Wired! @ 5 (Years): Visualizing the Past at Duke University

The Wired! Group, Duke University[1]

I. Introduction

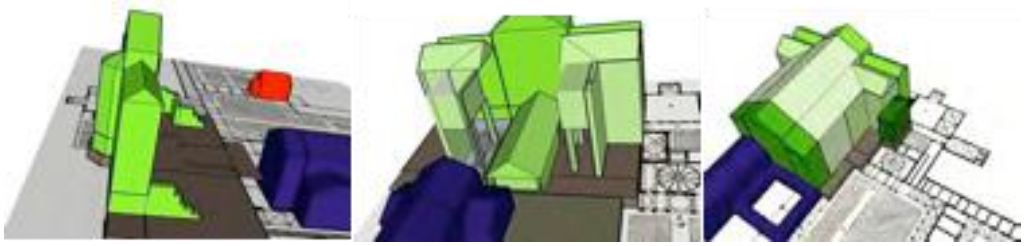
Wired! is a learning community of faculty, staff, and students at Duke University committed to exploring how digital technologies prompt new approaches to teaching and research in the humanities. Our projects focus on communicating humanities research to a broad public through websites and digital applications.[2]

Our special focus is the study of visual and material culture: art, architectural, and urban history. Our research projects and teaching are based in the Wired! Lab at Duke University, where we work in teams to ask new questions and expand upon emerging lines of inquiry on topics related to change and process in the creation of works of art and the man-made environment.

This essay summarizes the activities and achievements of the Wired! initiative at Duke University as we celebrate five years of innovation and experimentation. A follow-up essay will discuss the specific involvement of the visual resources curator, the fine arts and visual studies librarian, and the multimedia specialist with the Wired! group.

II. Visualizing the Past

Wired! was founded to explore the potential of digital visualization technologies for the study of art, architecture and urban space.[3] Since its inception in Spring 2009, Wired! has developed a series of teaching and research initiatives that have created digital narratives on buildings, cities, sculpture, paintings, and other aspects of our cultural heritage. Section V of this essay describes in detail the current research projects of Wired! faculty members working with undergraduate and graduate students and post-docs.



A schematic reconstruction of the building phases of Santa Croce, Florence.

Our initiative started when a group of faculty inaugurated an experimental course in Spring 2009 to test how historical and cultural materials might be taught with digital technologies. The initial group of faculty consisted of a classical archaeologist, an architectural historian, two visual studies/new media specialists, a visual artist, and a computer scientist.[4] The results of the first "Wired!" course (some of which are illustrated here), New Representation Technologies for Historical Materials, dazzled us all, and we realized that teaching with digital visualization tools could prompt completely new questions in the classroom and in research.

Students began to work in team-based groups and generated outstanding public-facing projects, some of which have been published either in print or online. One 3D model is on permanent view at the convent of San Francesco a Folloni, in the vicinity of Naples, Italy; another has evolved into the highly successful international collaboration of Visualizing Venice;[5] while a third led to a project published in the *American Journal of Archaeology*.[6] Faculty, staff, and graduate students have presented their projects and Wired! collaboration at professional conferences and symposia, both in the United State and abroad (see Appendix V).

Reconstruction of the choir screen at Chartres Cathedral.

The Wired! group has introduced courses from freshman seminars through post-doctoral workshops to integrate technology with the study of cultural heritage and humanistic inquiry. In 2014 Wired! inaugurated a Master's degree in Historical and Cultural Visualization as part of the curriculum of the Department of Art, Art History & Visual Studies, an 18-month program to train students to use digital visualization technologies to study historical topics (see section below).

Over the past five years, hundreds of students have learned to make and incorporate digital maps, 3D models, and interactive displays as part of courses in art history, archaeology, and visual studies, transforming the ways in which we teach, interrogate, and represent humanities subjects. Wired! is one of the first programs in art history and visual studies to integrate digital visualization technologies into both graduate and undergraduate teaching and training (See Appendix II)..

Wired! is committed to developing projects that convey new research to the larger public through websites, 3D models, online databases, gaming, computing interfaces, mapping, and mobile applications. Each Wired! course is linked to multi-year projects in the laboratory. Students are invited to join long-term research teams in which

undergraduates work together with faculty and Ph.D. students, and every project has public outreach components (see Research Projects below). We have also developed international research and teaching partnerships with universities in Athens, Padua, Venice, Catania, and Rome.

Computer lab at Venice International University

In addition to undergraduate and graduate courses, Wired! offers workshops for Ph.D. candidates and post-docs (See Appendix III) and tutorials for students, staff, and faculty (see Appendix IV). Wired! created digital art history laboratories for teaching and research in the Smith Warehouse on the Duke University campus and at Venice International University on the island of San Servolo. These laboratories are the sites for the courses and workshops regularly offered by the Wired! faculty and staff.

The Wired! Lab in Smith Warehouse at Duke University.

Wired! is committed to communicating research knowledge to a broad public. The integration of visualization technologies into the regular curriculum (see Appendix II) represents structural and systemic changes in the way knowledge is interrogated in

teaching and research. Wired! projects fuse questions in the Humanities (as traditionally construed) with social, economic, and political issues. Our work begins to engage the viewer in novel ways that revolutionize the role of learning in relation to the public. We are committed to making scholarship available and engaging with a broad audience.

III. Reconfiguring Knowledge in the Digital Age

Profs. Caroline Bruzelius and Sheila Dillon examining stone sculpture in the Nasher Museum of Art, Duke University.

The development of the Wired! initiative was a very measured and deliberate process. Two years of discussion and planning went into the first offering of the Wired! New Representation Technologies for Historical Materials course in Spring 2009. There was a team of five instructors working with ten students (both undergraduate and graduate). It was, to say the least, a luxury to be able to conduct an experimental course in this fashion. Everyone involved knew it was not sustainable as such and required a new model for future offerings.

Reconstruction of the Hadrianic Baths at Aphrodisias, Turkey, by Duke undergraduate Umberto Plaja.

The inaugural Wired! course focused on two specific projects, one classical ("Reconstructing the Past: The Statue Landscape of the Hadrianic Baths at Aphrodisias") and one medieval ("San Francesco a Folloni, Campania, Italy"). The course revealed many issues: assumptions about how knowledge is organized and taught were being shattered by the possibilities of new technologies, the evolution of a site/building could be better represented over time with digital tools, historical topics could be taught in new and more effective ways, new technologies offered new ways to communicate scholarly research, students acquired new technical skills while engaging with primary research

materials to create new interpretations of the data, and by engaging in hands-on reconstructions of a site/building students become active rather than passive learners.

Hypothetical colorization of ancient statuary, by Duke graduate student Elizabeth Baltes.

In 2009, as ideas about digital art history and visual culture and "visualizing the past" began to coalesce, the success and excitement surrounding the Representation Technologies course precipitated an application for a small grant to Duke's Franklin Humanities Institute to convene a working group around the theme of "Reconfiguring Knowledge in the Digital Age: Digital Technologies and the Visual Arts." The mission of this working group, which met biweekly for the next three academic years, was "to expand and develop collaborations, conversations, and reflections on the implication of new technologies for the field of visual culture." The working group's theme would specifically focus on rethinking teaching with new technologies in both undergraduate and graduate programs (vs. independent research projects).

During the first few meetings, the working group identified potential topics for discussion over the course of the first year that could inform the teaching of digital art history and visual culture, specifically under the rubric of "visualizing the past": digital literacy, pedagogical practices, spatial history (movement through time), evidence and attribution, learning the technical tools, participatory learning, entertainment vs. scholarship, collaborative teaching and research vs. single engagement, presentation of the product, and scholarly validity and viability. The group decided on three final topics to address that first academic year: digital literacy (fall), pedagogy (winter), scholarly validity and viability (spring).

Questions posed during the discussion of *digital literacy* included:

- What level of competence and/or understanding of the theories behind the digital tools is required?
- Is there a specific set of skills we can identify that we want students to have?
- What tools do we need for mapping, timelines, 2D models, and 3D models?

Questions posed during the discussion of *pedagogy* included:

- What is the evidence? How can it be displayed?
- What are the aesthetic issues?
- What about citation and the nature of evidence and display?
- How do we document "uncertaintly"?
- What about spatial history and archaeography: is it transparent, documented, and scholarly viable in the new medium?
- What is the "transparency of digital constructions"?

