

Reflections on a Dozen Years of the NWS Raleigh-NC State University Internship Course: Best Practices and Lessons Learned

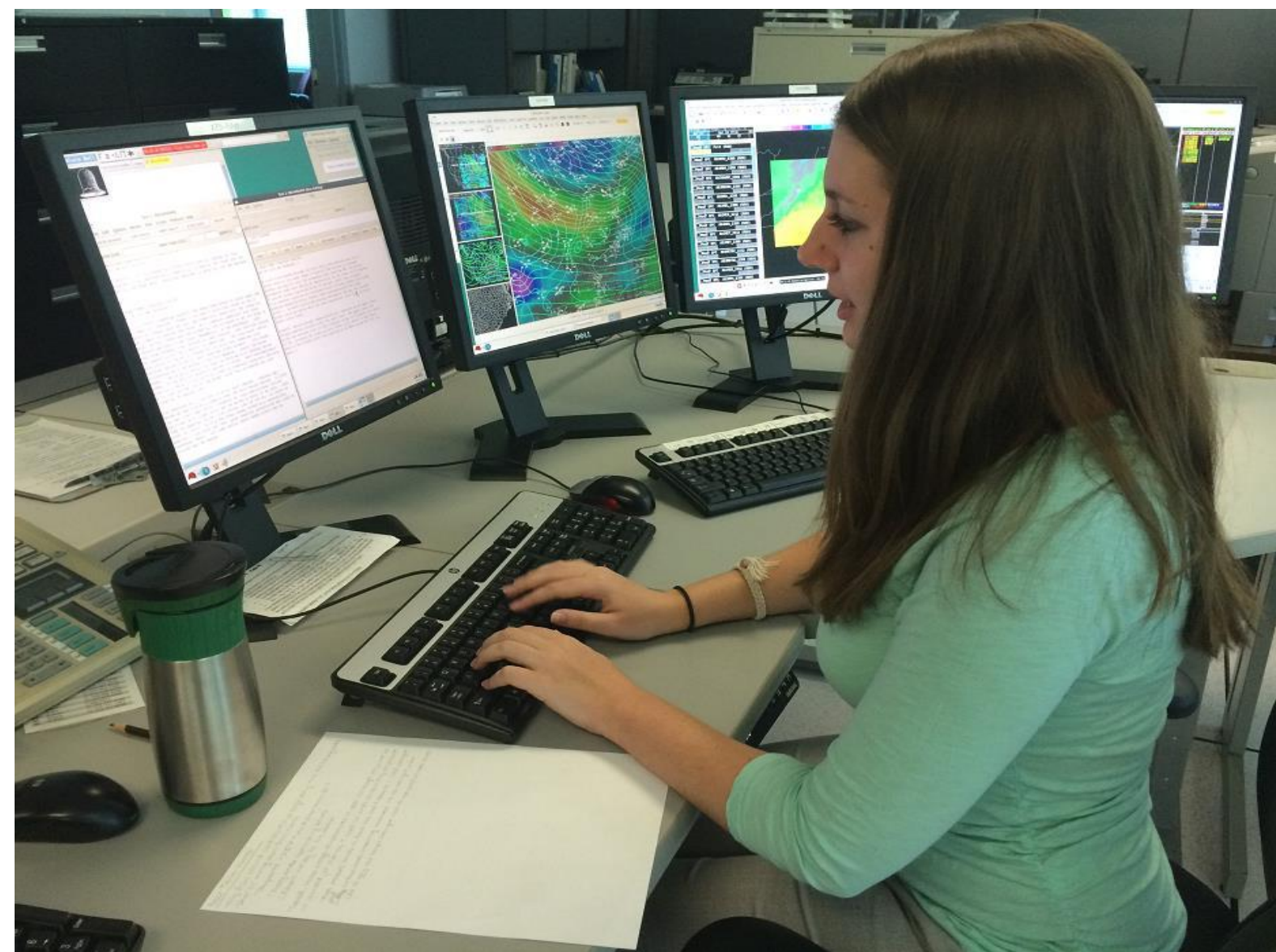
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NC STATE UNIVERSITY

Course Description

- Launched in 2004, the internship is a semester long, two credit hour course for credit offered each year for meteorology majors at NC State University interested in a career in operational weather forecasting.
- Activities include participation in routine shift operations at the NWS, data collection, meteorological analysis, subjective hand analysis, writing area forecast discussions, and using NOAA Weather Radio. In addition, students participate in various training activities, seasonal familiarization sessions, simulations using the weather event simulator (WES), site visits, and outreach activities.

