

Building a Successful Imaging Project in the Digital Humanities

Breakthrough imaging projects in the Digital Humanities can span many disciplines, requiring a strong technological and collaborative foundation. Dr. Brent Seales' research team from the University of Kentucky will discuss many of the common components and challenges in a successful project by sharing what they have learned developing "virtual unwrapping," a software tool for non-invasively reading damaged texts. Example topics include large datasets and cloud computing, machine learning, the metadata chain and provenance, open source development, and the value of partnerships. The team will show how these pillars enable contributions such as the 2016 reading of the En-Gedi scroll, and are paving the way for future discoveries such as the virtual unwrapping of closed papyrus scrolls of Herculaneum.

Speakers :

Professor W. Brent Seales

Principal Investigator, The Digital Restoration Initiative

Professor & Chair, Department of Computer Science, University of Kentucky



Dr. Seales has been teaching and mentoring students in computer science at the University of Kentucky since 1991. As Principal Investigator of the Digital Restoration Initiative, the focus of his research for the past 20 years has been on restoring and redeeming cultural and historical artifacts from the ravages of time. The challenge of rescuing texts that may be central to Biblical scholarship and the formation of the ancient world is a primary passion.

As a result of his innovations, Dr. Seales has become renowned by collectors and curators across the globe, earning a reputation as "the guy who can read the unreadable." His breakthrough work on the scroll from En-Gedi received international recognition and was featured in *Science Advances*, the *New York Times*, *Le Monde*, and the *Times of London*.

Undergraduate Student Research Team:



Tam Nguyen is a rising senior graduating in 2020, with a Computer Science major and a minor in Mathematics. His focus is on web programming, but he is interested in digital humanities because it applies computer science to further our understanding of human society. The application of new ways of thinking to better reflect the nuances of culture like art and history is engaging and rewarding.



Anthony Tamesi is a senior studying Computer Science and Mathematics, with a minor in Statistics. His focus is on machine learning techniques, particularly generative networks. To him, the most exciting part of digital humanities projects is using software as a tool to move toward the larger goal of uncovering historical artifacts.



Raiffa Syamil is a rising senior studying Computer Science at the University of Kentucky. She has been a part of the Digital Restoration Initiative team since August 2018 and has enjoyed the opportunity to work on a project that has a direct and impactful effect on scholarship outside of her own field. After graduation, she hopes to stay connected to the humanities and pursue a software engineering position in the film industry.



Kyra Seevers is a rising senior at the University of Kentucky majoring in Computer Science and minoring in Sociology and Universal Design. She is passionate about creating software that is accessible to all, and as such, is interested in user experience design and human-computer interaction. Kyra has always enjoyed combining the sciences and humanities, and her exposure to the digital humanities space is no exception. She hopes to continue to collaborate with scholars across the globe in an effort to uncover and make public information once thought to be lost forever.



Chad Nelson is a Senior at the University of Kentucky majoring in Computer Science and Mathematical Sciences and minoring in Business. His interests in Computer Science include web development and app development. He enjoys being a part of the Digital Restoration Initiative because it allows him to connect his two passions--Computer Science and History--by aiding in the creation of software that will uncover history that has been hidden for thousands of years.



Allison Revers is a junior in Computer Science at the University of Kentucky College of Engineering with a minor in French and Francophone Studies. She enjoys the open access and sharing environment of the digital humanities field. Uncovering and understanding humanity's shared history is a driving force of the digital humanities, and she enjoys being a part of this discovery through the Digital Restoration Initiative.

Staff Team:

Christy Chapman

Research & Partnership Specialist, The Digital Restoration Initiative
The University of Kentucky



Christy frames and tells the stories of our research – its technical achievements and broader impacts – to diverse audiences. She also manages the relationships with all our stakeholders, including collaborating academics, partner institutions, student researchers, foundation and philanthropic donors, and media representatives. Her work includes mentoring students in the process of producing and disseminating research results; writing and editing articles, lectures, grant proposals, website pages, and other communication vehicles; and developing proper contractual agreements.

Stephen Parsons:

Technical Lead, The Digital Restoration Initiative
The University of Kentucky



Stephen started with the Digital Restoration Initiative as a student in 2014 and has never fully gotten away. After graduating and working as a program manager at Microsoft, he is now on the team full-time to help set technical goals and translate them into functional technology. He is driven by the team's challenge of pushing the boundary of what is deemed possible and the opportunity to recover knowledge that is often thought to have been lost forever. His current focus is on developing convolutional neural networks to help

with ink identification in micro-CT and in using photogrammetry as a digital restoration too.

Seth Parker:

Project Lead, Digital Restoration Initiative

The University of Kentucky



Seth oversees the day-to-day aspects of software development and works with students to plan and implement technical goals. Having been with the project since 2012, Seth was pivotal in the development of the virtual unwrapping software pipeline. While his interest in computer science pushes him to test the limits of technical achievement, his background in the humanities and media production brings with it a strong desire to restore the knowledge trapped inside ancient documents.