Questions posed during the discussion of *scholarly validity and viability* included:

- Can digital projects be considered for tenure and promotion?
- Is there an expectation that digital products are only ancillary to the written document?
- What is a "good" product?
- What are the issues around "collaborative work" for tenure and promotion?
- What is the impact of scholarly communication and new media journals on scholarly production?

Also, it was observed that working with different cultural heritage materials required different tools:

- Sculpture, in situ or displaced (placement, modeling, coloration)
- Architecture (reconstruction, depicting change over time)
- Painting (in situ frescoes, in situ or displaced altarpieces)
- Cities/urbanism/urban spaces (mapping and GIS)

How do we solve training issues related to digital tools? What is the baseline set of IT skills and IT literacy needed? Do we build an online repository of discipline-specific tutorials that integrate with other training modules such as Lynda.com? Do we offer public workshops? What is the equilibrium between traditional learning (chronology, style, theory) and what is possible with new media technologies?

In addition to the core Wired! team, the Reconfiguring Knowledge working group regularly invited other Duke faculty, staff, and students to the meetings, depending of the scheduled discussion topic for the week, as well as outside speakers for public lectures and group discussions. These invitees ranged from faculty and graduate students from the departments of Art, Art History & Visual Studies, Classical Studies, and History to the fine arts/visual studies and GIS librarians to Duke's scholarly communication officer to the university's digital strategist. Computer scientists from the Duke Visualization Technology Group, the editorial director of the Duke University Press, and faculty from the University of North Carolina – Chapel Hill, North Carolina State University, and North Carolina Central University also joined meetings throughout the year.

We had the opportunity to re-apply for a Franklin Humanities Institute grant for the second and third years of the program. This was crucial for the Wired! group because it was during the next two years that ideas about a new master's degree in historical and cultural visualization/digital art history emerged. It took a full two years to develop the philosophy and curriculum for the program and send the proposal through the university's review and approval structure. The new M.A. degree was approved in

December 2013 and the first class of three students was admitted for Fall 2014.

IV. Master's Degree in Cultural and Historical Visualization/Digital Art History

Laser scanning of an apostle statue from Sarlot (Brummer Collection, Nasher Museum of Art, Duke University).

The new 18-month program in Cultural and Historical Visualization/Digital Art History at Duke integrates historical disciplines and the study of cultural artifacts with digital visualization tools for the analysis and presentation of research. This program builds on well-developed strengths at Duke University, and requires ten courses over three semesters in addition to funded summer research. Students affiliate with an existing faculty research initiative, from which they develop their own independent research project for the M.A. thesis. Common themes that unite many of the projects are the visualization of process, the representation of change over time, and the reconstruction of the contexts of displaced objects and object biographies.

The M.A. prepares students for future work in such fields as public history, city planning and architectural design, cultural heritage centers, museum exhibition design, and visualization- based journalism. It also provides a springboard for advanced scholarly work in art and architectural history, archaeology, urban studies, visual studies, and other fields.

The ideal M.A. student in our program seeks engagement with the Digital Humanities, and conceptualizes digital visualization as part of an intellectual process. The program encourages students from across the Humanities and Social Sciences, whether from established disciplines such as history, archaeology, and art history, or from emerging fields of study, such as spatial history, media arts, historical anthropology, and cultural geography.

V. Current Wired! Research Projects

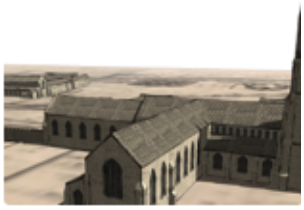
Wired! faculty and postdoctoral fellows engage with large, long-term research themes that link research and teaching. Students and faculty work together on our collaborative projects, many of which evolve into independent initiatives such as honors or master's theses. All of our work is developed through a team approach to learning and rethinking the ways in which we can represent historical questions in the fields of art, architectural, and urban history, as well as in the collecting and display of objects. Our

goal is to understand how new visualization technologies permit us to ask, and answer, old and new questions, and to develop new methodological approaches in our areas of interest.

Augmenting Urban Experiences
Victoria Szabo

Augmenting Urban Experiences focuses on the process of digital city-making itself, drawing upon technology studies and media theory as well as historical documents, monuments, architecture, and other cultural artifacts. Researchers in this team are focused on the development of digital and mixed reality experiences as tools for discovery and research presentation. We focus on annotated digital maps, 3D modeling, augmented reality overlays, audio and video supplements, procedural narrations, data visualizations, and network flow diagrams in order to understand both the past of a city and its presence and effects in contemporary experiences of it. With projects running in Durham, Venice, and soon Bremen with a mobile app framework under development of on-site exploration experiences, the project goals are both to create multimodal research products that take advantage of the affordances of both analog and digital media forms as well as to develop guidelines for an emergence genre for both research presentation and transformative, affective experience in real time and space.

The Convents of the Mendicant Orders
Caroline Bruzelius



Many of the medieval convents of the Franciscan and Dominican orders were systematically destroyed in the Reformation and after the French Revolution. *The Convents of the Mendicant Orders*
project engages with the spaces created by the friars (convents, churches, and piazzas) as part of on-going research and teaching projects that map and model the impact of this religious phenomenon in Europe. We are particularly interested in how mendicant structures underwent constant change as convents absorbed growing pressure from lay donors for tombs, private chapels, and votive decorations: this process of change is strikingly modeled in the San Francesco a Folloni project, the San Lorenzo Maggiore in

Naples project, and in our reconstructions of the mendicant houses of Oxford.

Duke/Durham Ghosts
Victoria Szabo

Duke/Durham Ghosts explores the presence of the local past through augmented reality and web-based application design. This project is a partnership between Duke Wired! and the Duke Information Science + Information Studies Certificate Program. Our goal is to enrich lived experience in space by overlaying images, audio files, and other information from past events onto contemporary sites on campus and beyond. This kind of place-making emphasizes thick histories and rich descriptions of specific spots as a means of understanding a topic or theme in an embodied, spatial way. Building upon earlier Information Science + Information Studies capstone experiments with Preservation Durham on creating Augmented Reality tours in the city using existing scripts, and on creating an interactive marker-based map of campus, and on the Visualizing Venice digital heritage projects, our goal is to create a set of downloadable experiences for the public that rely upon original archive research and media authorship by our students. We are currently creating "ghost tours" of the History of Duke Activism, The Transformations of East Campus, and The Construction of West Campus. This involves working with Duke's Special Collections in the Rubenstein Library to search for (and scan) primary historical materials, mining newspaper archives for relevant coverage of theme events, creating text, image, audio, and video features on specific topics, and organizing them all into map-based databases accessible as websites, augmented reality experiences on campus, and eventually within a virtual game environment.

Digital Athens
Sheila Dillon, Timothy Shea

The aim of *Digital Athens*, which has developed out of an earlier project, *Death, Burial and Commemoration in Athens from Antiquity to the Late 19th Century*, is to produce a database and digital map of the archaeological remains of ancient Athens. This project is a collaborative multi- disciplinary endeavor based in the Wired! Lab that

involves students at Duke as well as international colleagues based in Athens. In the first phase of the project, the team is focusing on digitizing and geo-referencing historical maps, and mapping the material remains of burials, domestic spaces, waterworks, sculpture, marble and bronze workshops, and the wealth of material recently uncovered in the Athens Metro Excavations. The visualization of change over time and the construction of an interactive database are major aims of this project.

The Kingdom of Sicily Database Project
Caroline Bruzelius and Joseph Williams

The Kingdom of Sicily Database Project is a geo-referenced database of historic images from the 15th to the early 20th century of medieval monuments and cities in the historic Kingdom of Sicily, c. 1000-1400 CE. We are collecting and cataloging images from museums, libraries, archives, and publications that illustrate monuments that have been heavily affected by urban expansion, earthquakes, wars (especially the aerial bombardment of WWII), and restoration. The database is organized topographically by location. Our purpose is to make the tens of thousands of images produced by travelers and scholars as part of the Grand Tour experience, which are now dispersed in hundreds of collections worldwide, available to the public for research and study. The project was supported by a Collaborative Research Grant from the National Endowment for the Humanities, as well as by Duke University and the Hertziana Library in Rome. This initiative is directed by Caroline Bruzelius, Duke University, and William Tronzo, University of California at San Diego, with Paola Vitolo, University of Catania, as the Project Manager. A team of Italian scholars has collaborated on the research, and work is proceeding at Duke with the help of Joseph Williams, a doctoral candidate in the History of Art.

