students reflect on their potential to pursue research

Class time needed: 10 minutes

- 5 minutes – View "What is Research?" Video
- 5 min. – Minute Paper Reflection

Instructor Resources:

- Instructor Guide
- Minute Paper Research Reflection Handout

Class Preparation:

1) Read through the Instructor guide
2) Read through the Minute Paper Research Reflection Handout.
3) Print out the Minute Paper Research Reflection Handouts.
4) Have some device ready to time out exactly 60 seconds.

Procedure:

1) Watch "What is Research?" video.

2) Instruct students to reflect on the possibilities of pursuing a research career. Before distributing the handout, read through the prompts and instruct the students to reflect on their prompts before writing their answers.

3) Distribute **Minute Paper Research Reflection** handout. Have a timer to set up 60 seconds of reflection and 60 seconds of writing.

Interview a Researcher

You will interview a current researcher about their perspective on research and the research process. The researcher can be either a faculty member or a graduate/undergraduate student from LTU or any other university.

Before the interview:

First, you will need to identify a researcher to interview. Consider professors you know from previous classes, research faculty on your department's webpage, or student researchers you have met at campus events. Faculty often have collaborators at other universities that are also good potential interviewees. Once you have chosen a researcher, please reach out to them, asking to schedule 15–20 minutes to interview them about their research and their perspectives on scientific research.

A few things to keep in mind:

- Be flexible. Your interviewee is busy, so work with their schedule to find a convenient time. This may include using a phone or video call instead of an in-person meeting.
- Arrive on time and end the interview promptly. Your interviewee will appreciate your respect for their time!
- If you are meeting in person, dress professionally.
- Prepare your questions in advance. This will help you feel confident and be mindful of the interviewee's time, but feel free to modify questions or let the conversation flow naturally too.

During the interview:

Below is a list of possible questions for your interview:

1. How would you define "research"?
2. Why do you think research is important? What are the most and least satisfying aspects of research?

3. How did you first get interested in research?

4. Tell me about an interesting research project you are currently working on. What spurred this project or research question?

5. What is something in your field that you're curious about? What questions would you like answers to?

6. Have you made any unexpected connections or been involved in multidisciplinary projects in your research career?

7. What are some of the ways that your research (or research broadly) can impact everyday people? How is your research valuable to the world?

8. What are the top 3 traits or skills you would use to describe a researcher?

9. What traits help someone succeed in research? Do you have any advice for students interested in getting involved in research?

Feel free to use or modify these questions. You should also generate at least one question of your own.

You may want to take notes during the interview to help with your reflection later. Bring a notebook or a few sheets of paper along with your interview questions. If you would like to record the interview, remember to ask your interviewee for permission.

After the interview:

Take 15-20 minutes after the interview concludes to reflect on your experience. Answer the following questions:

1. Did the interviewee's definition or description of research differ from your perception of research? Did it differ from the definitions included in the video?
2. How did this interview influence the way you think about research (if at all)?

3. Did this interview make you feel more confident about participating in research? Why or why not?
4. Do you identify with any of the traits of a successful researcher named by your interviewee? Were you inspired by any of the projects you discussed?
5. What surprised you most about this interview?

Don’t forget to send your interviewee a thank you email!

Get Involved in Research: Interviewing a Researcher Instructor Guide

Description: In this session you are going to prepare your students to conduct meaningful interviews with a faculty member about their research. Students will learn how to plan interview questions that yield detailed answers. They will break into groups of two to brainstorm a series of questions and follow-up questions. Then they will test their questions in mock interviews with a new classmate. This practice will help them to prepare questions for their faculty interview assignment, which they will be given three weeks to complete.

Learning Objectives:

By the end of this session, students should be able to…

Connect with a classmate that they do not yet know well

Create a series of interview questions to explore their curiosity about doing research

Develop a framework for leading a valuable conversation with a faculty member

Instructor Tips:

Open the session by explaining that research is the means by which humanity gains new knowledge, and that the university system plays a critical role in generating and disseminating new knowledge throughout society. Some research results in knowledge that is made available freely, some results in new Intellectual Property that can be used to file for patents, form new companies, or develop new technologies to be marketed by existing companies. The process of conducting research and communicating the results helps individual people to increase their personal knowledge, skills, and abilities. While it is not exactly necessary for every engineering student to get involved in research in order to be hired after completing their degree, having some research experience will make them more appealing to hire. But research may also open up new opportunities that would otherwise not be available.