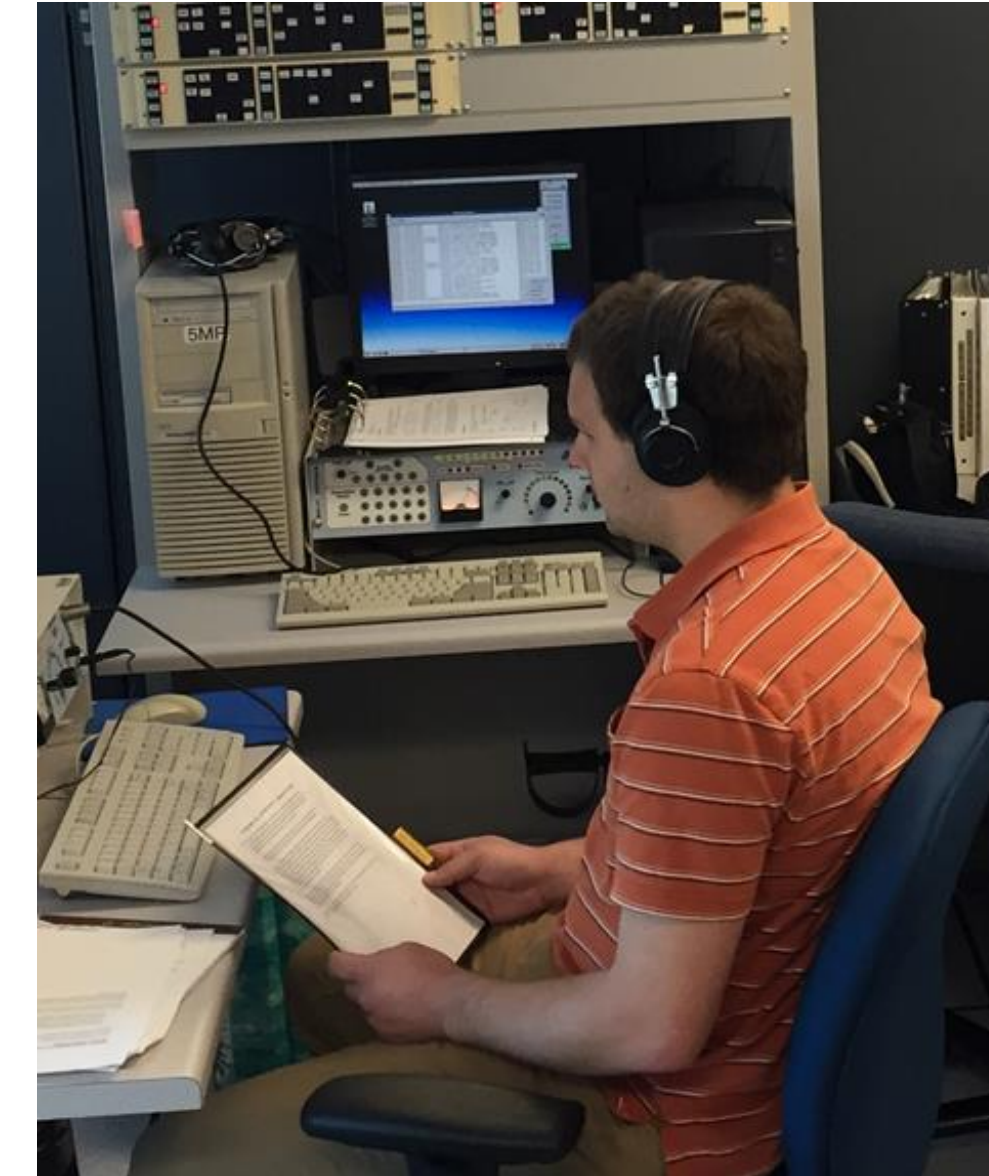
