

3.3 THE COMET RESIDENCE PROGRAM AT 15: THE CHANGING FACE OF CLASSROOM EDUCATION

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1. INTRODUCTION

Since 1991, the Cooperative Program for Operational Meteorology, Education and Training (COMET®) has conducted a robust residence program in our Boulder classroom. Over 150 course offerings totaling nearly 200,000 student hours of instruction have taken place on a wide range of topics, including: mesoscale-, satellite-, boundary layer- and hydro-meteorology, numerical

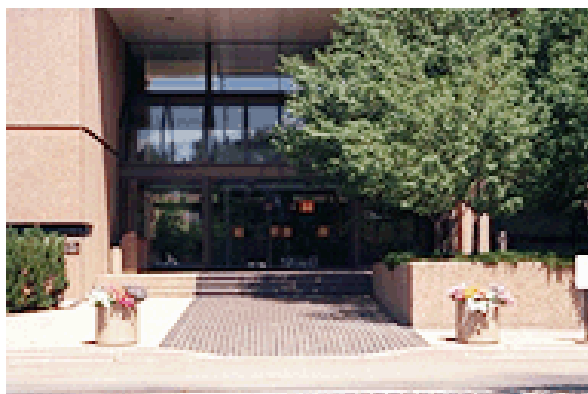


Fig. 1: The entrance to the COMET Classroom facility located at the UCAR Foothills Campus in Boulder, CO.

weather prediction, and climate variability. The National Weather Service has been the primary user of the classroom, but other attendees have attended included personnel from the Air Force Weather Agency, the Naval Meteorology and Oceanography Command, the Meteorological Service of Canada, the private sector, and several foreign weather services. The COMET Program

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has also worked to enhance university instruction by offering six courses to nearly 100 university faculty on a similar variety of subjects.

2. THE TRADITIONAL COMET RESIDENCE COURSE

The typical COMET residence class pairs lead university and operational instructors to facilitate the transfer of recent research results to the operational community. This advanced-level training employs a case study approach with practical lab exercises specifically designed



Fig. 2: The COMET classroom lecture area.

to reinforce concepts from lecture presentations. Over the years, the COMET classroom has evolved to ensure that we have always employed advanced computer and communications technologies. For many years the classroom has used the technology to occasionally include live videoconferences with remote presenters to augment presentations given by live instructors. The facility is currently equipped with co-located lecture and laboratory areas accommodating up to 27 students for a single course offering.

Residence training continues to be a viable and meaningful component of an education and training enterprise. Residence training is the most appropriate delivery mode when:

- The audience in need of training is small (making interactive distance education prohibitively expensive per student)
- Group hands-on or collaborative problem solving is crucial
- Training must be developed and delivered fairly quickly.

The past year has seen two substantial upgrades to the hardware that supports classroom operations. The first upgrade modernized the nine laboratory stations which now each consist two Intel-based dual-boot (Windows/Linux) PCs.



Fig. 3: COMET classroom lab workstation.

Each PC station has three monitors capable of running AWIPS, GARP, and other analysis and display packages for a variety of applications including running real-time local mesoscale model simulations. The second major upgrade integrated the numerous display options, streamlining the instructors' capability to switch between media sources for large screen display to the classroom audience. The upgrade to these features as well as the addition of more microphones, an enhanced sound-system, and an annotation tablet also allows presenters to easily present live lectures to students in remote locations.

3. FUTURE DIRECTIONS

From time to time, sponsor budgetary restrictions have occasionally limited travel and residence classroom schedules. Future budget uncertainty has caused the NWS and other

sponsors to look increasingly to distance learning options to help control the overall cost of training. The Residence Program has used a recent break in the schedule to redesign the classroom Website (www.comet.ucar.edu/class/index.html). During this time we have also supported other uses of our residence facility that were not possible when the schedule was fully booked with traditional sponsor courses. Some of the alternative offerings in the past year have included: two UCAR/NOAA courses on the WRF model, a GLOBE Program teacher training workshop, another summer school program on Helioseismology and a new workshop on Weather and Society Integrated Studies,

Additionally, the recent upgrades to the instructor workstation and audio system have ideally prepared COMET to embark on offering aspects of the residence program to students without the expense of having to travel to Boulder. Plans for adding virtual courses and individual key live lectures to remote audiences are in the works.

Meanwhile, we continue to conduct traditional residence courses, albeit at a reduced pace, and thus are able to use Web technologies to make classroom lectures of wide interest to the community available through our MetEd Website (<http://www.meted.ucar.edu>). We have already published over 30 Webcasts that provide expert lectures from our classroom on demand to learners worldwide.

Despite the specter of a reduction in future residence course offerings, the COMET classroom operation is poised to exploit these innovative alternative delivery methodologies as a cost-effective means to meet the training needs of the operational community.

4. ACKNOWLEDGEMENTS

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