# College2Career Forum: National Weather Center

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## Essential Question(s)

- What steps do I need to take to reach my future goals?
- How can I apply the career information to my current postsecondary plans and academic opportunities?

## Summary

The College2Career Forum: National Weather Center (NWC) focuses on career exploration in STEM fields related to meteorology while visiting a Post Secondary Institution (PSI) campus and a federal institution. Students will explore the OU College of Atmospheric and Geographic Sciences and NWC federal building to connect career information with current academic learning while discussing plans for postsecondary opportunities. Students will interact with career professionals from a variety of different meteorology and STEM related careers, learn of the different pathways that exist within the field, and engage in hands-on activities related to data collection, field work, and engineering.

## Learning Goals

- Explore a PSI (Federal National Weather Center and OU College of Atmospheric and Geographic Sciences).
- Connect career information to current academic opportunities and plans for postsecondary education.
- Collaborate with career professionals while completing hands-on activities.

## Attachments

- Road Map to Success—College2Career Forum - Spanish.docx
- Road Map to Success—College2Career Forum - Spanish.pdf
- Road Map to Success—College2Career Forum.docx
- Road Map to Success—College2Career Forum.pdf
- Visualize Your Career—College2Career Forum - Spanish.docx
- Visualize Your Career—College2Career Forum - Spanish.pdf
- Visualize Your Career—College2Career.docx
- Visualize Your Career—College2Career.pdf

## Materials

- Road Map to Success handout (attached; one per student)
- Visualize Your Career handout (attached; one per student)
- Name badges (optional)
- T-shirts (optional)
- Pens/Pencils
- Electronic devices (optional)

10 minutes

# Engage

**Facilitator Note: Disclaimer**

The following description of what to expect from this National Weather Center (NWC) forum event reflects the common structure but may be subject to change based on availability and/or the professional(s) leading your event. For example, professional slide shows may change and/or activities may differ.

Prior to facilitating any forum event, see our College2Career Forum: How to Guide for more information on how to set up a specific forum.

Once you have arrived on site, be sure to check that your mode of transportation has the appropriate parking pass or availability as needed. Walk with your students to the site and meet your career professional(s).

Before students hear from the professional(s), provide a brief welcome and overview of the day. This overview can include "housekeeping items" such as restroom location, where to store bags, and electronic device policies.

Next, have students use the Fist to Five strategy to gauge what they already know about the careers, institution, and/or degree field they will explore during this visit. Tell students to hold up:

- 0 fingers (a fist) if they know nothing at all
- 1 finger if they have a little understanding
- 2 fingers if they know something but need clarification
- 3 fingers if they have basic knowledge
- 4 fingers if they have an advanced understanding
- 5 fingers if they are an expert and can teach others

Have students share-out their prior knowledge if they are a 3 to 5 and things they want to learn if they are a 0 to 2. Repeat the sharing out process as often as needed.

Once students have shared their experiences, move on to introducing the career professional(s).

90 minutes

# Explore

A collection of professionals from the National Weather Center (NWC) will help facilitate your College2Career Forum. Students will begin by listening to a career speaker from a specific meteorological sector discuss their role, background, and educational pathway. This speaker's presentation is designed to expand students' perceptions of the meteorology field and open their eyes to many opportunities outside of simply being a storm chaser or weather broadcaster.

After the initial presentation, students will tour the NWC, including visiting the observation deck, research labs, libraries, classrooms, the Storm Prediction Center, and local Weather Forecast Office. This tour will be guided by an official from the OU College of Atmospheric and Geographic Sciences who can answer any questions your students may have.

Afterwards, students may have the opportunity to visit the vehicle bay on the first floor of the NWC. Here they will learn more about the technical and engineering side of working at the NWC and engage in hands-on activities. Some of these activities could include wiring weather data collection instruments designed for severe weather vehicles and/or outfitting and launching a weather balloon, which receives real-time data students can practice manipulating.

Students will then return to the classroom where they began the day to hear from other professionals who operate in different sectors of the meteorology field, focusing more on the research side of the field. These professionals may include those working at the Storm Prediction Center, local Weather Forecast Office, National Severe Storms Laboratory, etc. Students may eat lunch during the final presentation if time and the speaker allow.

**Facilitator Note: Group Sizes**

Ask your NWC contact for information about group sizes. If you have a larger group (over 15) you may ask the NWC staff to split your students into two groups so that everyone can participate in the hands-on activities more easily.

15 minutes

# Explain

Have students use the instructional strategy Think Pair Share with someone who participated in a different aspect of the activity than they did. Students should turn and talk to their neighbor about the part of the activity they just engaged in. Students will also have the opportunity to ask questions about the degree program and/or career.