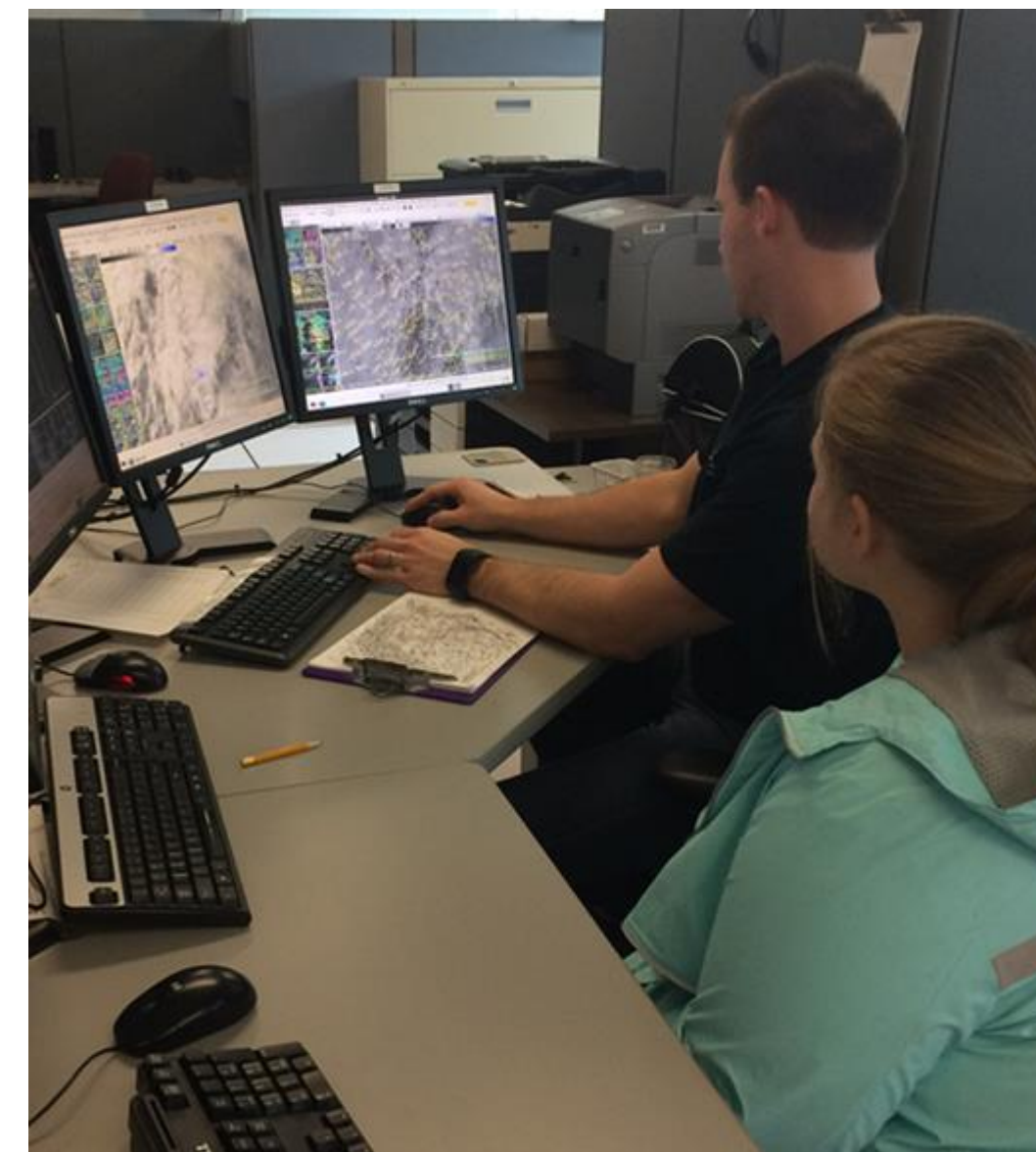


