

TechnOzarks:

Essays in Technology, Regional Economy, and Culture

Edited

by

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Foreword

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**The Ozarks Studies Institute of
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Introducing The OSI Publications Series in Ozarks History and Culture

The Ozarks Studies Institute (OSI) of Missouri State University seeks to preserve the heritage of the Ozarks, its culture, environment, and history by fostering a comprehensive knowledge of Ozarks’ peoples, places, characteristics, and dynamics. The Institute promotes a sense of place for residents and visitors alike and serves as an educational resource by collecting existing—and discovering new—knowledge about the Ozarks and by providing access to that knowledge.

Following *Living Ozarks: The Ecology and Culture of a Natural Place* (2018),

TechnOzarks is the second volume in the OSI series. Along with its companion

journal, *OzarksWatch*, the series aims “to introduce the Ozarks to the world,” and vice versa.

What readers have said of the first volume, *Living Ozarks*:

Authors in this anthology are aware of tourism’s fantasies that overlay geology’s reality and that the Ozarks’ fragile natural landscape requires stewardship. We know that the environment shapes all creatures that live within it, including us. We must be prepared to address our presence as part of the natural—what is the cost to absorb our footprint?

—Lynn Morrow, editor, *Ozarks in Missouri History: Discoveries in an American Region*

Any discussion of sustainability in the Ozarks must involve not only the natural environment, but also elements not commonly thought of as natural resources: the history, the heritage, and the people. These are key elements that make this region unique and attractive to outsiders and tourists and give the Ozarks its unique identity. *Living Ozarks: The Ecology and Culture of a Natural Place* brings this point home in a decisive and definitive work.

—Paul W. Johns, author, *Unto These Hills: True Tales of the Ozarks*



The Digital Auto de Fe of 1601 Project:

Modeling Cultural Competence and Global Research Collaboration
in the Virtual Reality Classroom of the Future

John F. Chuchiak IV, Antonio Rodríguez Alcalá, Justin Duncan, Argelia Segovia Liga, Dulce Martínez Roldán, María del Carmen Rodríguez Viesca, Hans B. Erickson, María Fernanda Barrón, Wendy Arcos, Andrea Flores Navarrete, Ledis Molina, Michaela Simonová, and Sarah Powell

“Which is better? To believe and say you do not believe, or not to believe and say you believe?”
—Words of Mariana Núñez de Carvajal, Crypto-Jewish woman sentenced to be burned at the stake after an *auto de fe* in Mexico City (March 25, 1601)

Missouri State University and the MSU Honors College—in conjunction with our international partner, *Universidad Anáhuac Mayab* in Mérida, Yucatán, México—are using new digital technology in virtual and augmented reality to make global connections and contributions to research and pedagogy. From exploring molecular models in three dimensions to traveling back in time to early 17th century Mexico, Missouri State University and its Meyer Library stand on the cutting edge of the digital revolution in collaborative interdisciplinary research in virtual and augmented reality.

In 2017, the Meyer Library created a dedicated space for the development and beta testing of virtual and augmented reality technology. The digital tools for this revolution in interactive classroom technology are found in the Library’s *Achievement Studio: Promoting Interdisciplinary Research and Education* (ASPIRE), which serves as a workspace for faculty, international exchange partners, and students to pursue projects in interdisciplinary working groups.

Within the new fields of digital humanities, the use of virtual reality simulations and interdisciplinary re-creations of historical Virtual Worlds offer powerful tools for active leaning. These new technologies give access to the world at large, expanding students’ experiences of cultural, historical, and religious difference. By bringing faculty, students, and international researchers together collaboratively in global projects of research, such re-creations help model for all involved a respect for multiple perspectives and cultures—the sort of respect that underlies cultural competence, one of the pillars of Missouri State’s Public Affairs mission.

Committed to open access and digital humanities research, the *Digital Auto de Fe of 1601* gives the Ozarks region access to an entire Virtual World of colonial Mexico. Using the UNREAL[®] virtual reality software developed by Epic Games, Inc., the project re-creates the Mexican Inquisition’s 1601 *auto de fe* as a historical simulation, featuring an interactive high-fidelity videogame-like visualization in a high-resolution format. Through an open access website (<https://www.auto-defeinnewspain1601.com>), the project aims, additionally, to make the Virtual World simulation available to all without cost. The *Digital Auto de Fe* can be used in middle and secondary schools, in college classrooms, and by humanities researchers interested in the complex and polemical history of the Spanish Inquisition.

The ultimate goal is to develop a virtual research environment for the study of the public performance of the Mexican Inquisition’s celebrations of the *auto de fe*.

