

## **JOURNEYS OF OUR ANCESTORS: CONSERVATION SCIENCE AND COLLABORATIVE CONTRIBUTIONS TO ARCHAEOLOGICAL RESEARCH AND MATERIAL CULTURE INTERPRETATION**

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Planning of the permanent exhibit, "Journeys of Ancestors: Migration in the American Southwest" at the Arizona State Museum, University of Arizona, has been shaped by collaborative efforts between archaeologists, conservation scientists, curators and exhibition designers in consultation with Native American tribes. The exhibition, scheduled to open in 2011, will highlight the traces of migration in archaeological and historic contexts in the American Southwest. Selected exhibition artifacts range in date from the Paleo-Indian period (12,000 – 13,000 BP) to the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Current, ongoing migrations will also be an exhibition focus. This collaborative research effort has focused on the utilization of NDT portable XRF analysis to provide context for the interpretation of these materials within the framework of migration.

Application of NDT XRF analysis to selected exhibition materials has helped to answer questions pertaining to: (a) the materials and methods of artist manufacture, (b) geographic provenance of such materials, (c) changes that might occur as a result of archaeological process or traditional use, (d) evidence of traded raw materials or completed objects, and, (e) movement of people and objects on the landscape. Two analytical case studies featuring the use of a non-destructive portable XRF instrument (model NITON Xli 723) will be discussed including: (a) compositional analysis of Chinese and Asian coins excavated as part of the Tucson Urban Renewal Project, and (b) the development of ceramic reference standards to calibrate portable XRF instrumentation for analysis of southwestern ceramic pastes and paints. Interpretation of the analytical results combined with pertinent archaeological, conservation and curation data for these materials will provide valuable information regarding the transmission of materials and technologies through migration in the Southwest. Research results will be featured in exhibition sections and in fundraising activities, while object descriptions and material identifications will be incorporated into exhibition wall text, web applications, and a catalog. The integration of NDT analysis has redefined exhibition content, as well as contributed to the interpretation of archaeological material culture. As a result, the ways in which NDT analysis, utilized in archaeology, archaeological science and conservation science, can reconstruct ancient and historic migration pathways has become a central focus to the planned exhibit footprint.