**Facilitator Note: Student Engagement**

As the chaperone, your main role through this section is classroom management and encouraging student questions and participation.

25 minutes

# Extend

Usually, professionals give a recruiting pitch about how students can attend their PSI (i.e. cost, housing, scholarships, etc.) or pursue job opportunities (i.e. internships, “on the job training,” etc.) while students eat lunch. Provide a space for students to ask any clarifying questions.

If time and resources permit, pass out the attached **Road Map to Success** handout to each student. Direct them to the https://www.mynextmove.org/ website or the K20 career clusters resource (http://k20.ou.edu/careers) and have them follow the directions on their handout to find what they need. Explain that they should complete the handout based on their individual searches. If students need help, encourage them to research careers similar to those of the presenting professional(s) or within the same career cluster.

**Facilitator Note: Road Map to Success Activity**

If time does not permit, or students don’t have electronic devices available, consider completing this activity upon returning to campus.

15 minutes

# Evaluate

Upon returning to your campus and after participating in the College2Career Forum events, use the Mirror, Microscope, and Binoculars strategy to have students reflect on the experience. Pass out the attached **Visualize Your Career** handout to each student and allow them time to reflect on what they learned. Explain the following in as much detail as needed:

- **Mirror** (self reflection): *How do I feel about the career(s) I experienced today? Has this experience helped me think about what I want to do after high school?*
- **Microscope** (close inspection/details): *What are some of the smaller details of the career(s) I experienced today that I hadn't thought about before? How do my skills fit with this/these position(s)?*
- **Binoculars** (bigger picture): *Can I see myself in this career field later in life? How does this field play a role in the bigger world?*

# Research Rationale

As research continues, it is becoming increasingly evident that simply telling students about PSI opportunities or career fields isn't enough. Teachers need to give students impactful, relatable, and engaging experiences so that they can actively explore these options. Not only do these experiences help students explore future opportunities, they can also lead to career success later in life. Research shows a strong correlation between career success later in life and job shadowing and workplace visits as a teen. One study found that Canadian students who made a workplace visit by age 15 were 4% less likely to be NEET (Not being in Education, Employment, or Training) than their peers at age 25 (Covacevich et al. 2021). The same study found that Korean students who made the same type of workplace visits were 1.23 times more likely not to be NEET than those who did not take a visit.

**Work-Based Learning**

In making college and career decisions, Work-Based Learning (WBL) opportunities can provide secondary students with experience, clarity, and increased self-efficacy. Field-based learning is a powerful tool in helping students to better understand the core concepts and to raise their enthusiasm (Janovy & Major, 2009; Manzanal et al., 1999, as cited in Pereira & Gheisari, 2017). These experiences also enable students to interact with professionals and perceive fieldwork in a way that is unattainable in a traditional school setting. A research project by Pereira and Gheisari (2017) studied faculty perceptions of the effectiveness of construction site visits during construction courses. The researchers found that faculty members believe observing the construction environment is critical for the students (Pereira & Gheisari, 2017). With student benefits and faculty acknowledgment, WBL can provide a compelling experience for students.

Another WBL study of eleven low-income, ethnic minority, secondary students aimed to gauge the impact of a school's WBL program. Through data analysis of student interviews, the study revealed that the WBL program promoted hope for their future academic and career success as well as support and mentorship through workplace supervisors within the program (Medvide & Kennedy, 2020). This hope, support, and mentorship give students—especially low-income students whose backgrounds and lived experiences may hinder them—the self-efficacy to reach their full potential.

**Hands-on Educational Experiences**

Several research projects prove that hands-on educational experiences can positively impact students' academic and work-related outcomes. One such study followed a group of Australian secondary school students through a year-long science program. This program aimed to strengthen students' science skills in data analysis, experimentation, and scientific writing through current, hands-on research within the context of a significant worldwide health issue (Puslednik & Brennan, 2020). The research team found that the intervention reflected in students' mean score of knowledge growth—per a self-assessment survey—rose considerably. They also found, through VALID 10 testing, that 84% of intervention students would have scored lower on their tested science knowledge, problem-solving, communication, and planning skills than the control group's mean score (Puslednik & Brennan, 2020).

Another similar study evaluated the effectiveness of a hands-on learning experience in cancer research for 20 secondary students. After a two-week science summer camp at The University of the Pacific, the researcher found that 83.33% of the students were interested in participating in another hands-on science learning experience, and the same number reported increased interest in attending The University of the Pacific as their Post Secondary Institution (PSI) (Argueta et al, 2020). These results showcased the impact and importance of hands-on learning for high school-aged students when considering their future academic and career endeavors.

## Resources


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