

The Ancient Theatre Archive: An Internet resource for theatre history and architecture studies
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Project Website: <<http://www.whitman.edu/theatre/theatretour/home.htm>>

The remains of ancient theatre performance spaces lie at the root of acted language. These mute stones speak of cultural performance preferences, adaptive renovations by ever succeeding societies, and the impact of time and weather and war. Two centuries of archeological excavations have identified many of these theatre sites and subsequent research has painted an ever-changing picture of the historic record that is locked in these tangible remains of an otherwise ephemeral art. These magnificent ruins, some pristine, some crumbling, a few partially restored, many little more than a collection of weathered stones against a fan-shaped hill, are scattered about the ancient prefectures of Greece and Rome. *The Ancient Theatre Archive* provides a virtual tour of these scattered remains.

Project Description: *The Ancient Theatre Archive* is an online, encyclopedic survey of representative ancient Greek and Roman theatres. The project was conceived and developed by this author as an Internet resource for theatre history and architecture studies: specifically, the study of European stone theatres dating from the 5th century BCE to the 5th century CE.

A visitor to the project website is presented with a map of Europe and the Near East. This map displays links to numerous ancient theatres and when selected, each provides access to an illustrated commentary of the site and data charts containing dates, dimensions, maps, drawings, timelines, etc. The visitor is also given the opportunity to take a virtual tour of each ancient theatre ruin. This virtual tour consists of a series of panoramic views of the theatre combined with a collection of annotated photographs illustrating significant objects and archeological details found at the site. An illustrated Greek and Roman theatre glossary with phonetic spellings is provided to assist the visitor, and access to satellite and aerial imagery of each site is provided in an interactive Geomapping database.

This on-line collection (archive) of ancient theatre photographs, viewer controlled panoramas, annotated photographs, commentaries, site-specific data, and maps, is presented as a resource for both students and teachers of theatre architecture. The intent of the *Archive* is to augment traditional teaching methods and provide a dynamic, visual tool for describing remote archeological sites to students.

Since the project's conception, eighty-six target theatres have been identified, and expeditions by this writer to Turkey, Greece, Spain, Portugal, France, Egypt, and Italy have produced over fourteen thousand high-resolution photographs of seventy-two of those Greek and Roman theatres. One hundred and fifty-six panoramic views describing the individual theatres from various vantage points were created, and commentaries have been solicited from project contributors. Site-specific drafting and illustrations have been produced, and a project website has been created.

In addition to my personal research, I am fortunate to have research contributions from others in my field of study including three Whitman Abshire Research Grant recipients and one student Perry Summer Research Grant collaborator. *The Ancient Theatre Archive* website is the repository of this on-going photography and research. During the past five years, a significant number of institutions have demonstrated positive interest by requesting permission to use the materials in their classes or have linked the project website to their internet resource page. The *Archive* is accessed an average of one thousand times a day and a recent check revealed over five hundred website links to the on-line project.

The research project is consistent with my teaching and my established record of professional activity. I teach Computer Application for the Theatre and incorporated theatre architecture research into my classes in Theatre Design and Introduction to the Theatre. During my term as Vice-Commissioner for Computer Applications for the United States Institute for Theatre Technology I presented numerous workshops and lectures on digital imagery and website development; the research has benefited from three Abshire Awards and one Perry Grant; a National Endowment for the Humanities Fellowship, a USITT project grant, and Rockefeller grant were awarded to support this research; and two sabbaticals have been granted that allowed me to continue my work and present research results in Beijing, the University of Lisbon, and at the American University in Cairo.