Purpose

- The course is an important component of an established relationship between the NWS Raleigh and NC State that stretches over 3 decades
- Provides a vehicle for student professional development beyond what the classroom can provide so that students can experience meteorology through an operational perspective
- Allows students to sample the broad array of work performed by the NWS
- Provides students with sense of contribution to NWS operations through gaining efficiency with selected routine duties

Logistics

- Undergraduate seniors or graduate students who have completed synoptic meteorology are eligible to participate.
- Candidates apply for the course and are selected based on several factors including a cover letter describing their interest in the course and relevant personal interest, experience, resume, and in-person interview
- Students must pass a background check and complete required information technology security and safety training.
- Interns individually complete weekly job shadow shifts with forecast staff while participating in a wide variety of analysis and forecast activities in addition to weekly pre-requisite training and other special activities.
- Students participate in numerous group activities including:
 - Visits to the Doppler radar, an ASOS site, river gauge, and a radiosonde release.
 - An individual WES exercise for each student
 - Various training opportunities
 - Outreach activities such as Skywarn spotter training, educational presentations, and community fairs.
 - A primer on applying for NOAA/NWS positions
- Students submit a personal journal of their experiences every two weeks.

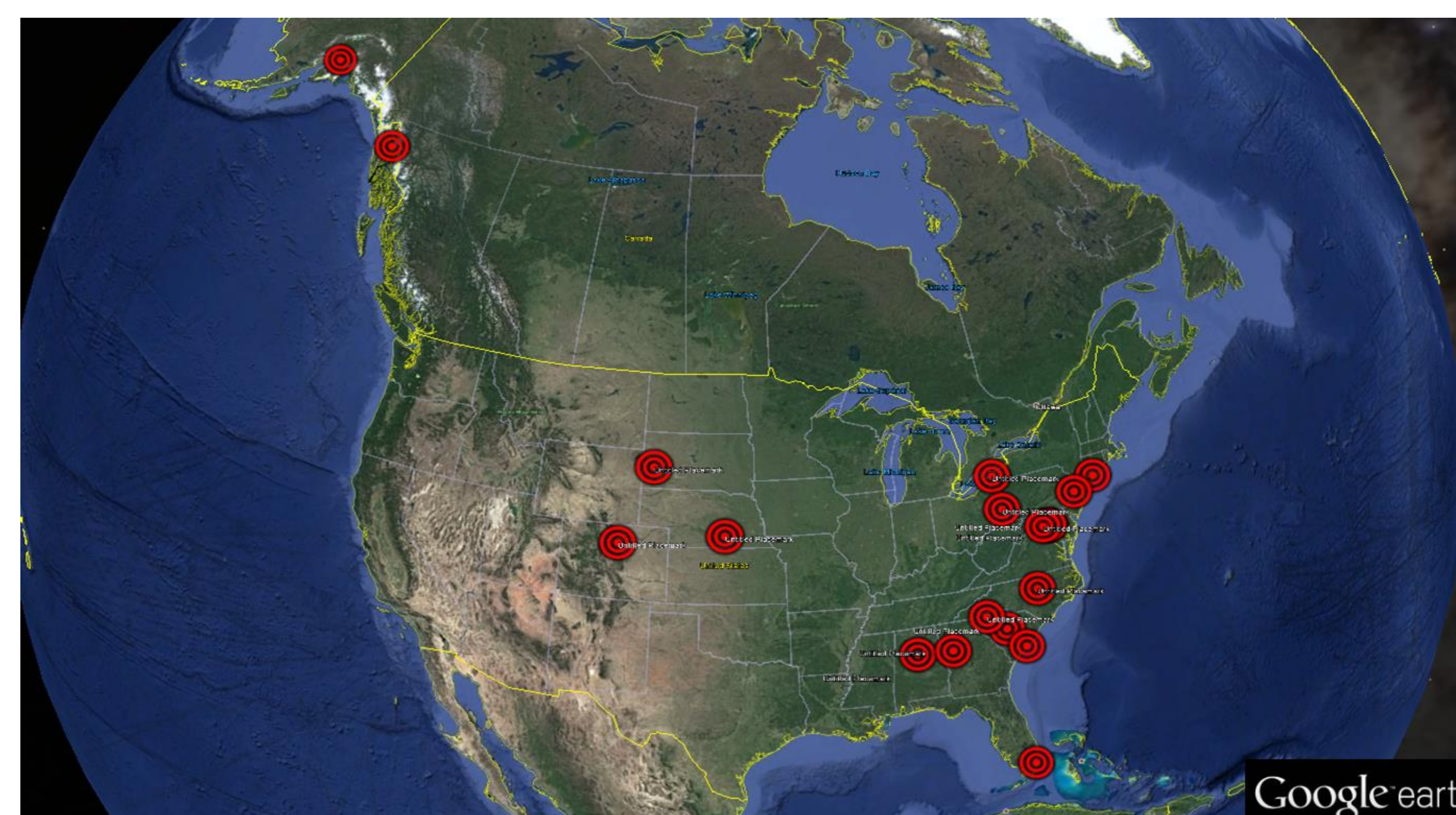


Course Benefits

- Supports the NWS-NC State collaboration by strengthening the relationship and creating opportunities for all parties
- NWS - Can identify and develop talent for NOAA/NWS employment
- NWS - A course is more efficient than individual internships and allows the NWS to accommodate more students
- NC State - The course provides a significant recruiting tool for prospective students and faculty
- Students - Gain an advantage to secure employment with NOAA/NWS or elsewhere in atmospheric science
- Students - Establish relationships with NWS staff that can lead to additional opportunities or projects