The *auto de fe*, or “act of faith” in English, served as the most elaborate public spectacle in what was otherwise the most private and secretive action of an Inquisitorial Tribunal. Although most previous scholars have identified the *auto de fe* as ostensibly a form of religious ritual, more recent scholarship has begun to understand that the Spanish Inquisition’s *auto de fe* ceremonies served not only religious, but also political, cultural, and didactic purposes.¹⁶⁵ Combining the politics of both the secular and the religious and imbuing its ceremony with hierarchical and political messages—messages that concerned the nature and structure of social and racial hierarchies—the Inquisitorial *auto de fe* served to warn the Catholic faithful of the dangers of heresy. It also served to delineate the proper hierarchical social and cultural spaces of what the Catholic Church and the Spanish Crown believed were the natural order of Spanish colonial society.¹⁶⁶

The innovative use of digital technology enables a multidisciplinary re-creation of the setting, sounds, sights, and events related to the public celebration of one of the better documented *autos de fe* in New Spain: the *auto de fe general* of 1601. To achieve this, the project combines the interdisciplinary skills of historians, costume designers, historical architects, illustrators, computer programmers, and digital designers.

165. For the major historiography on the *Auto de Fe*, see Francisco Bethencourt, “The Auto de Fe: Ritual and Imagery,” *Journal of Warburg and Courtald Institutes* Vol. 55 (1992): 155-168; Alejandro Canéque, “Theater of Power: Writing and Representing the Auto de Fe in Colonial Mexico,” *The Americas* vol. 52 no. 3 (1996): 321-343; and Maureen Flynn, “Mimesis of the Last Judgment,” *Sixteenth-Century Journal* vol. 22 no. 2 (1991): 281-297.

166. For the best discussion of the symbolism and significance of public spectacle in colonial Mexico, see Linda Curcio Nagy, *Great Festivals of Colonial Mexico City: Performing Power and Identity* (Albuquerque, NM: University of New Mexico Press, 2004).

Drawing on the available visual and textual primary source records as well as on archaeological evidence, it utilizes software for architectural modeling and acoustic simulation. The result is a reconstruction, as accurate as possible, of the setting, events, and public pageantry of this awe-inspiring event.

Creating a Virtual World of 17th Century Mexico City to Study the Mexican Inquisition and its Lived Human Experiences

We understand that the past did not happen in 2D and that it cannot be effectively studied or taught as a series of disconnected static images.
—Donald H. Sanders, “Why Do Virtual Heritage?” (2008)

Using historical simulations and virtual reality to teach is not a new concept; however, it is only now emerging as a viable way to teach history.¹⁶⁷ Recently, groups have used historical documents to create simulations, immersive environments, and virtual worlds that serve to provide historically accurate information to students and to draw interest.¹⁶⁸ The idea for

167. See Jeremiah B. McCall, *Gaming the Past: Using Video Games to Teach Secondary History* (New York: Routledge, 2011). The epigraph above cites Donald H. Sanders, “Why Do Virtual Heritage?” in *Archaeology: A Publication of the Archaeological Institute of America* (March 13, 2008), retrieved June 1, 2019 (<https://archive.archaeology.org/online/features/virtualheritage/>).

168. For just a few of the recent similar projects, see the following:

Pox in the City (<http://loki.stockton.edu/~games/PoxFinal/Pox.html>): *Pox* is a digital roleplaying game in the history of Medicine.

Virtual Paul’s Cross Project: A Digital Re-Creation of John Donne’s Gunpowder Day Sermon, London 1622 (<https://vpcp.chass.ncsu.edu/>): This VR project recreates the experience of hearing John Donne, the English Dean of St. Paul’s Cathedral, deliver his sermon commemorating the failed Gunpowder Plot (November 5, 1622) in the Cathedral courtyard in London.

the *Digital Auto de Fe* came out of a master’s thesis by Justin Duncan. Duncan’s thesis focused on the spatial representation of power by the Inquisition.¹⁶⁹ The project has attempted to answer several historical questions that seem simple but are very difficult to assess if only the methods of traditional humanities research and textual analysis are used. Only by re-creating the events, scenes, sights, and sounds of the *auto de fe* held in Mexico City on March 25, 1601 in a real-time 3D virtual world can the viewer (student/scholar) come to appreciate the frightening process of organized public terror created by an Inquisitorial *auto de fe*.

To date, most efforts in the re-creation of what scholars have termed Virtual Worlds or Virtual Cultural Heritage have aimed at accurate representations of historic structures, cultural objects, or artifacts.¹⁷⁰ In most historical uses of virtual reality technology, little attention has been paid to how human actors and human institutions interacted with the built environment. Similarly, little time is spent in examining how the human aspects of daily life shaped the cultural heritage or built environments under study. The vir-

Virtual Harlem (<https://www.evl.uic.edu/aej/papers/cga-harlem.pdf>): This VR project “lets students experience the Harlem Renaissance of the 1920s and 1930s as a cultural field trip,” allowing a single-player avatar to move freely around, giving an immersive experience of the city streets and sights.