Project Objectives:

1. Identify theatre sites for inclusion in The Ancient Theatre Archive Project. Research has identified approximately five hundred known Greco-Roman theatre sites. They date from the 5th century BCE and their remains chronicle theatre architecture evolution and renovations from Classical Greece to the decline of the Roman Empire. Although a pictorial archive of all known theatre sites would be useful, it would also be ambitious for this archivist to address given the quantity, condition and geographic distribution of the extant archeological ruins. Therefore, a more realistic and manageable list of eighty-six Greco-Roman theatres has been identified for inclusion in the “Archive Project.” The sites are representative of both Greek and Roman theatre constructions in Italy, Turkey, North Africa, Greece, France, and Spain. It should be noted that *The Ancient Theatre Archive* is an open-ended and ongoing project, and additional sites are continually added as time and travel permits. The list of theatre sites identified for inclusion in the project to date includes:

Turkey: Aphrodisias (modern Geyre, Turkey), Ephesus (modern Selçuk, Turkey), Ephesus Odeum (modern Selçuk, Turkey), Halicarnassus (modern Bodrum, Turkey), Hierapolis (modern Pamukkale, Turkey), Miletus (modern Balat, Turkey), Pergamum (modern Bergama, Turkey), Priene (modern Güllübahçe Turkey), Antiphellus (modern Kaş, Turkey), Arycanda (modern Arif, Turkey), Aspendus (modern Belkiz, Turkey), Letoon (modern Bozoluğ, Turkey), Patara (modern Keleş, Turkey), Perge (modern Aksu, Turkey), Phaselis (modern Tekirova, Turkey), Pinara (modern Minare Köyü, Turkey), Side (modern Eski Antalya, Turkey), Simena (modern Kale, Turkey), Telmessus (modern Fethiye, Turkey), Termessus (modern Güllük, Turkey), Tlos (modern Düver, Turkey), Xanthus (modern Kınık, Turkey).

Greece: Argos (modern Argos, Greece), Argos Odeum (modern Argos, Greece), Corinth (modern Kórinthos, Greece), Corinth Odeum (modern Kórinthos, Greece), Dilos (Modern Dilos, Greece), Delphi (modern Delfi, Greece), Theatre of Dionysus (modern Athens, Greece), Elis (modern Ilida, Greece), Epidaururs (modern Epidauros, Greece), Eretria (modern Eretria, Greece), Gythium (modern Githio, Greece), Odeum of Herodes Atticus (modern Athens, Greece), Isthmia (modern Isthmia, Greece), Megalopolis (modern Megalopoli, Greece), Messene (modern Mavromati, Greece), Orchomenus (modern Orhomenos, Greece), Sicyon (modern Kiato, Greece), Sparta (modern Sparti, Greece), Thera (modern Thira, Greece), Thoricus (modern Thorikos, Greece), Mantinea (modern Mantinea, Greece), Cassiope (modern Kamarina, Greece), Dodona (modern Dodoni, Greece), Nicopolis (modern Preveza, Greece), Aegae (modern Vergina, Greece), Stobi (modern Pustogradske, Greece), Thessalonica (modern Thessaloniki, Greece), Philippi (modern Krenides, Greece).

Spain and Portugal: The Roman theatres at: Mérida (Augusta Emerita), Santiponce (Italica), Cabeza del Griego, Cuenca (Segobriga), Taragona (Tarraco), Osuna (Urso), Bolonia (Baelo), Ronda la Vieja (Acinipo), Cerro de la Bámbola, Calatayud (Bilbilis), Medellín (Metellinum), Peñalba de Castro, Coruña del Conde (Clunia), Sagunto (Saguntum), and Lisbon (ancient Olisipo), Portugal.

Roman Theatres in France: Orange, (Arausio), Arles (Arelate), Lyon (Lugdunum), Vienne (Vienna), Frejus (Forum Julii), Autun (Augustodunum), and Vaison-la-Romaine (Vasio Vocontiorum).

Roman Theatres in North Africa: Alexandria (modern Alexandria, Arabic: al-Iskandariyya, Egypt), Bulla Regia (modern Hammam Daradji, Tunisia), Carthago (modern Carthage, Tunisia), Simitthu (modern Chemtou, Tunisia), Sufetula (modern Sbeitla, Tunisia), Thugga (modern Dougga, Tunisia), Tynes (modern Tunis, Tunisia), Utica (modern Utique, Tunisia), Lixus (near modern Larache, Morocco).