Activity:

Have your students write down a series of questions to ask a generic faculty member in an interview that get at the following benefits of research:

What got them started doing research

How research changed them as a person

Opportunities that arose through research

What research they do now

Other aspects of research as well…

Encourage the students to phrase their questions to be engaging on a personal level. After some time preparing the questions, have them conduct mock interviews with their peers in class. Have

the peers do their best to assume the role of a faculty member when they sit as the interviewee. Give them a few minutes to conduct their mock interviews and then have them rotate roles.

After completing the exercise, debrief as a class. Ask the students to volunteer to share questions that they think worked well, write them on the screen, and discuss what made the questions effective.

Variations:

- After preparing questions for the faculty members, you could have the students conduct actual interviews with their peers, but instruct them to replace "research" with their peer's favorite pastime activity (music, sports, gaming, etc.) to help them get to know one another. During debriefing, ask them if they think the questions would translate effectively for the context of a faculty interview.
- This exercise could easily be run as a Think-Pair-Share activity where students create the questions first by themselves, then as a team, and then share with the classroom. In this manner the exercise may be done without the mock interviews, which may be a good idea if there is not enough class time available.
- Another variation might be for a brave student or team of students to interview the class instructor in class after creating the interview questions, with a debriefing discussion held afterward.

Follow-up:

If you haven't done so already, give them the faculty interview assignment. It would probably be a good idea to give them one week to simply arrange the interview, and then another week or two to conduct the interview. Finally, give them a week to write up and submit a summary of their findings.

Note:

The author of this exercise has found that conducting interviews of this nature can serve as an effective Independent Study course for students whose life circumstances preclude them from taking their freshman survey course. Have them prepare and conduct interviews with a handful (~5) faculty members in a semester and write ~600 word summaries of the interviews that highlight the faculty member and their professional work. The resulting write-ups can then be used by the department or college's communications team to highlight the faculty interviewees, which can be a service credit for the instructor as well as the interviewees.

Why Do Research? Reflection Activity

In pairs or in a small group, answer these reflective questions in the time allotted:

1. List some of the technologies that you used/were exposed to from when you woke up this morning until this class. At one point these items were just an idea that needed development and that is where research comes in. Think about a world without these technology items. What would that be like?

2. What are some reasons why people do research? list as many as you can think of and be creative.

3. Research generates a lot of benefits for the researcher and society. What do researchers get out of the process? What about society/people in general? Write down as many as you might think of.

4. Reflect on what job you would like to have after graduation. How might a research experience help you succeed in that career?

Why Do Research?: Reflection Activity

Description

This a reflection exercise only without the use of video. Should the accompanying video become available the instructor can do the post video questions contained in the EM in Research 101 Activities. For now, this will be a series of four reflective question times which will be posed to groups from two to four. Some introduction is assumed like "What is Research?" should be already addressed. If not students should be asked to define research prior to the reflective questions. The students will be asked to answer the reflective questions and a short discussion time after each question will be facilitated by the instructor. The four questions are in the "Why do Research Refection Activity" handout.

Explanation time:

2-3 minutes introduction
2-3 minutes per each reflective question (4)
3-4 minutes after each reflective question
2-3 minutes closure

Total Completion time: *total 15-22 minutes*

Learning Objectives

Students often do not take the time to examine the technology around them, to imagine what it took to commercialize that item, and how their life has been impacted by the item. The next step is to look at what the world would be like without that item (think cell phones, personal computers, cars, etc…)

Through this activity, students will:

1. Gain an appreciation for the technology around them that they use every day.
2. Identify reasons people might be involved in research.
3. Describe the benefits of research to the researcher and society?
4. Discuss how research might impact their hope for a job/career after graduation.

Instructor Tips

- This is to be an in class only exercise to stimulate thought about research.
- More or less time could be allocated depending on student interest and reaction.
- An out of class activity to research in more depth one particular technology and trace its development might be appropriate. This could identify what role research played in this development.

Materials

Handout with reflective questions might be appropriate.

Procedure

This would be done in class when appropriate. Probably it should be an activity at the beginning of a class to keep the student interested. Encourage students to come talk about research if they are interested, especially due to the last question.

Exploring Engineering Opportunities Activity

There are opportunities all around us. Engineers need to be able to take the frontiers of knowledge and research and make connections to problems that the general population face every day. You will be brainstorming ways that research being done today could impact people's daily problems in the future.