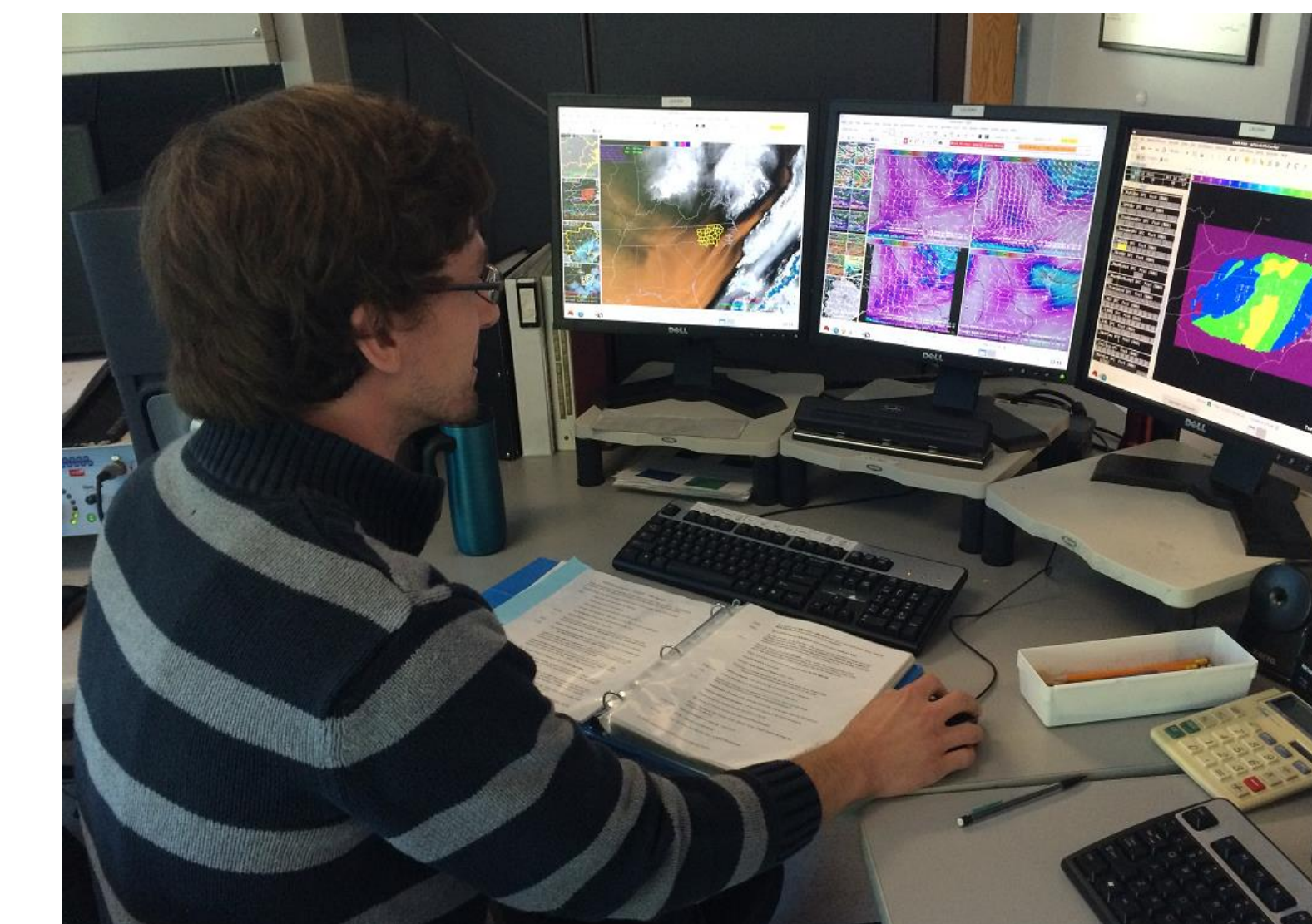
Metrics

- There have been 12 internship classes consisting of 82 total students.
- 33 students (40% of participants) have been employed by NOAA or the NWS.
- 56 students (68% of participants) have found employment in some form of atmospheric science or broadcast meteorology. Others have careers in fields such as teaching while others are still in graduate school.
- Graduates have worked in a diverse set of locations including all 6 NWS regions and at more than two dozen WFOs. In addition, past participants have worked in a half dozen NOAA labs, two national centers, a River Forecast Center and other NOAA facilities. The map below shows the locations in which former interns are currently employed by NOAA or the NWS.



Evolution of the Course

- In order to provide a more in depth exposure, the internship class size has been reduced but students participate in more activities for longer hours.
- Because of scheduling and the nature of severe weather, not every student is at the office during severe or extreme weather events. We conduct at least one individual WES simulation for each student so they can experience and participate in severe weather operations.
- Security requirements and background checks are much more stringent than in the past resulting in a considerable amount of additional workload.
- We have shared our experiences and lessons learned with other NWS offices (including WFO Blacksburg and WPC) looking to develop a similar internship course.



Quotes