Italy: Marcellus (modern Rome, Italy), Ostia (modern Ostia Antica, Italy), Pompeii (modern Pompeii, Italy), Pompeii Odeum (modern Pompeii, Italy), Segesta (modern Calatafimi-Segesta, Italy), Syracuse (modern Siracusa, Italy), Tauromenium (modern Taormina, Italy).

2. Research, acquire theatre site data, and produce an introductory commentary for each theatre.

Specific information to be researched includes but is not limited to: (a) location and date of theater construction, (b) architect (if known), (c) renovation dates, (d) excavation dates, (e) location of archives associated with the site, (f) gross dimensions and seating capacity of the theatre, (g) location of any known architectural drawings of the theatre site, and (h) bibliography of sources. This collection of data along with a short (750 word) commentary on the history and significance of a given theatre will accompany site photography for each theatre represented in the archive. Guidelines for this commentary include:

- A. A brief description of location and construction history (built by whom, when, and for what purpose).
- B. A brief description of renovation history (renovated by whom, when, and for what purpose).
- C. A brief description of excavation history (excavated by whom, when, and how complete is the excavation).
- D. A discussion of significant features (i.e. dimensions, seating capacity, construction materials, architectural features).
- E. A discussion of any specific performances, playwrights, or events associated with the theatre.

3. Incorporate student and colleague collaborators and contributors. The on-line project has benefited from colleague contributions as well as theatre student research assistants. To date, the following individuals have contributed or have offered to contribute to the *Archive* project.

Bakker, Jan Theo, Ph.D, University of Leiden and The Internet Group Ostia, The Netherlands
Bullard, Anna, Abshire Research Assistant. Whitman College, 2001

Dickey, Jerry, Ph.D, Associate Professor of Theatre, the University of Arizona

Falk, Heinrich R., Ph.D, Professor of Theatre, California State University, Northridge

Foster, Edward E., Ph.D., Mina Schwabacher Professor of English and the Humanities, Whitman College.

Hardy, Clara Shaw, Ph.D, Associate Professor of Classical Languages, Carleton College

Heffernan, Amanda, Perry Research Assistant, Whitman College, 2003
Icten Cengiz, Archeologist, Efes Muzesi, Turkey
Jagel, Ian, Abshire Research Assistant, Whitman College. 2008
Johnson, Odai, Ph.D., Assistant Professor of Theatre, the University of Washington
Lavy, Jennifer, Graduate Student in Theatre, the University of Washington
Martin, Suzanne, Ph.D., Professor of History, Emeritus, Whitman College
McDowell, Stuart, Ph.D, Chair and Artistic Director, Department of Theatre, Dance & Motion Pictures, Wright State University
Mohler, Frank, Ph.D, Professor of Theatre, Appalachian State University
Pitter, Keiko, Chief Technology Officer, Whitman College
Panttaja, Dean, Ph.D., Professor of Design, Dept. of Theatre and Film, the University of Idaho
Polster, Joshua, Ph.D. Assistant Professor of Theatre, Emerson College
Wells-Thulin, Elizabeth, Abshire Research Assistant, Whitman College, 2006

4. Visit and photograph theatre sites. Site photography is a mandatory component of each theatre represented in “The Archive.” Two distinct types of photographs are required to describe each theatre site: photographs that record distinctive geographic and architectural theatre features discussed in the written commentary, and sequences of photographs that constitute panoramic views. A sequence of fourteen photographs is required to create a 360-degree, panoramic image. A minimum of four sets of these panoramic sequences are required to describe each theatre site from four different vantage points.

