

## **Center for Archaeological Materials/Center for Materials Research in Archaeology and Ethnology**

The mission of the [Center for Materials Research in Archaeology and Ethnology](#) (CMRAE), a consortium of eight Boston-area educational and cultural institutions, is to advance our understanding of prehistoric and nonindustrial societies through analysis of the structure and properties of materials associated with human activity. Plant and animal food remains and human skeletal material, as well as metal, ceramic, stone, bone, and fiber artifacts, are the objects of study, along with the environments within which these materials were produced and used. At the Center for Archaeological Materials (CAM) at MIT, investigators concentrate on the materials-processing technologies that transform natural materials into cultural objects. CAM is administered by the Office of the Provost.

From 1998–1999, the Department of Materials Science and Engineering (DMSE) established a new undergraduate major in archaeology and materials, Course 3-C, as well as an interdisciplinary doctoral degree program in archaeological materials. These are the only academic degree programs of their kind in the United States. The graduate students enrolled in the PhD program and the undergraduate Course 3-C majors who participate in the Undergraduate Research Opportunities Program all carry out their dissertation and senior thesis research in the CMRAE laboratory facilities.

3.985 Archaeological Science, the undergraduate subject offered jointly by DMSE, the Department of Chemistry, and the Department of Earth, Atmospheric, and Planetary Sciences, continues to enjoy high popularity among students from CMRAE institutions. This year, 73 of the 74 students enrolled were from MIT. One student was from Brandeis University. Eleven faculty members from six CMRAE institutions lectured in the subject.

During the spring term, 40 first-year undergraduate students in subject 3.094 Materials in Human Experience were engaged in lecture and laboratory sessions that explored the development of metallurgy among ancient Andean societies and the processing and prolific use of lime plaster by the Maya in Mesoamerica. The laboratory project assigned for the Mesoamerican unit focused on reproduction of a scene from a lime plaster fresco excavated recently within a building at one of the earliest known Maya sites at San Bartolo, Guatemala. Students processed the lime, prepared a suitable wall backing for the plaster, gridded the plaster ground to produce a 1:1 charcoal drawing of the fresco image, then painted the image using the same pigments the Maya used, identified through laboratory analysis by the archaeologists who excavated the San Bartolo frescos. The 3.094 students carried out these activities in the DMSE Merton C. Flemings Material Processing Laboratory. In lectures, they learned to decipher the complex iconography through which the fresco images communicate aspects of Maya cosmology. In the laboratory, the students were assisted in producing their fresco by the two archaeologists who carried out the San Bartolo excavations, who are faculty colleagues at Boston University, which is one of the CMRAE consortium institutions. The completed fresco hangs on display in the fifth floor lobby of Building 16.

**Heather Lechtman**  
**Director**  
**Professor of Archaeology and Ancient Technology**