Romelab (<http://hvw.etc.ucla.edu/>): UCLA’s *Romelab* is a multidisciplinary research group whose work uses the physical and virtual city of Rome in studying the interrelationship between historical phenomena and the spaces and places of the ancient city.

169. Justin Duncan, “Performing Theaters of Power: The Holy Office of the Inquisition’s General Autos de Fe in Spain and Spanish America and the Visual and Physical Representation of Inquisitorial Power, 1481-1736” (2014), M.A. Thesis, Missouri State University (<https://bearworks.missouristate.edu/theses/1170>).

170. See Mohamed Gamal Abdelmonem, Gehan Selim, Sabah Mushatat, and Abdulaziz Almogren, “Virtual Platforms for Heritage Preservation in the Middle East: The Case of Medieval Cairo,” *Archnet-IJAR* vol. 11 no. 3 (2017): 28-41.

tual reconstruction of the life of the buildings, objects, or artifacts and their “human story” have remained intangible for the most part, though these life stories and human aspects of the (re)built historical environments are the “‘intangible heritage’ to which contemporary people can actually relate.”¹⁷¹

Digital historical models of buildings and spaces offer only a glimpse at one aspect of the past—a snapshot in time—albeit a glimpse with some sense of precision, given the use of new technologies in combination with historical archival and archaeological and architectural methods of accurate reconstruction. The human usage of the spaces of the built environments of the past, and the human attitudes and cultural traditions which occurred in relationship to or within these built historical structures, are far more difficult to re-create than the physical manifestations of historic buildings, cities, states, etc. The human element of historical actors of the past and of their interactions with the historically reconstructed space remains a gap in current research. As scholars have lamented, these so-called Virtual Heritage Environments or Virtual Worlds “suffer from the lack of ‘thematic interactivity’ due to the limited cultural content and engaging modules largely used in photorealistic video gaming systems.”¹⁷²

The first phase of our joint international research project, *The Digital Auto de Fe*, has sought to integrate the human aspect of the real lives and experiences of people who encountered the repressive apparatus of the Mexican Inquisition—whether as accused heretics, as officials of the Holy Office, or as spectators (drawn from the general public) at a major public event of punishment known as an *auto de fe*. By examining the spatial nature of the *auto de fe* and the dis-

171. Abdelmonem et al., “Virtual Platforms for Heritage Preservation,” p. 28.

172. Abdelmonem et al., “Virtual Platforms for Heritage Preservation,” pp. 28-29.

tribution and use of public space in early 17th century Mexico City, this project has taken what some have called the “spatial turn” in the digital humanities.¹⁷³ Thus, this phase of the project focuses on the interactions of historical personages with the built environment of the 17th century Palace of the Mexican Inquisition; it focuses as well on the relationships of these historical actors with the functions of the institution of the Inquisition, and on their interactions and experiences within, outside, and around the re-created ritual, cultural, and judicial space of an Inquisitorial Palace.

Modeling Cultural Competence and Teaching Empathy in a Digital Humanities Context

One of the primary goals of this project is to emphasize the relevance of humanistic and historical scholarship on religious intolerance in the past to contemporary debates over modern issues of religious and racial persecution. By examining the nature of religious intolerance and persecution through the story of one young Jewish woman’s ordeal and forced participation in the *auto de fe* of 1601, we explore ways of creating empathy in modern audiences, encouraging tolerance and mutual understanding through historical simulation: By this means, we aim to counter the recent, increase in anti-Semitism and other alarming trends of religious intolerance.

As we have noted, recent scholarship has come to understand the political, cultural, and didactic purposes of the Inquisition’s *auto de fe* ceremonies. Our challenge, therefore, is to re-imagine how its sermons and public sentences, being social and political as well as religious gatherings, functioned to bring together church, state, and people for punishment, instruction, inspiration, and the creation of a common cultural

identity. The project will provide detailed information about 17th century architecture, dress, religious symbolism, and common processional procedure of the time period, all of which will enhance our current knowledge of the human experience of life in 17th century New Spain.

Another major goal of this project is to demystify the institution of the Inquisition. The project will provide access to a vast amount of information about the structure, organization, and day-to-day activities of the Inquisition—information that will be made available to the general public for the first time. The project also re-creates in detail the major buildings and architectural features of the streets along the processional route. First among these historical re-creations of 17th century Mexico City is the virtual reality reconstruction of the Mexican Inquisition Palace and its developmental stages: By bringing the architecture of Mexico City in 1601 alive for the interactive viewer, it offers both students and scholars the rare opportunity to experience a major 17th century city in its splendor. A team of architectural historians have helped with the re-creation and design of historically accurate buildings and built environments, offering an intensively researched focus on the utility and usage-flows of these buildings by real historical actors.