Since 2003, I have completed 72 theatre site visits: 30 in Turkey, 23 in Greece, 8 in Spain and Portugal, 7 in Italy, 3 in France, and 1 in Egypt. I have archived over 14,000 photographs and constructed 156 panoramic views. Not all materials are currently available on-line. The theatres visited to date include:

Turkey: Aphrodisias (modern Geyre, Turkey), Ephesus (modern Selçuk, Turkey), Ephesus Odeum (modern Selçuk, Turkey), Halicarnassus (modern Bodrum, Turkey), Hierapolis (modern Pamukkale, Turkey), Miletus (modern Balat, Turkey), Pergamum (modern Bergama, Turkey), Priene (modern Güllübahçe Turkey), Antiphellus (modern Kaş, Turkey), Arycanda (modern Arif, Turkey), Aspendus (modern Belkiz, Turkey), Letoon (modern Bozuluk, Turkey), Patara (modern Kelemiş, Turkey), Perge (modern Aksu, Turkey), Phaselis (modern Tekirova, Turkey), Pinara (modern Minare Köyü, Turkey), Side (modern Eski Antalya, Turkey), Simena (modern Kale, Turkey), Telmessus (modern Fethiye, Turkey), Termessus (modern Güllük, Turkey), Tlos (modern Düver, Turkey), Xanthus (modern Kınık, Turkey), and Myra (modern Demre, Turkey), Assus (modern Behramkale, Turkey), Magnesia-ad-Meandrum (modern Tekin, Turkey), Miletus (modern Balat, Turkey), Pergamum Roman Theatre (modern Bergama), Pergamum Acropolis Theatre (modern Bergama, Turkey), Troia (Troy) Odeum (modern Hisarlık, Turkey), Laodicea-ad-Lycum (modern Goncali, Turkey)

Greece: Argos (modern Argos, Greece), Argos Odeum (modern Argos, Greece), Corinth (modern Kórinthos, Greece), Corinth Odeum (modern Kórinthos, Greece), Delphi (modern Delfi, Greece), Theatre of Dionysus (modern Athens, Greece), Elis (modern Ilida, Greece), Epidaururs (modern Epidauros, Greece), Eretria (modern Eretria, Greece), Gythium (modern Githio, Greece), Odeum of Herodes Atticus (modern Athens, Greece), Isthmia (modern Isthmia, Greece), Megalopolis (modern Megalopoli, Greece), Messene (modern Mavromati, Greece), Orchomenus (modern Orhomenos, Greece), Sicyon (modern Kiato, Greece), Sparta (modern Sparti, Greece), Thera (modern Thira, Greece), Thoricus (modern Thorikos, Greece), Mantinea

(modern Mantinea, Greece), and Aegae (modern Vergina, Greece), Delos (Modern Delos).

Spain and Portugal: The Roman theatres at: Augusta Emerita (modern Mérida, Santiponce, Itálica (modern Cabeza del Griego), Segobriga (modern Cuenca), Urso (modern Osuna), Baelo (modern Bolonia), Acinipo (modern Ronda la Vieja), Metellinum (modern Medellín), and Olisipo (modern Lisbon), Portugal.

Roman Theatres in France: Orange (modern Arausio), Arles (modern Arelate), and Vaison-la-Romaine (modern Vasio Vocontiorum).

Italy: Marcellus (modern Rome, Italy), Ostia (modern Ostia Antica, Italy), Pompeii (modern Pompeii, Italy), Pompeii Odeum (modern Pompeii, Italy), Segesta (modern Calatafimi-Segesta, Italy), Syracusae (modern Siracusa, Italy), Tauromenium (modern Taormina, Italy).

Egypt: Alexandria odeum (modern Alexandria)

5. Design, develop, and publish a project website that allows visitors to select and view self-guided tours of ancient Greek and Roman Theatres: The project website will incorporate site specific theatre research, panoramic views of those theatres, annotated photographs and drawings, into a mapped based, on-line database.

