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. In 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 all participate in the Undergraduate Research Opportunities Program and carry out their dissertation research in the CMRAE laboratory facilities.

Eight students have graduated from the 3-C program and one PhD degree in archaeological materials has been awarded by DMSE. In AY2011, one PhD student and one Course 3-C undergraduate major were enrolled in the DMSE/CMRAE programs.

In AY2011, CMRAE's annual two-term graduate subject was 3.984 Materials in Ancient Societies: Ceramics. Twelve students enrolled from MIT, Harvard University, Boston University, and the University of Massachusetts. The fall term was devoted to study of ceramic materials, with emphasis on the properties of ceramics used for pottery, bricks, and mortars, those materials most frequently managed by early societies. The Peabody Museum of Archaeology and Ethnology at Harvard contributed artifacts for investigation from China, Syria, Puerto Rico, and the Southwest United States. Boston University lent artifacts from Guatemala and Indonesia. The University of Massachusetts contributed ceramics from Spain. Students carried out thin section petrographic analyses of samples removed from these artifacts in order to determine their composition and to reconstruct the fabrication histories of the artifacts. During the spring term students participated in a seminar that focused both on the production and use of ceramic materials, and the information that ceramic artifacts contribute to the reconstruction of the social and cultural aspects of ancient societies. Guest seminar leaders included faculty from Boston University, Brandeis University, and Harvard University.

Archaeological Science, the CMRAE/CAM 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. Of the 44 students enrolled, 40 were from MIT, one was from Harvard University, and two were from the University of Massachusetts. Eleven faculty members from five CMRAE institutions lectured in the subject.

During the spring term, 40 undergraduate students in subject 3.094 Materials in Human Experience were engaged in lecture and laboratory sessions that explored the development of metallurgy among Andean societies in prehistory and the varieties of cementitious materials used in the Near East for the manufacture and glazing of architectural tiles. Of 30 first-year students in the class, nine declared Course 3, Materials Science and Engineering, as their major.

Heather Lechtman
Director
Professor of Archaeology and Ancient Technology