To create empathy and encourage tolerance—two important aspects of humanistic studies of the past—the *Digital Auto de Fe* project attempts to design and implement several interactive and 3D digital re-creations that visually and interactively portray for the scholar, teacher, and student the human experiences, pains, shame, and public punishments related to these acts of religious intolerance.

The basic research questions that the project team hopes to address with this re-creation of the Virtual World of Mexico City in 1601 are as follows:

What would a penitent have actually seen and experienced during the procession of an *auto de fe*?

With an avatar-style approach, the viewer (student/scholar) will be given a direct point-of-view access to the experience of any one of the actual historical actors who participated in the *auto de fe* of 1601.

Placing the viewer “inside” the persona of a convicted heretic will help create empathy and better understanding and a personal connection to the past.

Dialogues, conversations, and speeches can be experienced in either 17th century Spanish or in English translation, with virtually accurate acoustically re-mastered sounds, music, and other visual and audio stimuli that might have been experienced by a spectator of the event.

These types of virtual visualizations and re-creations can also help highlight the painful nature of anti-Semitism, highlighting the problems and pains involved with religious and racial and ethnic intolerance—problems very much at the center of the human condition even today.

How would a lower-class or mixed-race *casta* resident of Mexico City have perceived and experienced the event of the *auto de fe*?

What would the view of various spectators have been, based on their varying positions, social class, and/or racial caste?

How and in what way would the Inquisitors and highest-ranking members of the religious and political elite manifest their power through the spatial creation and manipulation of height, position, and religious and political symbolism?

By viewing the staging and event from the visage and point of view of an Inquisitor, the scholar and student can come to understand issues relating to the spatial representation of power, and also understand the hierarchically stratified nature of the society in New Spain.

By modeling and analyzing these and other research questions, the *Digital Auto de Fe* will serve as a useful tool in examining issues of gender, race, class, status, and political position in colonial Latin American society. With further applications and usefulness beyond the virtual re-creation of the *auto de fe* itself, this project will offer the viewer the chance to delve deeper into the society, culture, and race relations of colonial Mexico City at the turn of the 17th century.

Encountering Culture in a Virtual World: Teaching Race, Caste, and Class through Virtual Simulations

Another goal of the *Digital Auto de Fe* is to portray the relationships among clothing, social status, and caste identity. The dress and costumes of the period represented the power and authority that individuals held within their social and racial position.¹⁷⁴ Each type of dress and accessory held a specific meaning, portraying either the status or power of the wearer or the lack thereof. Many groups of people participated in the ceremony, from the poor to the wealthy and powerful.

173. For a good discussion of the “spatial turn” in digital humanities, see Richard White, “What Is Spatial History?” (Stanford University Spatial History Project, 2010).

174. Royal sumptuary laws prohibited certain *castas* from wearing various types of textiles. For an example of the role of the Inquisition in policing these laws, see Martha Sandoval Villegas, “Indecencia, vanidad y derroche en algunos trajes novohispanos de fines del siglo XVII: Conceptualización del mal a través de la indumentaria,” in Erik Velásquez García (ed.), *Estética del mal, memorias del coloquio Internacional de Historia del Arte* (UNAM, 2013), pp. 49–83.



The Viceroy of New Spain, Gaspar de Zuñiga y Acevedo (1596?). Courtesy of Museo Nacional de Historia, Mexico City.

Clothing and costumes served as an essential means in Mexican society of distinguishing social groups from one another. Therefore, not only will the project re-create the dress of the time period, but there will be an array of information on the specific symbolism of the clothing and designs used by the characters (see Fig. 1).



Figure 1. The Viceroy of New Spain, Gaspar de Zuñiga y Acevedo. Character created by MSU Student, Ledis Molina.

The project aims to show era-specific clothing for each participant in the ceremony, as well as the clothing of the general populace that witnessed the event along the street. Each character is fully interactive and their dress, race, caste, and social status are explained in detail. The racial and social makeup of Mexico City in 1601 will be portrayed proportionately, based on the available census and population documents known as *padrones*. In this manner, the relative number and ethnic identities of characters and bystanders will represent an approximated view of the varied racial and *casta* makeup of Mexico City in the early 17th century (see Figs. 2-3).