1. Individually find some of the research topics that faculty at your university (optionally, from your chosen major) are interested in. This can be found from their personal or faculty webpages and their publications through JSTOR or Google Scholar. List the research interests of at least two faculty.
2. In groups of 2-3, make a list of problems in the daily lives of the group members (health, daily tasks, everyday annoyances, etc.). If you are feeling stuck, expand out to the problems of your friends, relatives, coworkers, etc.
3. Take your two lists (faculty interests and daily problems) and brainstorm ways that the research topics could potentially impact those daily topics. Be curious! Explore online resources and journal papers on these topics for inspiration.
4. Write a short summary (3-4 sentences) of at least 5 different ideas you have brainstormed together as a group for submission. Summaries need to communicate the concept, the problem it intends to solve, and its connection to current research.

Exploring Opportunities Activity

Overview:

The purpose of this activity is to have students start to make mental connections between problems they see around them and the research interests of faculty at their university. After watching the "EM in Research" video, students will be asked to take these connections and brainstorm ways that the research could impact those daily problems.

Objectives:

- Introduce Entrepreneurial Mindset in a research context
- Show connections between research ideas and everyday products

Materials:

Notebooks, note-taking devices, on-campus access to scholarly articles

Class time needed: 45-60 minutes

- 5 min. – "EM in Research" Video
- 10 min. – Finding faculty research interests
- 30-45 min. - Brainstorming

Instructor Resources:

- Instructor Guide
- Exploring Engineering Opportunities Handout
- Link to "EM in Research" Video

Class Preparation:

1) Read through the Instructor guide.
2) Read through the Exploring Engineering Opportunities handout.
3) Print out the Exploring Engineering Opportunities handouts.

4) Optional: Pre-assign student groups of 2-3.

Procedure:

a) Watch “EM in Research” Video.
b) Students individually find some of the research topics that faculty at your university (optionally, from their chosen major) are interested in. This can be found from personal or faculty webpages and their publications through JSTOR or Google Scholar. List the research interests of at least two faculty.
c) In groups of 2-3, students will make a list of problems in their daily lives (health, daily tasks, everyday annoyances, etc.).
d) Students will then compare their two lists (faculty interests and daily problems) and brainstorm ways that the research topics could potentially impact those daily topics.
e) As homework, they will write a short summary (3-4 sentences) of at least 5 different ideas you have brainstormed together as a group for submission. Summaries need to communicate the concept, the problem it intends to solve, and its connection to current research.

Technology in Daily Life

1) Brainstorm a list of 10 to 15 products/devices/technologies that you use in your daily life:

2) Pick one of those items and write a 1-page summary of how that product went from a research idea to a usable product (with references separate from the 1-page limit). Your summary should answer the following questions:

   - What is the product and who makes it?
   - What discoveries/innovations made this technology possible?
   - What other steps were necessary to make this technology useful to you?
   - How does this product/device/technology benefit you?

Technology in Daily Life

1) In your group, brainstorm a list of 10 to 15 items of products/devices/technologies that your group members use daily:

2) As a group, pick one of those items and create a short presentation (10 minutes) summarizing how that product went from a research idea to a usable product (with references). The presentation should answer the following questions:

    - What is the product and who makes it?
    - What discoveries/innovations made this technology possible?
    - What other steps were necessary to make this technology useful to you?
    - How does this product/device/technology benefit you?

Instructor Guide - Technology in Daily Life

Overview:

This module is meant to be integrated into a freshman-level engineering course to introduce students to an entrepreneurial mindset in the context of research. The purpose of this activity is to expose students to the stories of how products that they use every day went from ideas and experiments to physical items for purchase. Students will first view the "EM in Research" video before brainstorming a list of products they use in their daily lives. They will then find reference materials in order to summarize the history of research and innovation which resulted in the creation of that product. This activity can be run as either an individual written assignment or a group presentation.

Objectives:

- Introduce Entrepreneurial Mindset in a research context
- Show connections between research ideas and everyday products

Class time needed: 35-125 minutes

- 10 min. – Watch "EM in Research"
- 25 min. – In-class brainstorming session
- 45-90 min. – Presentations (if Presentation version, dependent on class size)

Instructor Resources:

- Instructor Guide
- Link to "EM in Research" video
- Technology in Daily Life (Written) Handout
- Technology in Daily Life (Presentation) Handout

Class Preparation:

1) Read through the Instructor guide

2) Read through the Technology in Daily Life handouts.
3) Print out the Technology in Daily Life handouts (for either the written assignment or presentation).
4) Optional: Pre-assign student groups of 2-3.

Procedure (Written Assignment):

1) Watch "EM in Research" video.

2) Distribute **Technology in Daily Life (Written)** handout.

3) Students will individually brainstorm a list (10 to 15 items) of products/devices/technologies that you they use daily.

4) They will then pick one of those items and write a 1-page summary of how that product went from a research idea to a usable product (with references separate from the 1-page limit).

