An Echo of History: A Peruvian musician plays an ancient conch horn from the Chavín de Huántar ruins.

Progress Examples: Engaging the Arts and Creativity

The Challenge

What was the purpose of the mysterious Chavín de Huántar, an archaeological site in the Peruvian highlands that predates Machu Picchu by more than 2,500 years?

The Concept

A Stanford expedition traveled to Peru to measure the acoustics of the labyrinthine stone architecture before conservation work may alter it forever. With specialized microphones and precision loudspeakers, researchers analyzed the ceremonial space and shell trumpets found onsite to decipher their use.

The Outcome

The project has advanced the field of archaeoacoustics, which provides archaeologists and anthropologists with a novel way to unlock ancient histories. The team delved into the hypothesis that the structure’s acoustic design enhanced the sensory experience in pre-Incan rites (see analysis and data). The research continues in the doctoral dissertation of Miriam A. Kolar. Team members and art and art history researchers now are also studying the acoustics of the Byzantine church of Hagia Sophia.

Engaging the Arts and Creativity Overview

Related News and Stories

Cantor exhibition depicts how ancient world used color and how science reveals the faded past

Stanford historian’s play about Martin Luther King to be performed in East Jerusalem, West Bank

Hip-hop and its heritage: Rennie Harris comes to Stanford

U.S. premiere of Stanford composer Jonathan Berger’s Memory Slips set for March 4
The Collaboration

Stanford Department of Anthropology

- John Rick, PhD, Professor of Anthropology

Stanford Center for Computer Research in Music and Acoustics (CCRMA)

- John Chowning, DMA, Professor Emeritus of Music and Founding Director of CCRMA
- Jonathan S. Abel, PhD, Consulting Professor, CCRMA
- Perry R. Cook, Former Director of CCRMA and Professor Emeritus of Computer Science and Music, Princeton University

Stanford Interdisciplinary Graduate Fellowship

- Miriam Kolar, MFA, PhD '12, CCRMA

Additional Researchers including Graduate Students from the Stanford Departments of Music, Electrical Engineering, Communication, and Art & Art History.

With Support From

- Stanford Institute for Creativity and the Arts Seed Funding
- Stanford Interdisciplinary Graduate Fellowships

More on This Example

- Article: "Scientists Record 3,000-year-old Music; No Time Machine Required." NPR. December 1, 2010
- Gallery: Chavín de Huántar. Stanford Arts Initiative Website.
- Link: Chavín de Huántar Archaeological Acoustics Project Website