To date, this author has designed, developed, and published the project as described. A trial website titled, “Virtual Reality Tours of Historic Theatre Structures,” was developed in 2001 as part of a feasibility study funded by a “Communicating with Technology Initiative” Rockefeller Grant, and one ancient theatre, the theatre at Ostia Anitca, was photographed, researched and presented. The structure of the project has change little since its conception, however the scope of the theatres examined has been limited to ancient theatres; thus the title change to, *The Ancient Theatre Archive*. The current site contains twenty-three hundred images and documents fully describing fifteen ancient theatres, with mapping as well as theatre site specifications on the remainder of the sites that are currently under development. A recent addition to the project is an illustrated Greek and Roman theatre glossary with phonetic spellings.

The strength of the project lies in its specificity, organization, and accessibility. This is an online archive of ancient theatres and great care has been taken to provide users with an intuitive approach for comparative explorations of the data. Other websites of note such as *The Perseus Digital Library*, *Didaskalia: Ancient Theatre Today*, and *Skenotheke: Images of the Ancient Stage*, have a much broader base and, in the case of *Perseus*, an amazing depth of information on a vast range of subjects. But, by limiting the “Ancient Theatre Archive” subject matter to Greek and Roman theatres, a greater depth of images and text can be provided.

Value of Project to Teaching and Scholarship:

The Ancient Theatre Archive project has generated inter-institutional collaborations, student research, publications, and public presentations. Please see accompanying vitae for details of publications, presentations, student research projects, and grants associated with the project. A list of project collaborators is provided on the project website.

The research project is consistent with my established record of professional activity and is incorporated into courses taught at Whitman (Introduction to Theatre, Design for the Theatre, Graphics for the Theatre, and Computer Applications for the Theatre). In addition to the value of

Grants, Publications, and Presentations Associated with the Project:

GRANTS AND AWARDS:

Sally Ann Abshire Research Scholar Award. Research Project: *The Geographic Distribution of Ancient Greek and Roman Theatre Architecture Constructed between 600 BC and 400 AD*. Student Assistant: Ian Jage;. Spring 2008.

Sally Ann Abshire Research Scholar Award. Research Project: *The Ancient Theatre of Dionysus*. Student Assistant: Elizabeth Wells-Thulin. Spring 2007.

National Endowment for the Humanities Fellowship. *The Ancient Theatre Archive Project*. Summer, 2007. ASID funding, Photographic and cite research in Greece for *The Ancient Theatre Archive Project*. Spring, 2007.

Perry Summer Research Scholarship Grant. 2003.
Research Project: *Virtual Reality Tours of Historic European Theatres*
Applicant: Faculty Member: Thomas Hines - Student Research Assistant: Amanda Heffernan.

USITT Design Commission Project Grant. 2003.
Research Project: *The Virtual Reality Theatre Tour Project: The Ancient Theatres of Greece*
Travel and travel related funding for on-site research in Greece.

ASID Funding. 2003.
Research Project: *The Virtual Reality Theatre Tour Project: The Ancient Theatres of Turkey*
Travel and travel related funding for on-site research in Turkey, Greece, and Italy.

Sally Ann Abshire Research Scholar Award. Research Project: *Virtual Reality Tours of Historic Theatre Structures*. Student Assistant: Anna Bullard. Fall 2001.

CwTI (The Communicating with Technology Initiative) Rockefeller Grant, *QuickTime Images of European Theatre Architecture*, (see: <http://wcts.whitman.edu/CwTI/summerworkshop/hines.html>), 2001.

PUBLICATIONS / PRESENTATIONS:

“Classic and Hellenistic Staging Practices.” Lecture, The American University in Cairo, Egypt: Department of Performing and Visual Arts. April, 2009.

“The Ancient Theatre Archive: The Evolution of Ancient Theatre Architecture.” Campus lecture. The American University in Cairo, Egypt. April, 2009.