Procedure (Presentation):

1) Watch "EM in Research" video.

2) Distribute **Technology in Daily Life (Presentation)** handout.

3) Have students form groups of 2-3 where they will brainstorm a list (10 to 15 items) of products/devices/technologies that they use daily.

4) Students will then pick one of those items and create a 5 min. presentation summarizing how that product went from a research idea to a usable product (with references).

5) During the next class period, they will give their presentations in front of the class.

Find a Grant Program

Part 1 - Take one minute to reflect on the following questions before taking one or two minutes to write your responses

- What do you think the process of doing research is like? What are the first steps?

- Who funds research? Why are they funding that research?

- When a research project is completed, what happens? How does research impact the world?

Part 2 – After watching the "How Research Gets Done" video, reread your answers to the prompts from Part 1 and take one or two minutes to answer the following questions:

- How did the video change your perception of university research?

- The process for university research can be complicated and time consuming. Did any steps in the research process surprise you?

Part 3 – Homework

a) Choose one area of research in your field that interests you. Look up various funding agencies (National Science Foundation, Department of Energy, Department of Defense, etc.) and try to find

a grant program which awards funds to researchers in that area. Give the name of the funding agency and the grant program along with a brief summary of the purpose of that grant program.

b) Find one project which has been funded through that program (this is often found on the grant program page). What kind of impact did the researcher aim to achieve with their work? How could their work have impacted you or people you know?

Find a Grant Program Instructor Guide

Overview:

This module is meant to be integrated into a freshman-level engineering course to begin to take away the "mystery" about how research gets done and explain why society pays for publicly funded research. In the context of the university we need to show what research looks like primarily in the lab context. Students should appreciate what goes on behind the scenes about how a lab is funded and accomplishes research and why agencies fund that research. This activity begins with a reflection "minute paper" and then a homework assignment to investigate grant programs.

Objectives:

- Have students reflect on their ideas about research
- Have students understand the process of starting and engaging in research
- Make students aware of how and why research is funded

Class time needed: 15-20 minutes

- 5 min. – Minute Paper Reflection
- 5 min. – Watch "How Research Gets Done" Video
- 5 min. – Post-Video Reflection

Instructor Resources:

- Instructor Guide
- Link to "How Research Gets Done" Video
- "Find a Grant Program" Handout

Class Preparation:

1) Read through the Instructor guide
2) Read through the "Find a Grant Program" Handout.
3) Print out (if necessary) the "Find a Grant Program" Handouts.
4) Have some device ready to time out exactly 60 or 120 seconds.

Procedure:

1) Instruct students to reflect on the process of doing research. Before distributing the handout, read through the prompts and instruct the students to reflect on their prompts before writing their answers.

2) Distribute **Find a Grant Program** handout. Have a timer to set up 60 seconds of reflection and 60 seconds of writing. Have the students write their responses to **Part 1** of the handout.

3) Watch the **How Research Gets Done** video.

4) Have students reread their answers to **Part 1** and then respond to the prompts of **Part 2** either individually or with a partner.

5) Assign students **Part 3** of the handout as homework. Show the students the NSF website as an example resource where they may find information to complete the assignment.

RESEARCH OPPORTUNITY BINGO

Ask a professor a question about their research during office hours	Make a list of 3 faculty working on research that interests you	Interview a graduate student about their research	Search for “Undergraduate Research” on the school’s website	Ask an undergraduate researcher about skills they have learned during research
Subscribe to a newsletter for an academic journal in an area of interest	Visit a poster session on campus	Update your resume or CV	Ask a professor about their process for hiring student researchers	Follow 5 researchers or academic scientists on social media
Identify student groups focused on getting students involved in research	Search for summer research programs online and write down 3 of interest	**FREE**	Attend office hours to ask how a concept from class could relate to research	Draft an email to a professor asking if they have room for an undergraduate research assistant
Email an undergraduate researcher to ask how they got involved	Ask a professor for advice for students looking for research opportunities	Identify 3 areas of research or questions that interest you	Shadow a graduate student for an afternoon	Visit the career center to ask about research internships
Look up possible research or research methods courses at the school	Email your academic advisor about opportunities to do research for course credit	Read a research article written by someone from the school	Attend a department seminar	Prepare a list of 3 questions to ask during an interview for a research position

Get Involved in Research: Research Opportunity Bingo

Description

In this activity, students will receive a “bingo” card with different tasks designed to help them identify ways to get involved in research on their campus. Students will mark off a square for each task they complete until they mark off all squares in a single row/column/diagonal. At their discretion, instructors can award prizes for different types of “bingo” (e.g., “X”, blackout).