Illustration and design work involving several of the major characters used in the Virtual World have been mocked up by graphic artists Dave Gibbon,

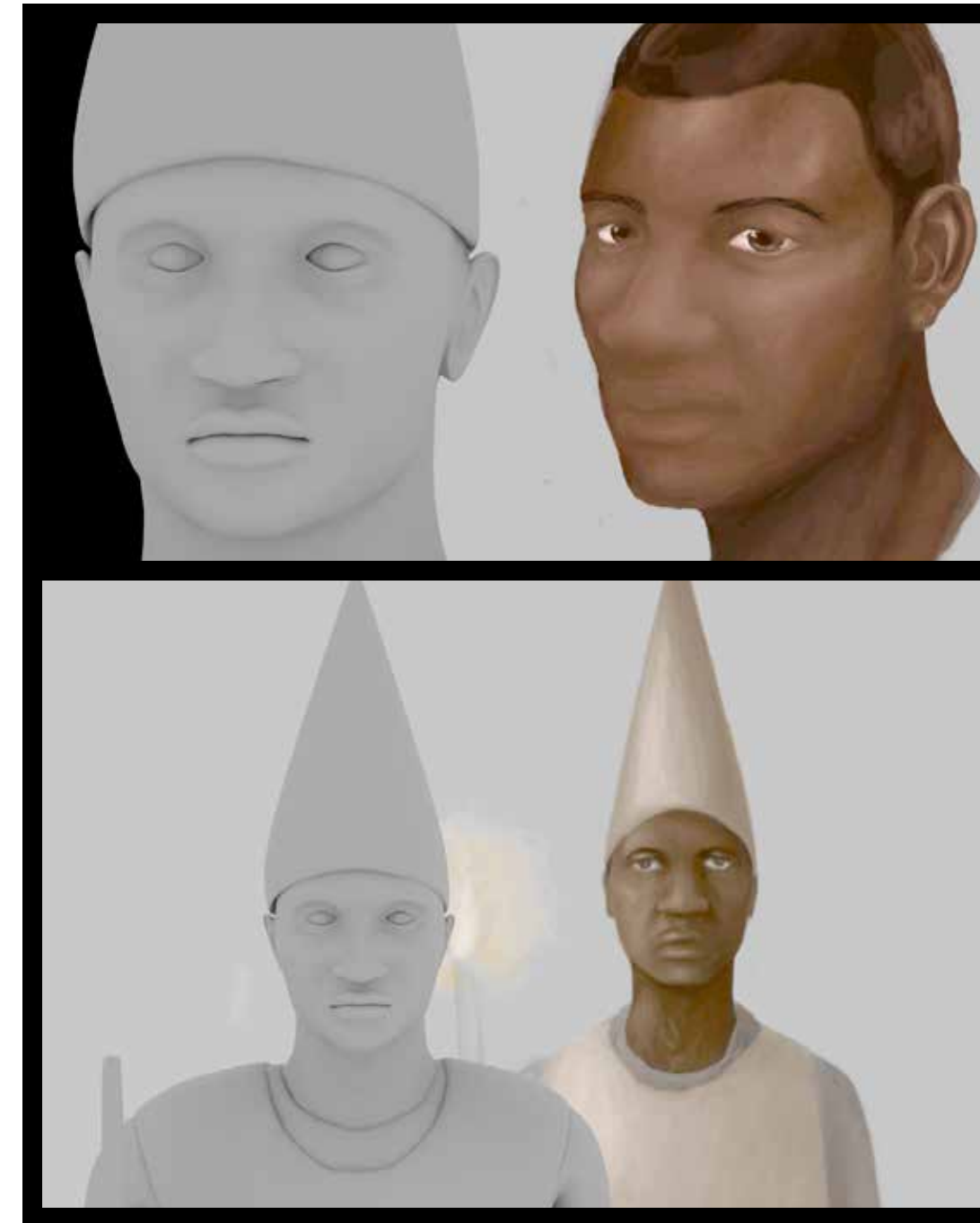


Figure 2. Concept art for the initial facial design of the African Slave, Juan Mozambique, assistant of the chief jailor of the Mexican Inquisition. Concept art by Michaela Šimonová, digital conversion by Ledis Molina.