The Lives of Things
Caroline Bruzelius, Mark Olson, Mariano Tepper, and Guillermo Sapiro

The goal of the *Lives of Things* project is to create virtual reconstructions of context for the works of art that are displayed in museums. Our interactive displays and

hybrid digital/physical exhibition platforms model the original location, color, and meaning of works of art in the collections of the Nasher Museum of Art at Duke University. The course/research initiative includes students from Art History and Visual & Media Studies, Computer Science, and Engineering. Students work in teams in close collaboration with professors and graduate students or post-docs, learning an array of techniques and technologies that merge historical questions with 3D modeling, laser scanning and photogrammetry, geospatial mapping, augmented reality, gaming platforms, projection mapping, spatial analysis, data visualization, web or app design, writing, graphic design, database design and management, computer programming, interactive sensors, and gesture recognition interfaces such as Kinect and Leap Motion.

Operating Archives
Mark Olson

The *Operating Archives* project emerges out of a concern with the preservation of the "performativity" of objects in the digital archive. While digital archives afford access to historical texts, images, and objects to be read and viewed, often in a reconstituted contextual milieu, what about objects that were intended to be operated? Taking the creation of a multimedia/multimodal archive of historical medical technologies as both case study and laboratory, this project explores different interfaces for interacting with digital objects that attempt to reconstruct contexts of use. Leveraging both interactive gaming platforms and physical computing interfaces, the project explores embodied modes of interacting with digital objects.

Paris of Waters
Sara Galletti

Paris of Waters is a research project that focuses on the impact of water on the demographic, social, architectural, and urban development of the city of Paris through time. The project is concerned with water in a wide array of forms – as resource, as commodity, as means of transportation, as funnel for the city's waste, and as cause of disaster and death – and with making it visible as a powerful agent of urban change. Paris of Waters challenges traditional urban history narratives – which tend to focus on design,

monumentality, and the stylistic features of the built environment – by highlighting the role of infrastructure, underground works, and hydraulic management and engineering as defining elements of a city's development and history.

Visualizing Venice
Caroline Bruzelius, Kristin Lanzoni, Mark Olson, and Victoria Szabo

The *Visualizing Venice* project began in 2010 to map and model growth and change in Venice based on archival and documentary sources. *Visualizing Venice* is a collaboration with the University of Venice (IUAV) and the Department of Engineering at the University of Padua. The team now consists of about thirty faculty, post-docs and graduate students. At Duke we have developed a series of courses and independent research projects under the guidance of Prof. Kristin Lanzoni; one of these is the VIVA project (see below), an interactive map of the city. We are exploring a new initiative on human-natural systems with Duke's Nicholas School of the Environment to explore the connection between the city of Venice and its lagoon. We have set up a digital laboratory at Venice International University, where we offer interactive training workshops for graduate students and recent Ph.D.s.

Venice Interactive Visual Atlas (VIVA).
Kristin Lanzoni, Iara Dundas

The *Venice Interactive Visual Atlas* (VIVA) is an emerging website that will provide access to information about Venice through historical views, maps, and surveys of Venice. Because of its remarkable archive, Venice is one of the best documented cities in Europe, with vast information on the history of the city, its monuments, and its institutions. The VIVA website is conceived as a vehicle that brings the history of the city to scholars, students, and the general public by visualizing data on historic maps and surveys. This digital atlas of Venice, unlike traditional atlases, permits the dynamic visualization of information about transformation and change of the city as a whole.

Venice Virtual World
Kristin Lanzoni, Nicola Lercari, Iara Dundas

The *Venice Virtual World* project has recreated the life of Venice—its buildings, bridges, boats, gardens, and inhabitants—in a 3D virtual environment. The focus is on the now completely transformed zone of the city around the train station. Using old maps, plans, and costume books, students have reconstructed Venice as it appeared in 1740. The outcome will be a navigable virtual world with digital storytelling.

Appendix IA
Core Wired! Members

Panel discussion by Wired! team members Profs. Sheila Dillon, Caroline Bruzelius, Kristin Lanzoni, Victoria Szabo, and Mark Olson at the National Humanities Center, Research Triangle Park, North Carolina, Fall 2013.

Caroline Bruzelius
Anne M. Cogan Professor of Art History, Department of Art, Art History & Visual Studies

Caroline Bruzelius works on medieval architecture, sculpture, and urbanism. She has published on French Gothic architecture (the abbey church of St.-Denis and the cathedral of Notre Dame in Paris) as well as on medieval architecture in Italy, in particular that of Naples in the 13th and 14th centuries (in both English and Italian editions). In 2014 she published a book on the architecture and urban impact of the mendicant orders: *Preaching, Burying and Building. Friars in the Medieval City*. Bruzelius has also written many articles on the architecture of medieval nuns in enclosure, an area in which she did pioneering work. Her 1991 catalogue of the Brummer Collection of Medieval Sculpture at Duke University is now being revisited as a series of interactive display installations developed in collaboration with Mark Olson, Marino Tepper, and Guillermo Sapiro of Duke University.

She has been awarded numerous grants and prizes from organizations including the Guggenheim Foundation, the National Endowment for the Humanities, a visiting professorship at the Max-Planck Institute (Hertziana Library), and the Fulbright Association. She is a fellow of the American Academy of Arts and Sciences and the Medieval Academy. From 2004 to 2008 she was the Director of the American Academy in Rome. Bruzelius is co-director of a database on images of the monuments in the medieval Kingdom of Sicily, and is preparing two new books: "The Cathedral and the City," and a broad survey of architecture in the medieval Kingdom of Sicily from the Norman invasion to the beginning of the Romanesque.

Sheila Dillon
Professor of Art History and Classical Studies; Chair, Department of Art, Art History & Visual Studies

Sheila Dillon received a Ph.D. in Classical Art and Archaeology from the Institute of Fine Arts, New York University. She teaches courses on Greek and Roman art. Her research interests focus on portraiture and public sculpture and on reconstructing the statuary landscape of ancient cities and sanctuaries. Her books include *The Female*

Portrait Statue in the Greek World (2010); *Ancient Greek Portrait Sculpture: Contexts, Subjects, and Styles* (2006), which was awarded the James R. Wiseman Book Award from the Archaeological Institute of America in January 2008; *Roman Portrait Statuary from Aphrodisias* (2006); and an edited volume, *A Companion to Women in the Ancient World*. Dillon was a member of the Aphrodisias Excavations in Turkey from 1992-2004, has worked at the Sanctuary of the Great Gods on the island of Samothrace, and now spends summers doing fieldwork in Athens.

She is currently working on a number of projects, including a diachronic study of death, burial, and commemoration in Athens from the 5th century BCE to the 19th century CE, which leverages digital visualization to map the shifting locations of burials and the findspots of sculpted tombstones, and a history of portrait sculpture in Roman Athens, which examines the impact of Roman rule and Roman portrait styles on Athenian portraiture.

Sara Galletti
Assistant Professor of Art History and Director of Graduate Studies, Department of Art, Art History & Visual Studies

Sara Galletti received a joint Ph.D. in the History of Architecture and Urbanism from the Université de Paris IV–Sorbonne and the Università IUAV of Venice. Her main field of research and teaching is the history and theory of 16th- and 17th-century architecture in France. Her first book, *Le Palais du Luxembourg de Marie de Médicis, 1611-1631*, was recently published by Éditions Picard (Paris, 2012).

She is currently working on two projects: "Practice into Theory: Philibert Delorme, the Premier Tome de l'Architecture (1567), and the Profession of Architecture in Early Modern France," which analyses the connections between architectural theory and practice in 15th- to 17th-century France; and "Paris of Waters," which focuses on the impact of water on the demographic, social, architectural, and urban development of the city of Paris through time.