Explanation time: *10 minutes*
Completion time: *Varied*

Learning Objectives

Students, especially those early in their undergraduate careers, often do not have a good understanding of how to get involved in research on campus. The barriers include: (1) a lack of awareness about seminars, student organizations/programs, and research offices that host events and provide resources about research; (2) hesitancy to build relationships with faculty to hear more about departmental research and share their interests; and (3) missing or out-of-date materials that are needed for interviews, such as a resume. The goal of this activity is to encourage students to get involved by gamifying a set of activities designed to address one or more of those barriers.

Through this activity, students will:

1. Identify multiple ways to get involved with research on a college campus.
2. Complete at least 5 different activities that will familiarize them with the research process, help them identify research opportunities, or prepare them to apply for research opportunities.

Instructor Tips

- We include a sample Bingo card and a predefined list of tasks that can fill a 5x5 bingo card. Copy this list of tasks into a free bingo card generator (e.g., https://myfreebingocards.com/) to create additional permutations and custom grid sizes.
- Add or edit these tasks to make them specific to your institution. For example, include the names of events, organizations, and offices on campus, or tie the tasks into other elements of the course material (e.g., readings, course deliverables).
- Ensure that each row/column contains tasks that vary in the level of difficulty or time required for completion. This will encourage a diverse range of completed “bingos”.

Variations:

1. Change the amount of time provided to complete the bingo card. For a shorter game, select a set of tasks that can be done with a laptop and/or a sheet of paper; have students complete the activity during class. For a more involved set of tasks (e.g., attending research presentations, meeting with faculty), provide several weeks.
2. Print out blank bingo cards. Have students work in groups to fill out a list of tasks and swap cards with another group before filling them out.

Tasks (*for instructors*)

- Ask a professor a question about their research during office hours
- Make a list of 3 faculty working on research that interests you
- Interview a graduate student about their research
- Search for “Undergraduate Research” on the school’s website
- Ask an undergraduate researcher about skills they have learned during research
- Subscribe to a newsletter for an academic journal in an area of interest
- Visit a poster session on campus
- Update your resume or CV
- Ask a professor about their process for hiring student researchers
- Follow 5 researchers or academic scientists on social media
- Identify student groups focused on getting students involved in research
- Search for summer research programs online and write down 3 of interest
- Attend office hours to ask how a concept from class could relate to research
- Draft an email to a professor asking if they have room for an undergraduate research assistant
- Email an undergraduate researcher to ask how they got involved
- Ask a professor for advice for students looking for research opportunities
- Identify 3 areas of research or questions that interest you
- Shadow a graduate student for an afternoon
- Visit the career center to ask about research internships
- Look up possible research or research methods courses at the school
- Email your academic advisor about opportunities to do research for course credit
- Read a research article written by someone from the school
- Attend a department seminar
- Prepare a list of 3 questions to ask during an interview for a research position

Materials

One bingo card per student

Procedure

This bingo card contains different tasks to help you identify ways to get involved in research on our campus. For each task that you complete, cross off the corresponding square. When you cross off all of the squares in a single row, column, or diagonal—that’s “bingo”!

Achieve at least one “bingo” to get full credit for this activity.

Research Bingo

This bingo card contains different tasks to help you identify ways to get involved in research on our campus. For each task that you complete, cross off the corresponding square. When you cross off all of the squares in a single row, column, or diagonal—that's "bingo"! Achieve at least one "bingo" to get full credit for this activity.

RESEARCH BINGO				
Ask a professor a question about their research during office hours	Make a list of 3 faculty working on research that interests you	Interview a graduate student about their research	Search for "Undergraduate Research" on the school's website	Ask an undergraduate researcher about skills they have learned during research
Subscribe to a newsletter for an academic journal in an area of interest	Visit a poster session on campus	Update your resume or CV	Ask a professor about their process for hiring student researchers	Follow 5 researchers or academic scientists on social media
Identify student groups focused on getting students involved in research	Search for summer research programs online and write down 3 of interest	**FREE**	Attend office hours to ask how a concept from class could relate to research	Draft an email to a professor asking if they have room for an undergraduate research assistant
Email an undergraduate researcher to ask how they got involved	Ask a professor for advice for students looking for research opportunities	Identify 3 areas of research or questions that interest you	Shadow a graduate student for an afternoon	Visit the career center to ask about research internships
Look up possible research or research methods courses at the school	Email your academic advisor about opportunities to do research for course credit	Read a research article written by someone from the school	Attend a department seminar	Prepare a list of 3 questions to ask during an interview for a research position