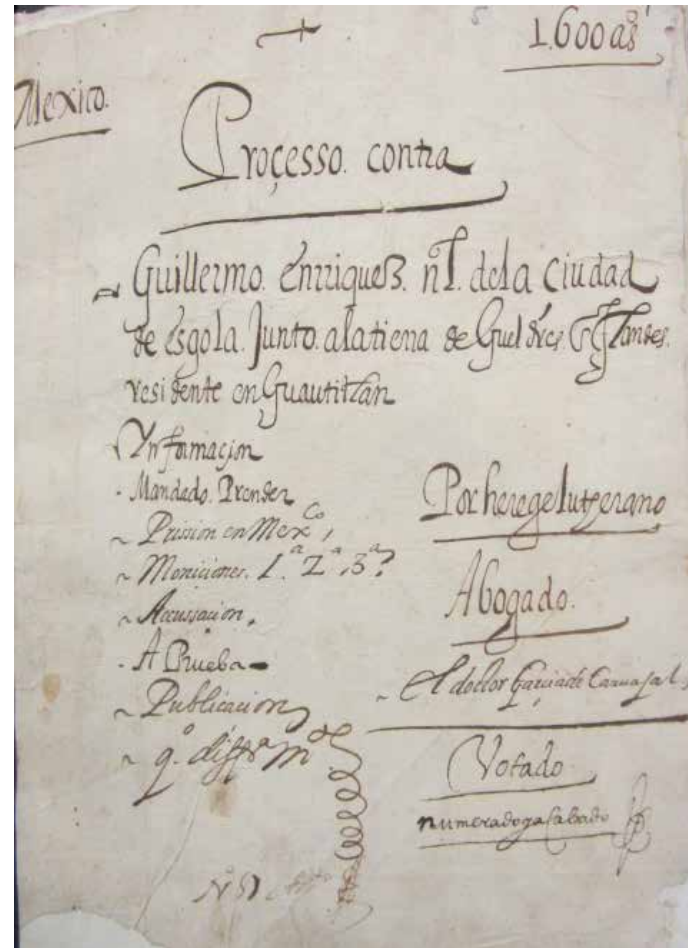
Figure 3. African Slave, Juan Mozambique. Concept art by Michaela Šimonová, digital conversion by Ledis Molina. Mozambique was tried for illegally taking secret notes to the prisoners and processed in the *auto de fe* of 1601.

Ledis Molina, and Andrea Flores Navarrete. Michaela Šimonová and a separate team from the Comenius University of Bratislava, working in conjunction with MSU Honors student Sarah Powell and other student artists, are currently aiding in the creation of more concept art; designs for further digital characters are in various stages of development.

Spanish language transcription, translation, and analysis of the original archival primary sources of the Mexican Inquisition form the core of the historical documentation. Dr. Argelia Segovia Liga leads the team of historians and students who are currently accessing, analyzing, and transcribing materials from one of the largest and most complete surviving archives of any Inquisition Tribunal, the Mexican Inquisition's surviving documentation from the *Archivo General de la Nación* in Mexico City. A significant number of original sources are also found in private libraries and museum collections in the United States, such as in the Conway Collection at the Helmrich Center for American Research (part of the Gilcrease Museum and Collections in Tulsa, Oklahoma); taken together, these offer a very intimate and minutely documented look at the past of this repressive institution and its historical actors, officials and, in many cases, its victims. One set of documents (to be discussed in a separate digital publication in Bear-Works Digital Commons) will be the trial transcripts of the case against Guillermo Enríquez, a Flemish sailor and one-time privateer.

Studying Human Interactions with the Built Space: Virtual Reality Re-Creation of the Palace of the Mexican Inquisition

In the execution of these goals, the *Digital Auto de Fe* focused in its first phase on the central *traza* or grid plan of the 17th century Mexican capital city in general and, more specifically, on the plaza of Santo Domingo,



“Inquisition trial against Guillermo Enríquez, native of Flanders for heresy” (1600). Conway Collection of the Helmrich Center for American Research, Gilcrease Museum.

whose centrally located palace complex once held the Tribunal of the Holy Office of the Inquisition (see Fig. 4). In studying more than just the built environment, this project has investigated and incorporated numerous historical, cultural, archaeological, and architectural methods, sources, and interpretations, in order to offer a historically supported virtual re-creation of the cultural heritage of 17th century Mexico City.



Figure 4 : Plaza de Santo Domingo in Mexico City, with view toward the Palace of the Mexican Inquisition as it appeared ca. 1655. Virtual re-creation by Dulce Martinez Roldán.

Interactive visualization can be seen here: <https://kuula.co/post/7PHQJ>

In 2016, after extensive preliminary work on the themes and initial digital character designs, an opportunity arose in the MSU Honors College to expand its international partnerships with the *Universidad Anáhuac Mayab*. A specialized research exchange program created in 2017 between the two institutions launched the second phase of this project under the co-direction of Dr. Antonio Rodriguez Alcalá (professor of Architecture and Virtual Cultural Heritage reconstruction at *Anáhuac Mayab*), who now serves as the project's chief architectural consultant, and Dr. John F. Chuchiak IV (MSU professor of Colonial Latin American History), who serves as chief historical consultant in conjunction with historian and Springfield Public School teacher, Justin Duncan.

With an international collaborative research agreement in place, the MSU Honors College and the School of Architecture at *Anáhuac Mayab* began a fruitful research and student exchange program

focusing on expansion of the project's second phase. Incorporating at this stage intensive research by students of architecture from Mérida, Mexico, and Honors College students from MSU in the fields of history, language, linguistics, art and design, and several other disciplines, this interdisciplinary international working group began its re-creation of the 17th century Palace of the Mexican Inquisition. As the project has developed, a much larger international interdisciplinary research team evolved: Following the Fulbright Research Fellowship at MSU of Dr. Milan Kováč (professor of Ethnology and Cultural Anthropology at Comenius University), students and concept artists from Comenius University of Bratislava, Slovakia have added their own skills, talents, and expertise, with Dr. Kováč's students joining the various research teams.