Hannah Jacobs
Multimedia Analyst, Wired!, Department of Art, Art History & Visual Studies

Hannah Jacobs joined the Wired! Lab in September 2014 after studying Digital Humanities at King's College London. Previously, she obtained a B.A. in English/Theatre from Warren Wilson College, and she worked at Duke's Franklin Humanities Institute from 2011-2013 before departing for London. Hannah's academic interests include late-19th- and early-20th-century women's writing and women's movements, network analysis, and relationships between texts and imagery in visualizations. Her various other interests include ceramics, photography, and working on her family's farm.

Kristin Huffman Lanzoni
Postdoctoral Associate, Wired!, Department of Art, Art History & Visual Studies

Kristin Huffman Lanzoni is a postdoctoral associate in the Department of Art, Art History & Visual Studies at Duke University. Her current research focuses on the uses and configurations of space for the visual arts, in particular the spatial relationships formed in early modern Venice. Much of our understanding of these systemizations has

been lost due to demolished or partially dismantled sites. Lanzoni's reconstructions permit renewed interpretations of how monuments connected to larger visual systems and how art and architecture generated meaning(s) within and across spaces.

Her book project, "Alessandro Vittoria and the Venetian View," examines the skillful construction of visual systems in the second half of 16th-century Venice through the lens of the premier sculptor-architect's artistic commissions. The conceptualization of these works as elements of larger spatial systems formed part of a greater cultural phenomenon in the ordering and presentation of knowledge, such as memory palaces, trees of knowledge, libraries and art collections, along with Counter Reformation spirituality.

Lanzoni's interest in reconstructing altered or demolished structures led her to work with *Visualizing Venice* (http://visualizingvenice.org). She is currently a Wired! project manager and directing several digital projects including *Venice Virtual World*, the *Venice Interactive Virtual Atlas* (VIVA), and the reconstruction of a demolished palace in conjunction with the exhibition *Water and Food in the Venetian Lagoon* in the Ducal Palace, July –November 2015.

Lanzoni completed her Ph.D. at the University of North Carolina at Chapel Hill with a concentration on the art and architectural history of early modern Europe.

Mark Olson
Cordelia and William Laverack Family Assistant Professor of Art, Art History & Visual Studies, Department of Art, Art History & Visual Studies

Mark Olson's research explores how emerging technologies transform a wide array of communities of practice, from the use of new visualization technologies in art history and archaeology to the adoption of robotics in contemporary medicine. He contributes to the Wired! Lab expertise and research on emergent 3D modeling and geo-spatial mapping techniques, with a particular focus on translating the affordances of these media practices into the concrete problematics of humanistic inquiry. Drawing on visual cultural studies' work that maps the dynamic politics of modernity's scopic regimes, Olson endeavors to foster critical reflection on the epistemologies embedded in and promoted by the Wired! Lab's visualization initiatives.

Victoria Szabo
Associate Research Professor of Visual Studies and New Media, Department of Art, Art History & Visual Studies

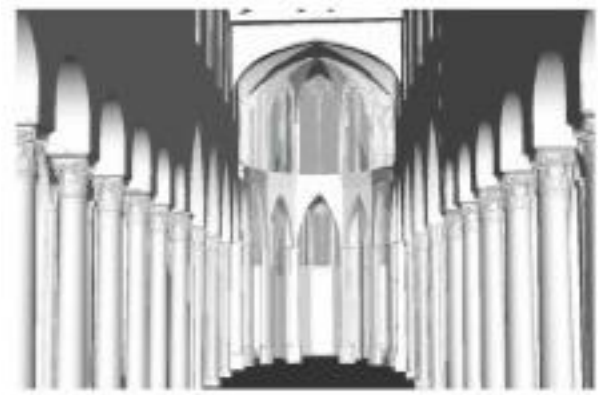
Victoria Szabo is the Director of the Duke Digital Humanities Initiative and the Director for the Information Science + Information Studies Certificate Program. Previously she served as Co-Director of the Franklin Humanities Institute GreaterThanGames Lab. Her interests are in digital media and cultures, in theory and in practice. Her current projects focus on "metaverse" technologies such as interactive maps, virtual worlds, and hybrid reality systems, and how they can be applied to humanities teaching and research. She holds a Ph.D. in English from the University of Rochester and worked as a professional academic technology developer before coming to Duke in 2006.

John Taormina
Director, Visual Media Center, Department of Art, Art History & Visual Studies

John Taormina began his career in visual resources/image management in 1982. He has a B.A. and M.A. in art history as well as formal training in collections management. He has directed the image collections at George Washington University, Oberlin College, The Ohio State University, and the University of Michigan. Since 2000 he has been the Director of the Visual Media Center at Duke University. During the past twenty years he initiated the digital imaging programs in the art and architecture image collections at Ohio State (1994), Michigan (1999), and Duke (2001). As the director of the Visual Media Center at Duke, he oversees all aspects of the digital and analog visual media collections—digital assets management, collection development and preservation, user services, instruction—and also manages the department's publication and communication program.

John served for ten years as editor of the *VRA Bulletin*, the journal of the Visual Resources Association, the international organization of image media professionals. In addition to extensive involvement in publications and educational programs in image collection management, he is currently exploring and researching the use of images and metadata and their support requirements in the Digital Humanities. He is also developing a personal book project on the history of the art museums of Ohio.

Appendix IB
Affiliated Wired! Members



Reconstruction of the apse of San Lorenzo Maggiore in Naples, by Duke undergraduate Umberto Plaja.

Mary T. Boatwright
Professor of Ancient Studies; Chair, Department of Classical Studies

Prof. Boatwright centers her research on ancient Roman topography and the intersection of the built and created environment with social, political, and cultural history. Her publications include *Hadrian and the City of Rome* (1987) and *Hadrian and the Cities of the Roman Empire* (2000). Other recurrent interests are the roles and visibility of Roman women, both at the top of Rome's hierarchies: 1991: "Imperial Women of the Early Second Century A.C." (awarded the Gildersleeve Award); 2005: "Children and Parents on the Tombstones of Pannonia," in *The Roman Family* IV; and 2011: "Women and Gender in the Forum Romanum." Maps and visual material culture are key to other research, from *Peoples of the Roman World* (2013) to a forthcoming article on Agrippa's Map and its environs in Rome, "Visualizing Empire in Imperial Rome."

Maurizio Forte
William and Sue Gross Professor of Classical Studies and Professor of Art, Art History & Visual Studies

Maurizio Forte's work is focused on the development of virtual heritage and digital archaeology. He integrates traditional courses in ancient art history, Etruscology, Roman and Greek archaeology, landscape archaeology, papirology, Egyptology, Pre-Colombian archaeology, and ancient topography with more experimental activities in computing labs and with the use of digital technologies. He is engaged with how digital computing changes the methodology of research in archaeology and the humanities. He spent ten years working in the Supercomputing Center in Italy (CINECA, Bologna, http://www.cineca.it/en), co-founding the Visual Lab, one of the first labs in Europe dedicated to visual applications and image processing in archaeology and cultural heritage. This experience focused on the use of techniques of computer vision for the reconstruction of artifacts, monuments and sites. Forte defines "virtual heritage" as the digital information that is derived from a physical site, whether it is an object, monument,

territory, or landscape.

Neil McWilliam
Walter H. Annenberg Professor of Art History, Department of Art, Art History & Visual Studies

Neil McWilliam received his D.Phil. from the University of Oxford. His publications include *Dreams of Happiness. Social Art & the French Left 1830-1850* (with a revised translation in French, 2007), *Monumental Intolerance, Jean Baffier, A Nationalist Sculptor in fin-de-siècle France*, and *A Bibliography of Salon Criticism in Paris from the July Monarchy to the Second Republic 1831-1851*. His research focuses on the visual culture of 19th- and early 20th-century France, and in particular on public sculpture, the Academy, art criticism, and the inter-relationship between aesthetics and political ideologies during the period. In recent years, McWilliam has published widely on the relationship between conservative politics and the arts in France, exploring the impact of nationalist groupings on artistic production, critical writing, and art history in the decades before the First World War. His ongoing interest in the career of Symbolist painter Emile Bernard involves a particular focus on this artist's turn in the 1890s towards a strongly traditionalist artistic practice, and its ramifications for understanding the relationship between tradition and innovation in fin-de-siècle French art.