“The Evolution of Drama and the Theatre Architecture of Ancient Greece.” Lecture Series, Beijing, China. Six, two-hour lectures at GUCAS (the Graduate University of Chinese Academy of Sciences), Beijing, China. Lectured at two separate campuses: Zhong Gun Cun and Yu Quin Lu. June 30 – July 20, 2008. See lecture website at: <<http://www.whitman.edu/theatre/theatretour/lectures>>

Ancient Theatre Photography Exhibition. AGEN Teatro 2008 Exposição "O que é o Teatro?" National photographic exhibit sponsored by the Portuguese Ministry of Culture (Ministério da Cultura), 2008.

“The Ancient Theatre Archive: The Evolution of Ancient Theatre Architecture.” Lecture presentation at the invitation of the Direcção Geral das Artes and the Director of the National Theatre of Portugal. University of Lisbon, Portugal. October 6 -7, 2008.

“The Ancient Theatre at Sicyon,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2007. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/sicyon/siyon.home.htm>>.

“The Theatre of the Sanctuary of Askelpios at Epidaurus,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2006. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/epidaurus/introduction/epidaurus.intro1.htm>>.

“The Odeon and Hellenistic Theatre at Argos,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2006. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/argos/introduction/argos.intro1.htm>>.

The Greco-Roman Theatres of Turkey. Presenter, Archaeology and Ancient History Lecture Series, Gonzaga University, Spokane WA, 2007.

“The Ancient Theatre at Aphrodisias,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2004. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/aphrodisias/introduction/aphrodisias.intro1.htm>>.

“The Ancient Theatre at Hierapolis,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2004. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/hierapolis/introduction/hierapolis.intro1.htm>>.

“The Ancient Theatre at Miletus,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2004. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/miletus/introduction/miletus.intro1.htm>>.

“The Ancient Theatre at Pergamon,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2004. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/pergamon/introduction/pergamon.intro1.htm>>.

“The Hellenistic Theatre at Priene,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2003. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/priene/priene.home.htm>>.

“The Greco-Roman Theatre at Ephesus,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2003. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/ephesus/ephesus.home.htm>>.

“The Roman Odeion at Ephesus,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2003. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/argos/introduction/argos.intro1.htm>>.

“The Roman Theatre at Ostia Antica,” *The Ancient Theatre Archive: A Virtual Reality Tour of Greek and Roman Theatre Architecture*. Ed. Thomas G. Hines. 2003. 16 Sept. 2007
<<http://www.whitman.edu/theatre/theatretour/ostia/introduction/ostia.intro1.htm>>.

Archiving Antiquities: The Virtual Reality Tour Project: Presenter, Scene Design Commission Project Report, USITT National Conference, Toronto, 2005.

The Virtual Reality Theatre Tour Project. The Archaeological Institute of America, local chapter, 2004.

‘The Virtual Reality Tour of Historic Theatres: An Internet resource for theatre history and architecture studies’, *Didaskalia*, vol. 6.2, Fall 2004.

The Ancient Theatre Archive: A Virtual reality tour of Greek and Roman Theatre Architecture. Ed. Thomas G. Hines. 2003. 16 Sept. 2007 <<http://www.whitman.edu/theatre/theatretour/home.htm>>.

Virtual Portfolio – The Nuts and Bolts. Chair, USITT National Conference, Long Beach, 2001.

Digital Portfolio Update: Chair. USITT National Conference, Long Beach, 2001.

A Panorama Costume Portfolio. Whitman Student, Jen Jones Presenter. Costume Poster Session, Directed research project for Ms. Jones, USITT National Conference, Long Beach, 2001.

Digitizing Your Portfolio. Professional Development Workshop: Presenter - USITT National Conference, Toronto, 1999.

Research Reference for Scene Design. Panelist. USITT National Conference, Toronto, 1999.

Portfolio Lessons for Designers. Presenter. USITT National Conference, Toronto, 1999.

Portfolio on CD-ROM. Panelist. USITT National Conference, Toronto, 1999.

The Digitized Portfolio. Chair. USITT National Conference, Long Beach, 1998.

The National Theatre Design Archive. Panelist. USITT National Conference, Long Beach, 1998.

Digital Imaging: Chair. USITT National Conference, Pittsburgh, 1997.