The symbiosis of research fields and disciplinary methods is being applied in a research project whose main purpose is to bring back to life some of the key

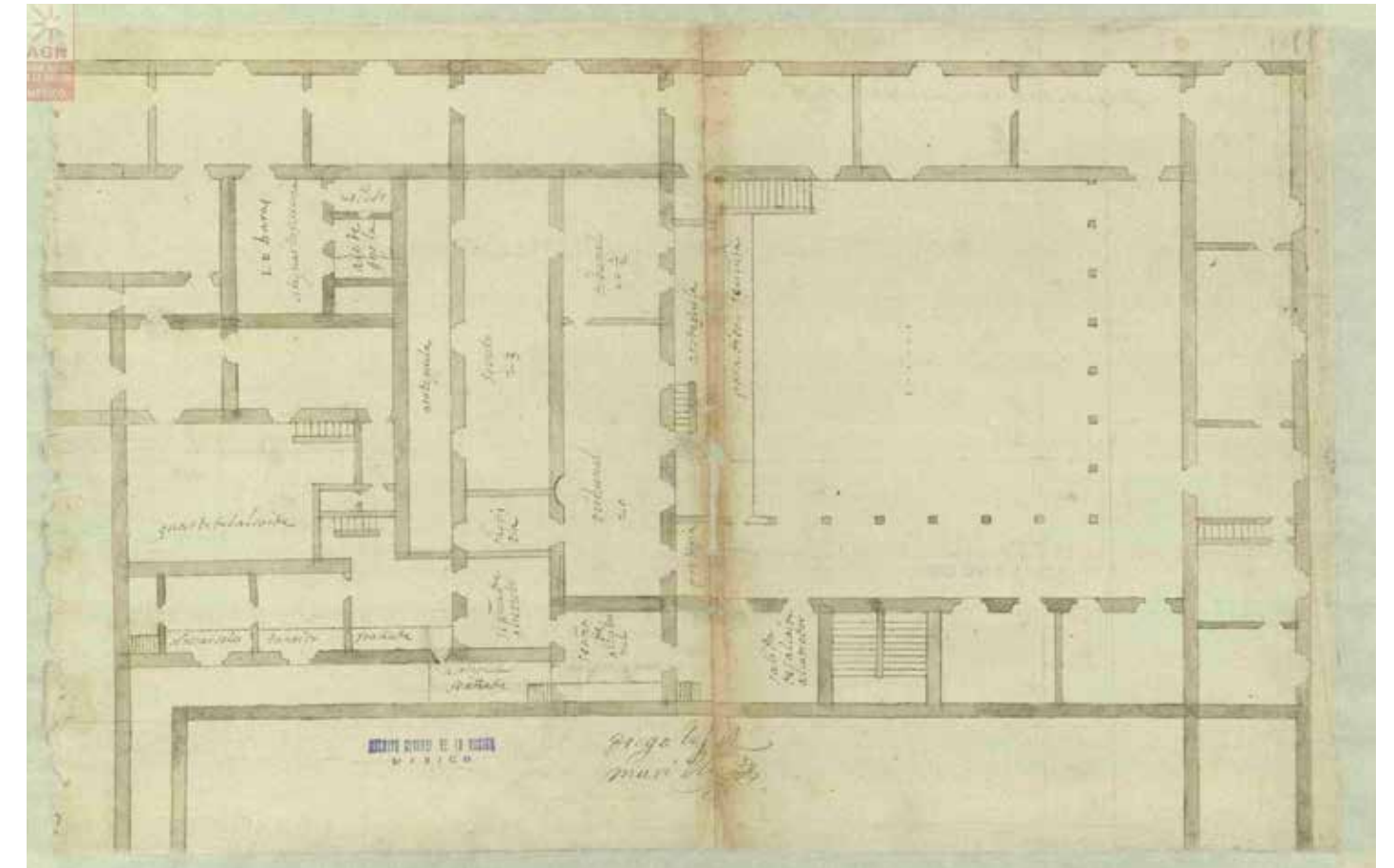


Figure 5. Interior central patio of the Mexican Inquisition Palace (ca. 1655). Virtual re-creation by Dulce Martinez Roldán. Interactive visualization can be seen here: <https://kuula.co/post/7PH9j>

elements in the development of the institution known as the Tribunal of the Holy Office of the Inquisition. Through the combination of (and interactions between) the humanities and information technologies, this second phase has focused on the virtual reconstruction of two of its most representative spaces: the Second Audience Chamber of the Mexican Inquisition Tribunal, and the Secret Archive and Library Room of the Holy Office. The richness of the historical subject and its surviving documents allows the integration of research outcomes from several disciplines (using historical documentation, virtual architectural and artistic reconstruction, virtual

museum spaces, and the study of the evolution of the built environment) all in the same project (see Fig. 5).