Raquel Salvatella de Prada
Assistant Professor of the Practice of Visual and Media Arts, Department of Art, Art History & Visual Studies

Raquel Salvatella de Prada is a computer artist. Her focus is on motion graphics, 3D modeling and animation, and digital design. Among her recent projects, she collaborated with Torry Bend (Theater Studies) on *The Paper Hat Game*, a toy theater performance that integrated digital visuals with live puppetry; created motion graphics for *In my Mind*, a documentary directed by Gary Hawkins; and collaborated on *The Letters Project*, an installation featuring poetry, letterforms, prints, and animation highlighting the potential of digital media in translating the written word. Prior to joining the Duke faculty in 2008, Salvatella de Prada was Creative Director at HG Media, a multimedia design company in Princeton, New Jersey, and also worked in Madrid and London. Her background as a commercial artist reflects her interest in design as a tool for communication, persuasion, or even manipulation.

Lee Sorensen
Art and Visual Studies Librarian, Duke University Libraries

Lee Sorensen received his graduate degrees in art history and library science from The University of Chicago. His articles include "Art Bibliographies: A Survey of their Development, 1595-1821," *Library Quarterly* 56 (January 1986), and the entries on "Art Catalogs and Cataloging" in the online *Oxford Dictionary of Art*. A consultant for the arts in biographical dictionaries, including the *Cambridge Dictionary of American Biography*, he has been on the advisory board for Oxford University Press' *Dictionary of Art* since 2004. Twice an executive board member of the Art Libraries Society of North America, he also served as that society's web administrator during the years of its inception. In 1996 he founded the *Dictionary of Art Historians* (www.dictionaryofarthistorians.org),

which he continues to edit. For more than twenty years he has been art and visual studies specialist for Duke University Libraries, selecting electronic and print materials for the University Library.

Annabel Wharton
William B. Hamilton Professor of Art and Art History, Department of Art, Art History & Visual Studies

Annabel Wharton's work has focused primarily on Late Antique and Byzantine art, architecture, and material culture. But she has also investigated the effect of modernity on the medieval past and its landscapes, first in her study of the first generation of Hilton International Hotels, (*Building the Cold War: Hilton International Hotels and Modern Architecture* (2001) and more recently in a book titled *Selling Jerusalem: Relics, Replicas, Theme Parks* (2006). She has published a new book, *Architectural Agents: The Delusional, Abusive, Addictive Lives of Buildings* (2015), which deals with buildings as bodies and architectures as agents of authoritarianism, abuse, and addiction as well as venues of protection and pleasure. Architectures from both the historical real world and the digital virtual universe provide case studies.

Appendix IC
Wired! Affiliated Doctoral Students

Joseph Williams and visiting graduate student Florian Wiencek (Jacobs University, Bremen) examine the Alife arch in the Nasher Museum of Art, Duke University.

Elizabeth Baltes
Ph.D. Student, Department of Art, Art History & Visual Studies

Elizabeth Baltes is a Ph.D. candidate focusing on Classical and Hellenistic Greek sculpture. Her research interests lie at the intersection of sculpture, politics, and public space in the Greek world. In addition to her primary research interests, Elizabeth is also exploring the use of digital technologies to reconstruct and re-situate ancient sculpture in the built landscape. Her dissertation, "The Dedication and Display of Portrait Statues in Hellenistic Greece: Spatial Practices and Identity Politics," moves beyond the traditional approach to Greek sculpture to recontextualize individual monuments and to visualize entire statue landscapes. Her approach takes into account locational specificity and change over time, two facets of ancient statue dedication that are key to understanding the changing spatial, political, economic, and social meaning of statues. Elizabeth's work leverages digital visualization technologies, such as 3D modeling and mapping softwares, not only as a means of representation, but also as a method of inquiry.

Laura Moure Cecchini
Ph.D. Student, Department of Art, Art History & Visual Studies

Laura is a Ph.D. candidate in art history, working on art and visual culture in the 19th and 20th centuries. Her research focuses on Italian Modernism, and on the intersections between philosophy, art history, and art practice between 1845 and 1945.

Thanks to two travel fellowships from Duke University and from the Center of Italian Modern Art, Laura is currently doing research for her dissertation, in which she analyzes how some Italian artists, critics, and art historians from the 1880s and up to 1945 invoked Baroque tropes to interpret the experience of modernity. She is also interested in the artistic and cultural exchanges between Italy and Latin America, in particular Mexico and Argentina.

Alexandra Dodson
Ph.D. Student, Department of Art, Art History & Visual Studies

Alexandra Dodson is a Ph.D. candidate working with Prof. Caroline Bruzelius. Alexandra's research is focused on the artistic and architectural patronage of the Carmelite Order in central Italy in the 13th and 14th centuries. She is interested in the use of digital technologies for the visualization of historic materials and is a contributor to *Visualizing Venice*, an international collaborative using technologies to illustrate the urban and architectural history of Venice. Alexandra received a B.A. in Art History with highest honors from the University of North Carolina at Chapel Hill in 2006. She has been awarded grants from the Fulbright Foundation and the AAUW.

Iara Dundas
Ph.D. Student, Department of Art, Art History & Visual Studies

Iara Dundas is a Ph.D. candidate studying the architecture of early modern France and Italy. Iara earned her B.A. in Art History from the University of Central Florida in 2007 and an M.A. (with distinction) in Art History from the University of Massachusetts, Amherst in 2010. She is particularly interested in ephemera and the relationship between temporary structures and permanent structures, especially within the context of court and religious festivals and spectacles. Other areas of research include the history and architecture of theater and performance, the early modern Jesuits, and the intersections of art and science in the 16th and 17th centuries.

Katherine Jentleson
Ph.D. Student, Department of Art, Art History & Visual Studies

Katherine Jentleson is a Ph.D. candidate specializing in the art of the United States, with a focus on modern and contemporary art. Her dissertation is on the history of folk and self-taught art in the United States. Drawing on interdisciplinary methodologies, including Social Network Analysis, she hopes to demonstrate and reflect on the evolution of the category of self-taught art in American institutions, beginning with the MoMA's 1930s exhibitions and moving to current phenomena, such as the Outsider Art Fair and the near-closure of the American Folk Art Museum. Before she came to Duke in 2010, she worked in the publishing industry, beginning at *Harper's* magazine and spending several years as an editor at *Art+Auction*. She is currently part of a team at Duke that is developing a pedagogical game called Fantasy Collecting that will "gameify" the task of memorization associated with survey courses and teach students about the forces that govern the art market. Jentleson was recently new Merrie and Dan Boone Curator of Folk and Self-Taught Art at the High Museum in Atlanta, Georgia. Jentleson will be the first fully endowed curator to hold this position.

Elisabeth Narkin
Ph.D. Student, Department of Art, Art History & Visual Studies

Elisabeth Narkin is a Ph.D. candidate studying the architecture of early modern France. Elisabeth received her B.A. summa cum laude and Phi Beta Kappa in art history and French from Boston College in 2007 and an M.A. in art history from The George Washington University in 2009. Her research interests include French court society, architectural spaces for royal children and families, and the convergence of public and private spaces.

Timothy Shea
Ph.D. Student, Department of Art, Art History & Visual Studies

Timothy Shea is a Ph.D. student whose interests include Classical Attic funerary sculpture, interactions between different peoples in colonial and urban contexts, ancient urban development, and communal dining practices in ritual, civic, and domestic contexts. He has done archaeological fieldwork in Athens, Crete, and Sicily and always looks to incorporate archaeological fieldwork and the visualization of material retrieved in fieldwork in his research. He is currently working on the *Digital Athens* project into the Wired! Lab.

Erica Sherman
Ph.D. Student, Department of Art, Art History & Visual Studies

Erica Sherman received her B.A. from Duke University in 2007. She studies architecture and urban development in colonial Latin America with a focus on Brazil in the 16th and 17th centuries. Her specialties include Renaissance and medieval architecture, and early modern art and architecture. She has been awarded a Fulbright grant for her research on Brazil.