"My hands-on experience with the NWS office in Raleigh during my time at NC State was instrumental in seeing how the research I was undertaking had applications in real-time forecast and warning operations." - **Dr Michael Brennan, Senior Hurricane Specialist, National Hurricane Center**

"I had a unique opportunity to work alongside forecasters on shift not only to learn their responsibilities but also build relationships and find mentors to help guide me in the meteorological field." - **Lindsay Anderson, KSHB-41 Actions News Morning Meteorologist, Kansas City, MO**

"Interning in the Raleigh NWS forecast office instilled in me an invaluable appreciation of the realities, challenges, and pressures faced by operational forecasters. This unique experience continues to inform and inspire the research-to-operations-focused research that I enjoy doing today in my position at the NOAA Earth System Research Lab." - **Dr Kelly Mahoney, Research Meteorologist, NOAA ESRL/Physical Sciences Division**

"The knowledge and experience gained from this internship was a pivotal stepping stone for me to be able to do something I love doing." - **Robert James, National Blend of Models Developer, Statistical Modeling Branch**

Conclusion

- The course provides numerous benefits to both the NWS and NC State.
- These benefits can be seen both directly with students securing employment and the NWS developing talent but also by exposing students to NWS operations before they move into the weather enterprise.
- The investment in time and effort by the NWS is not trivial, and the contributions of many staff members is required to make it a success. We are grateful to the NWS Raleigh staff who have made this course possible.