Due to the nature of the available information and surviving inventories (which contain descriptions of equipment, furniture, provisions of elements, the flow of historical human actors, and their user-flows within the palace structure), it has been possible to create a historically documented and visually enriched Virtual World. The integration of the digital technology and its methods became the next step, which consisted of moving this 2D historical documentation into the digital realm of three-dimensionality. That is, the reconstruction phase began with the use of



Map and plan of the interior of the Palace of the Mexican Inquisition (ca. 1655). Archivo General de la Nación, Mexico City.

two-dimensional drawing software to re-create the architectural plans of the Inquisitorial spaces within the Mexican Inquisition Palace; this reconstruction was based on a 1655 plan of the architect Diego López Murillo, which exists in the collections of the National Archives in Mexico City.

Subsequently, the team modeled the interiors based on the architectural typologies of the time, using standard types of masonry walls, wooden coffered ceilings, and wooden doors, among other aspects

of the built space. Within the model, a rigorous system of notation was maintained, leading to a uniform system of codes to document evidence and the sources of historical, architectural, and archaeological information used in the historical reconstructions.

The placement phase of the integration of art assets of the Virtual World was rigidly regulated by historical documentation, which included detailed inventories, descriptions, and visitation records of the Mexican Tribunal, all of which indicated with great



Figure 6. Preliminary version of the Sala del Secreto, or the Secret Archives of the Mexican Inquisition. *Virtual re-creation by Antonio Rodríguez Alcalá, with material and cultural objects designed by María del Carmen Rodríguez Viesca.*
Interactive visualization can be seen here: <https://kuula.co/post/7PHzs>

precision the location of each official and their equipment and accoutrements, as well as the placement of their furniture, cultural materials, etc. Environmental elements, such as the placement of Inquisition trial files on the shelves of the Secret Archive, were incorporated by taking into account the characters involved and historical descriptions of the layout of the Secret Archives of the Inquisition (see fig. 6).

The environmental conditions were also replicated with care: Since many of the interior rooms were dark interior spaces without windows, they remained totally occluded from natural lighting and required the creation and placement of candles, lamps, and other historically accurate materials and means of

lighting; these provided the rebuilt space with the physical and ambient characteristics of the actual surroundings (see Fig. 7). The privacy and secrecy demanded in the audience chambers of the Mexican Inquisition required the use of re-created lighting based on candles and other torches mounted on chandeliers which, when incorporated, offered a more realistic re-creation, impressing upon the viewer the fear and terror that a suspect might experience when brought into one of the smaller, dimly lit audience chambers of the Inquisition.

The contrast of the darkness of the Inquisition Tribunal's interior chambers with the light and open patio plan of the main entrance areas (and even with



Figure 7. Preliminary version of the Sala de la Audiencia “de los retratos” of the Mexican Inquisition, with ambient lighting as the chambers would have appeared in the 17th century. *Virtual re-creation by Antonio Rodríguez Alcalá, with material and cultural objects designed by María del Carmen Rodríguez Viesca.*
Interactive visualization can be seen here: <https://kuula.co/post/7PH9j>

the patio of the secret prison section of the palace) is stark, serving as a reminder that Inquisitorial imprisonment was meant more for holding prisoners for the duration of their trials than for long-term imprisonment as a form of punishment (see Fig. 8).

The Pedagogical and Ultimate Research Results of the Project

In targeting its audience, the *Digital Auto de Fe* aims to attract more than just scholars and advanced researchers. The principal goal is to educate the public about the Inquisition's *auto de fe*, as well as to illustrate aspects of life in colonial Mexico. Professors and

teachers worldwide teach courses on the Inquisition, and this project seeks to increase the instructors' and students' knowledge through Virtual World re-creation. The technology allows teachers to show the simulation in class to a whole group, to make it an individual class assignment, or to assign the simulation to be watched and interacted with at home. In addition, resources will be provided for teachers and students to assess understanding and learning objectives.

As a Virtual World of Mexico City in 1601, the project offers advanced scholars the ability to engage with the simulation as a research tool. Scholars of both the Inquisition and of colonial Mexico will find in the



Figure 8. Interior courtyard patio of the secret prisons of the Mexican Inquisition.

Virtual re-creation by Dulce Martinez Roldán.

Interactive visualization can be seen here: <https://kuula.co/post/7IK49>

materials and reconstructions of the built environment, as well as in the representation of the social, racial and ethnic backgrounds and costumes of the characters, a wealth of information for research purposes. The linked primary sources, images, maps, and other historical documents and archaeological artifacts will offer advanced scholars a virtual museum filled with materials both textual and physical to work with and utilize in their research and pedagogy.