Joseph C. Williams
Ph.D. Student, Department of Art, Art History & Visual Studies

Joseph Williams is a Ph.D. candidate studying medieval architecture with Prof. Caroline Bruzelius. His dissertation will consider architectural production in the Mediterranean through a case study of one church: the 12th- and 13th-century cathedral of Molfetta, in Apulia, South Italy. Joseph has been active in the Wired! Lab as a researcher for *Visualizing Venice* (2011-2012), the Alife Arch Project (2012), and the NEH *Kingdom of Sicily Database Project* (2013-present). His interests in digital technology include the 3D modeling and photogrammetry of small architectural details, as well as the mapping of data and observations in GIS.

Appendix ID
Wired! Master's Students

Students analyzing architectural reconstructions in the Wired! Lab.

Henrietta Miers
M.A. Student, Historical and Cultural Visualization, Department of Art, Art History & Visual Studies

Henrietta Miers is a first-year M.A. student in the Historical and Cultural Visualization program. She received her B.A. in art history from Princeton University, where she took a variety of classes in different branches of art history. She wrote her senior thesis on the British-Nigerian contemporary artist Yinka Shonibare's Fake Death Series. She compared and contrasted Shonibare's photographs to the original paintings he used, while looking at the literal and metaphorical death that appear in both. During her summers she interned for Maya Lin, transcribing videos for her What is Missing Project? She also interned at the SOHO gallery, Deitch Projects, and at Daniel Wolf's studio.

Jordan Noyes
M.A. Student, Historical and Cultural Visualization, Department of Art, Art History & Visual Studies

Jordan Noyes is a first-year M.A. student in the Historical and Cultural Visualization program. Her research interests focus on using digital technologies to visualize and analyze traditional art historical research. Jordan has collaborated on many Wired! Lab projects including Visualizing Venice and Digital Athens, learning to work with Omeka, Neatline, and QGIS/ArcGIS, while still using archival research methods. This exposure to the Wired! projects led her to an undergraduate thesis that looked at the representations of street art in archives, how ephemeral art is remembered, and the importance of space to street art through a written paper and visual map/timeline.

Jessica Pissini
M.A. Student, Historical and Cultural Visualization, Department of Art, Art History & Visual Studies

Jessica Pissini is a first-year MA student in the Historical and Cultural Visualization program. After receiving two B.A.s from Penn State University, one in Integrative Arts/Film Studies and the second in Classical Archaeology, she moved to Los Angeles to work in the film and television industry. Jessica also continued her summer

position as a graduate assistant on the Mendes Excavation in Egypt through 2012. During her semesters at Duke, Jessica will combine her interests in classical art and archaeology with her experience in the visual and digital arts.

Students learning photographic techniques for the surface analysis project, Spring 2013.

Appendix II
Wired! Courses

Wired! art history and visual culture courses incorporate digital technologies to engage student learning in art and architectural history. We engage digital tools in the classroom and in laboratory sessions to ask new types of questions about traditional research materials. The result is that students learn to think about course content in fundamental ways and ask new questions about context and process over time.

Undergraduate class examining Jacopo de Barbari's six-block woodcut, Map of Venice, 1500.

3D Design and Programming in Art and Medicine
Mark Olson and Mariano Tepper

3D Modeling and Animation
Raquel Salvatella de Prada

Archaeology of Ancient Britain
Rebecca Bennett

Art and Archaeology of Ancient Athens
Sheila Dillon

Chateaux of the Loire Valley: Architecture, Court Life and Warfare in Renaissance France
Sara Galletti

Critical Making/Digital Humanities: Materiality, Digitality and the Lives of Things
Mark Olson

Digital Cities
Victoria Szabo

Digital Durham
Victoria Szabo

Undergraduate presentation from the Wired! Representation Technologies for Cultural Materials course.

Digital Humanities: Theory and Practice
Victoria Szabo

Digital Places & Spaces: Exploring the Metaverse
Victoria Szabo

Gothic Cathedrals
Caroline Bruzelius

Introduction To Art History I: Mapping the Movement of Materials and Works of Art
Caroline Bruzelius

M.A. in Historical and Cultural Visualization Proseminar I
Victoria Szabo

M.A. in Historical and Cultural Visualization Proseminar II
Mark Olson

Mapping and Modeling Early Modern Venice (First-Year Seminar)
Kristin Lanzoni

The Medieval Castle in Britain: Fortress, Technology and Power (First-Year Seminar)
Matthew Woodworth

The Mendicant Revolution
Caroline Bruzelius

Motion Graphics in Film and Video

Raquel Salvatella de Prada

The Museum Inside / Out
Caroline Bruzelius and Mark Olson

New Media, Memory and the Visual Archive
Mark Olson

Reconstructing Ancient Worlds
Maurizio Forte

Undergraduate presentation from Wired! New Representation Technologies for Cultural Materials course.

Rock, Paper, Chisel: The Materiality and Context of Medieval Art
Alexandra Dodson

Roman Frontiers
Mary T. Boatwright

Splendor of the City: The Art and Architecture of Renaissance Venice (Freshman Focus)
Kristin Lanzoni

Virtual Form and Space
Nicola Lercari

Visualizing Venetian Art
Kristin Lanzoni

Wired! New Representation Technologies for Cultural Materials
Various Faculty

Appendix III
Wired! Workshops

Attendees and instructors of the first Wired! Workshop in Summer 2010, Duke University.

Wired! hosts workshops on a number of digital visualization tools throughout the year. These are held in the Wired! Lab at Duke University as well as the lab at Venice International University on the island of San Servolo, Italy. It is our belief that such opportunities extend our mission to integrate the teaching of art history with visualization technologies to a larger interdisciplinary audience both at home and abroad. For these workshops, we generate a number of self-directed tutorials for participants that we publish for anyone who wishes to use and reuse them.

June 2010: Digital Visualization Technology for Archaeology, Architecture, Art History and Urbanism
Duke University
Faculty: Victoria Szabo and Mark Olson (Duke University)

June 2011: Digital Visualization Technology for Archaeology, Architecture, Art History and Urbanism
Duke University
Faculty: Victoria Szabo and Mark Olson (Duke University)

June 2012: The Cisterns of Venice
Venice International University, San Servolo, Venice
Faculty: Giorgio Gianighian (IUAV) with Victoria Szabo and Mark Olson (Duke University)

May 2013: Mapping Space and Time
Duke University
Faculty: Walter Scheidel (Stanford)—ORBIS; Nicole Coleman (Stanford)—The Knot; Kelly Johnston (UVA)—Neatline, with Victoria Szabo and Mark Olson (Duke University)

June 2013: The Venetian Ghetto
Venice International University, San Servolo, Venice
Faculty: Donatella Calabi (IUAV) with Victoria Szabo and Mark Olson (Duke

University)

June 2014: Venice: the City and the Lagoon
Venice International University, San Servolo, Venice
Faculty: Caterina Balletti (IUAV), Isabella di Lenardo, (IUAV), Victoria Szabo (Duke University).

June 2015: Venice: The 2015 Venice Biennale
Venice International University, San Servolo, Venice
Faculty: Victoria Szabo and Mark Olson (Duke University), with Ludovico Galeazzo (IUAV), Chiara Di Stefano (IUAV), and Hannah Jacobs (Duke University).

Appendix IV
Wired! Self-Directed Tutorials

A model by Duke first-year students of the exterior of the destroyed church of San Giacomo in Venice.

These online tutorials focus on the digital tools used by the Wired! Lab and are intended to provide a guide for understanding and applying digital tools for individual projects. Our tutorials have been written by our faculty and staff as stand-alone presentations and as supplements to teaching.

Introduction To SketchUp — covers all the basics of modeling and texturing in SketchUp

SketchUp Special topics:
• Adding Textures
• Animation and Video export
• Construction with layers
• Modeling from Photographs, Site Plans, and Floor Plans
• Modeling from Photographs
• Creating Textures in Photoshop (for SketchUp)
• Rendering your Model in 3DS Max
• 3D Printing with Makerbot from SketchUp

Introduction To Google Earth — covers placing a 3D model, making placemarks, polygons, annotations, and a tour

Introduction To Google Earth & QGIS — introduces absolute basics of Google Earth & GIS to help you understand the comparison

Neatline — covers nearly everything you might ever need to know about Neatline, taken from docs.neatline.org

Neatline & Non-Linear Arguments — a philosophical approach to creating projects in Neatline and Omeka

Introduction To Photogrammetry — using photosynth
Appendix V
Wired! Related Publications and Presentations

Books and Book Chapters


Laser scans of the head of the Virgin Mary from the choir screen of Chartres Cathedral. Brummer Collection, Nasher Museum of Art, Duke University.

Bruzelius, Caroline. *Preaching, Building and Burying: Friars and the Medieval City*. London: Yale University Press, 2014.

Bruzelius, Caroline. "Visualizing Venice: An International Collaboration." In *Lo spazio narrabile. Scritti di storia inonore di Donatella Calabi*, edited by Rosa Tamborrino and Guido Zucconi, 155-160. Venice: Quodlibet, 2014.

Dillon, Sheila, and Timothy D. Shea. "Sculpture and Context: Towards an Archaeology of Greek Statuary." In *Greek Art in Context*, edited by D. Rodríguez Perez. Ashgate, forthcoming.

Olson, Mark J.V. "Hacking the Humanities: 21st Century Literacies and the 'Becoming-Other' of the Humanities" in E. Belfiore and A. Upchurch (Eds.). *Humanities in the Twenty-First Century : Beyond Utility and Markets*. New York: Palgrave Macmillan, 2013.

Articles


"Teamwork Fridays" session in the Wired! Lab.

Bruzelius, Caroline. "Teaching with Visualization Technologies: How Information Becomes Knowledge." *Material Religion* 9 (2013): 246-253

Dillon, Sheila, and Elizabeth Palmer Baltes. “Honorific Practices and the Politics of Space on Hellenistic Delos.” *American Journal of Archaeology* 117 (2013): 207-46.

Lanzoni, Kristin, Mark J.V. Olson, and Victoria E. Szabo. “Wired! and Visualizing Venice: Scaling up Digital Art History.” *Artl@s Bulletin*. Forthcoming 2015.

Szabo, Victoria E., “Transforming Art History Research with Database Analytics: Visualizing Art Markets.” *Art Documentation* 31: 2 (2012): 158-175.

Databases

Monreale Cathedral: View of the cloister, 19th Century, watercolor. Albertina, Grafische Sammlung, Vienna.

Medieval Kingdom of Sicily: A Database of Monuments and Sites. Project Directors: Caroline Bruzelius and William Tronzo; Project Manager: Paola Vitolo; Project Collaborators: Gabriella Cianciolo, Francesco Gangemi, Luciana Mocciola, Ruggero Longo, Alba Irollo and Joseph C. Williams; Metadata and Image Management Consultant: John J. Taormina; Technical Consultant and Database/Web Developer: David Tremmel.

Dissertations and Undergraduate Theses

Prof. Kristin Lanzoni instructing a student in the Wired! Lab.

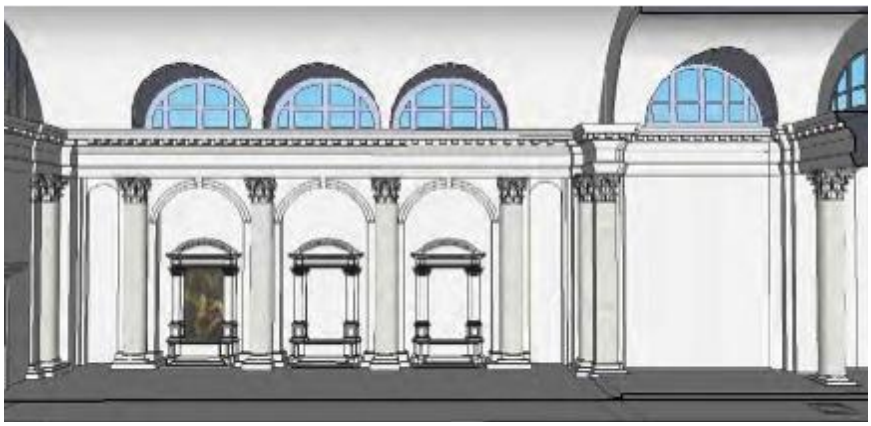
Baltes, Elizabeth P. "Dedication and Display of Portrait Statues in Hellenistic Greece: Spatial Practices and Identity Politics." Ph.D. dissertation, in progress.

Sherman, Erica. "Urban Agents: Confraternities, Devotion and the Formation of a New Urban State in Eighteenth-Century Minas Gerais." Ph.D. dissertation, in progress.

Trahey, Tara M. "A Black-Figure Vase in the Nasher Museum: Visualizing an Iconographic Network between Athens and Vulci in the 6th Century BCE." B.A. Graduation with Distinction thesis, 2015.

Williams, Joseph C. "Architectural Practice in the Medieval Mediterranean: The Church of S. Corrado in Molfetta." Ph.D. dissertation, in progress.

Presentations



A model by Duke first-year students of the interior of the destroyed church of San Giacomo in Venice.

Baltes, Elizabeth P. "In the Round: Using Digital Technologies to Recontextualize Classical Sculpture," University of North Carolina/Duke Classics Colloquium, Chapel Hill, NC. March 20, 2010.

Baltes, Elizabeth P. "The 3-D Model, Double-Spaced with 1" Margins: Reformulating

the Digital Dissertation," Panel Presentation, *Digital Scholarly Communication – Notes from the Wired! Lab for Digital Historical Visualization*, HASTAC 2011 Conference, Ann Arbor, MI, December 2, 2011.

Baltes, Elizabeth P. "Three Art Historians, a Computer Scientist, and a Digital Artist Walk into a Classroom…" Panel Presentation, *Art Historians Interested in Pedagogy and Technology (AHPT)*, Annual meeting of the Southeastern College Art Conference (SECAC), Greensboro, NC. November 1, 2013.

Baltes, Elizabeth P. "A Critique of Digital Modeling," *Computer Applications and Quantitative Methods in Archaeology – Greece Conference*, Rethymno, Greece. March 7-8, 2014.

Bruzelius, Caroline. "Revolutionizing Teaching with Technology," Clark University, Worcester, MA. April 2010.

Bruzelius, Caroline. "What Can Digital Technologies Do for the Humanities?" Annual meeting of Art Libraries Society/Southeast. Duke University, Durham, NC. 2011.

Bruzelius, Caroline. "Teconologia e l'insegnamento," Ca'Foscari University, Venice, Italy. October 2011.

Bruzelius, Caroline. "What Does Technology Have to do with the Humanities?" Massachusetts Institute of Technology, Cambridge, MA. 2011.

Bruzelius, Caroline. *Digital Art History Symposium*, Institute of Fine Arts, New York University, New York, NY. 2012.

Bruzelius, Caroline. "What Does Technology Have to do with the Humanities?" St. Louis University, St. Louis, MO. 2012.

Bruzelius, Caroline. "TEDx Talk" on Technology and Teaching. 2012

Bruzelius, Caroline. "Teaching with Technology," University of Vermont, Burlington, VT. January 2012.

Bruzelius, Caroline. "Tecnologia visuale e la Storia dell'Arte," La Sapienza, Rome, Italy. April 2014.

Bruzelius, Caroline. "Visualizing Venice," *Digital Art History Symposium*. National Gallery of Art, Washington, DC. November 2014.

Bruzelius, Caroline. "Digital Urban History: la storia della città tra ricerca e musei" University of Turin, Turin, Italy. February 2-4, 2015.

Bruzelius, Caroline and Racheal Brady "Digital Technology and the Humanities:" Mount

Holyoke College and University of Massachusetts, Amherst, MA. 2012.

Bruzelius, Caroline, Mark J.V. Olson, Donatella Calabi, Andrea Giordano, Victoria E. Szabo. "Visualizing Venice." *Florentia Illustrata. Digital Mapping and Techniques of Visualizing the Pre-modern Italian City*. Kunsthistorisches Institut in Florenz - Max-Planck-Institut. Florence, Italy. June 17, 2013.

Bruzelius, Caroline and Victoria E. Szabo. "The Lives of Places and Cities: New models of representation and their conceptual implications for the past and present." *Seminario Internazionale: Promosso dagli insegnamenti: Storia dell'architettura e Disegno edile*. Università degli Studi di Padova. Padua, Italy. June 9, 11, and 16, 2014.

Dillon, Sheila, Mark J.V. Olson, and Raquel Salvatella de Prada. "Wired! New Representation Technologies for Historical Materials." Invited Presentation. *C.H.A.T.: A Digital Arts and Humanities Festival*, University of North Carolina at Chapel Hill, Chapel Hill, NC. February 17, 2010.

Dodson, Alexandra and Erica Sherman. "Visualizing Venice." *Poster presentation*. College Art Association Annual Conference. Los Angeles, CA. February 22-25, 2012.

Campo della Carita: hypothetical 3D urban reconstruction.

Dundas, Iara and Elisabeth Narkin. "How Can Visualization Technologies Help Us to Teach and Learn Architectural History?" Panel Presentation, *Connections and Transformations: New Technologies in the Arts and Humanities*. Annual Meeting of the Southeastern College Art Conference (SECAC). Greensboro, NC. November 1, 2013.

Gianighian, Giorgio and Erica Sherman. "Robotics and Cultural Heritage." *RICH 2012: Robotics Innovation for Cultural Heritage*. Venice, Italy. December 3-4, 2012.

Jacobs, Hannah L. "Visualizing the New Woman." Media Arts + Sciences Rendezvous. Duke University, Durham, NC. September 25, 2014.

Lanzoni, Kristin Huffman. "Visualizing Venice: Digital Tools & Urban History," Berlin, March 2015.

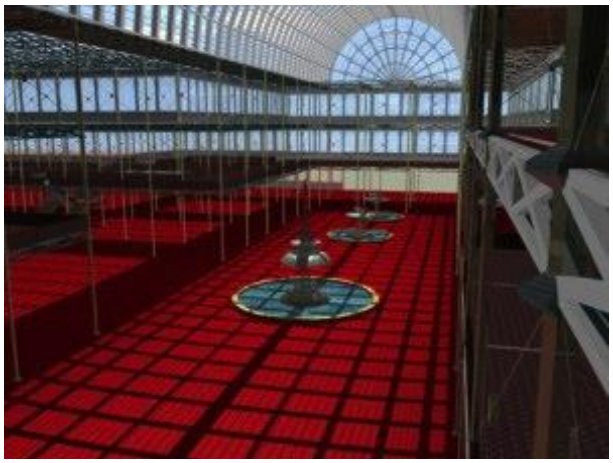
Lanzoni, Kristin Huffman and Victoria E. Szabo. *Temple University Libraries Symposium on Digital Cultures*. Philadelphia, PA. October 21, 2014.

Olson, Mark J.V. "Toward a Process Ontology for Digital Archives." Invited Keynote. *North Carolina Preservation Consortium Annual Conference*, Raleigh, NC. November 2, 2012

Olson, Mark J.V. "Digital Technologies and the Social Life of Things: The Wired Lab at Duke University." Panel Presentation, *Connections and Transformations: New Technologies in the Arts and Humanities*. Annual Meeting of the Southeastern College Art Conference (SECAC). Greensboro, NC. November 1, 2013.

Olson, Mark J.V. "Storytelling with Sources: Open Source Digital Humanities." Invited Lecture. Skidmore College, Saratoga Springs, NY. June 3, 2014.

Olson, Mark J.V. and Elizabeth P. Baltes, Erica Sherman, Victoria Szabo. *Digital Scholarly Communication – Notes from the Wired! Lab for Digital Historical Visualization*, HASTAC 2011 Conference, Ann Arbor, MI, December 02, 2011.



Hypothetical reconstruction of the Crystal Palace.

Olson, Mark J.V. and Caroline Bruzelius. "Learning by Making: Digital Methods and the Wired! Experiment at Duke University." Invited Public Lecture. *Inaugural Lecture, Wesleyan Digital and Computational Knowledge Initiative*, Wesleyan University. March 6, 2013.

Sherman, Erica and Alexandra Dodson. "Visualizing Venice: Tracking Historical Change with New Technologies." *ICERI (International Conference of Education, Research and Innovation)*. Madrid, Spain. November 14-16, 2011.

Szabo, Victoria E. "Visual Studies and Digital Humanities", Invited Speaker, *20th Anniversary of Visual and Cultural Studies Series*. University of Rochester, Rochester, NY, March 30, 2010 - April 1, 2010.

Szabo, Victoria E. "Building the Digital City: New Media Theory Meets Digital Humanities Practice." HASTAC 2013 Conference. Toronto, Ontario. April 27, 2013.

Szabo, Victoria E. “Visualizing the Past: Database-Driven Exploration in Hybrid Reality Systems.” *Digital Humanities Symposium - Florentia Illustrata. Center for Disciplinary Innovation*, University of Chicago, Chicago IL. January 13-14, 2014.

Szabo, Victoria E. “On Site and On Location: Digital Heritage and the 21st Century Museum.” Centre de Recerca i Debat. Museo D’Historia de Barcelona. Barcelona, Spain. June 26, 2014.

Szabo, Victoria E. “Augmented Humanities Practice: The Fluid Site of Annotation.” Society for Literature, Science and the Arts (SLSA). Dallas, TX. October 11, 2014.

Taormina, John J. and Mark Pompelia. *When the Past Collides with the Present: Moving Beyond the Single Classroom Experience via Digital Technologies*. Session co-organizers. Annual Meeting of the Southeastern College Art Conference (SECAC), Durham, NC, October 2012.

Taormina, John J. “Digital Technologies and the Visual Arts: Reconfiguring Knowledge in the Digital Age,” in *Making the Digital Humanities Visual: Opportunities and Case Studies*, Annual meeting of the Visual Resources Association, Providence, RI, April 2013.

Taormina, John J. and Mark Pompelia. *Enhancing Education Beyond the Classroom Experience via Digital Technologies*, Session co-organizers. Annual meeting of the Visual Resources Association, Providence, RI, April 2013.

Study session for the “Lives of Things” in the Nasher Museum of Art.

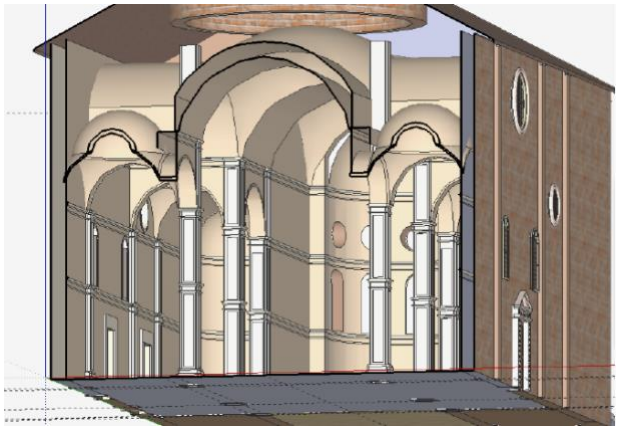
Taormina, John J. and Mark Pompelia. *Connections and Transformations: New Technologies in the Arts and Humanities*. Session co-organizers. Annual meeting of the Southeastern College Art Conference (SECAC), Greensboro, NC, October 2013.

Taormina, John J. *The Politics of Change: Digital Humanities and the Visual Arts*. Session organizer. Annual meeting of the Art Libraries Society of North America. Washington, DC, March 2014.

Taormina, John J. and Jenni Rodda. *Cultural Heritage in a Computational Environment: Making the Digital Humanities Visual*. Session co-organizers. Annual meeting of the

Visual Resources Association, Denver, CO, March 2015.

Notes



San Nicolo di Castello, Venice, destroyed in the 19th century. Reconstruction by Duke undergraduate Alexandra Orvis.

[1] The current Wired! core group consists of Caroline Bruzelius, Sheila Dillon, Sara Galletti, Hannah Jacobs, Kristin Lanzoni, Mark Olson, Victoria Szabo, and John Taormina. See Appendix I for biographies.

[2] www.dukewired.org.

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[4] Sheila Dillon (classical archaeology), Caroline Bruzelius (medieval architectural history), Mark Olson (visual studies/new media), Raquel Salvatella de Prada (visual art), Victoria Szabo (visual studies/new media), and Racheal Brady (computer science).

[5] www.visualizingvenice.org/

[6] Dillon, Sheila, and Elizabeth Palmer Baltes. "Honorific Practices and the Politics of Space on Hellenistic Delos." *American Journal of Archaeology* 117 (2013): 207-46.