White Paper for

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Enhancing and Sustaining www.slavevoyages.org
(Digital Humanities Implementation Grants program)

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The eighteen-month NEH funding (extended to 2.5 years via a one-year no cost extension) has given www.slavevoyages.org (Slavevoyages) renewed stability and a strong base for future development. In part, this is because the success of the application triggered some matching funds from both Emory and Harvard Universities, and in part because it allowed us to retain and lock-in the services of a software engineer (an Emory Math/CS PhD) who has established his own business and has promised long-term support for future development. The major additional funding has come in the form of cost shares from Emory and, as shown in the accompanying financial report, these amounted to $190,000. Finally, in 2016, the Hutchins Center at Harvard University awarded us $16,000 to enable a Spanish translation of the site. This was in addition to a Portuguese language version of the site which the Fundação Casa de Rio Barbosa of Rio de Janeiro supplied to us gratis after the grant period began, but which we could not deploy because the 2008 version of the site contained no translation widgets.

In our 2015 application we laid out seven issues to be addressed that had emerged since the launch of www.slavevoyages.org in 2008. We have since dealt with five of these and have laid the foundations for dealing with the remaining two when work on the separate NEH award to the Universities of California at Irvine and Santa Cruz (on the Intra-American slave trade) is completed later this year.

On today's internet, a laurel rested on is a laurel withered. Our first and greatest concern, as indeed for almost everyone running a mature scholarly website, is sustainability – a feature of every final report except in our case it was the main point of the proposal and is addressed on page one rather than in the final paragraph. The language of the Voyages code, Java.faces (a version of JavaServer Pages) Technology not widely used today, was already aging in 2015 in the sense that its compatibility with new server operating systems was coming into question. Coding in the python language within a Django framework and building in the latest Apache solr indexing release, our outsourced programmer completed the task well within the eighteen months stipulated in our application. By this we mean that all the functions of the 2008 legacy site were effectively replicated in a test environment but were now driven by a rewritten code with vastly improved performance even with no changes to the front-end. Unfortunately, sustainability is much more than the technical issue of keeping the code compatible with server operating systems. Doing no more than giving the code another ten years of life amounts to kicking the can down the road. The next cycle will become someone else’s responsibility, and, of course, on condition that the Google Analytics report holds up, it may be possible to raise the required soft money once again. But this is no way to run a successful web site, and on this central issue of accommodating (or escaping) the next coding cycle, we have failed. Nevertheless, as explained below, there are some hopeful signs that we will be pursuing over the next few months.

First, we have made more progress on two other forms of maintenance that we think have made it easier for editors/administrators to keep up with. Both the text that appears on the site and the data themselves are subject to maintenance. On the first of these, we have incorporated flat pages into the new code that give editors access to content
without the need of technical intermediaries. Administrators can now access almost all parts of the site from the back end including the data and the source references. At the core of Slavevoyages is, of course, a database of 36,000 transatlantic slave voyages. These data are subject to correction and augmentation by specialists and members of the general public alike. The recoded site incorporates a new and streamlined “Contribute” interface to encourage more participation by users in shaping the database, as well as a completely re-designed editorial platform. This last feature allows editors to evaluate data changes suggested by users, assign them to outside reviewers, and if accepted, to automatically compute the numerous derived and imputed variables that make up almost half the fields available to the public.

Beyond the code, the content, and the uncertainty, there lies the most important question of all. Sustainability is ultimately a question of accommodating the changing scholarly priorities of the institutions associated with the site. While Emory University has committed $40,000 a year for the next three years to maintain the new site and anticipate its migration to the cloud, we are acutely aware that Emory no longer has a specialist on the slave trade on its fulltime faculty - despite the fact that the university has provided a home for, and nurtured, the project over the past sixteen years. Simply put, administrative positions are term appointments and academic careers come to an end. To help create a broader institutional basis of support, we have therefore organized an executive committee for Slavevoyages containing nine individuals, from different universities in the US and UK (see appendix for the list). This committee meets on-line weekly, makes all decisions about the direction and evolution of the site, and has become involved in the minutiae of its development, even to the point of participating in the testing of sections of the new code. It has become the de facto steering committee for the project, but its activities encompass far more than one associates with such a label. The enthusiasm and engagement of this group has obviated the need to hold on-site steering committee meetings (except for one meeting with the intra-American slave trade research group in Irvine where expenses of the meeting were shared). While at present the institutions represented on the committee are not contributing financially to the project, we are exploring options for a multi-institutional support platform – in legal terms, a consortium - that would provide a model for other successful Digital Humanities projects that have exhausted their reserves of development, or soft money. You will hear more from us on this topic.

A second issue that our proposal undertook to address was the antiquated (or more colloquially, clunky) user interfaces that had remained unchanged since 2008. We have modernized the look and feel of all four of these on Slavevoyages so that navigating the site, and, in particular, building complex queries is now possible with considerably less hand movement and greater speed than on the legacy site [“legacy” in this context means the 2008 site]. At the core of this development is adherence to responsive design principles to facilitate the more subtle interaction by users with the site from their devices of choice; page refreshes have become less noticeable because servers now often avoid full-page loads. However, until the intra-American slave trade database is ready, for upload later this year we have chosen not to move the new UI to production. Screenshots of the design are available in the appendix to this report, and we can arrange for NEH administrators to have access to the working UI on our test site if they wish. In the last few months our Google
Analytics reports of traffic through *Slavevoyages* have shown little year on year growth – in sharp contrast to previous trends, and we think this may have something to do with our younger audiences finding the UI’s, let us say, unfamiliar. We believe this will be remedied with the new interface.

A third concern of the 2015 proposal was that slave voyages passed through, or supplied slaves to, many regions where English was not spoken. Indeed, almost three-quarters of the voyages in the database were organized in, and carried their captives to, locations where Portuguese, Spanish and French predominated. Given the rising international interest in the slave trade since 2008, especially in Brazil, it was incumbent on us to do a better job of reaching our potential audience. As noted above, we have now obtained complete Portuguese and Spanish versions of the site’s contents. The former is now in position on the current site, and can be activated at the top right corner of the home page. Users can now toggle between English and Portuguese on every page, and this option together with Spanish will be available on the intra-American (I-Am) slave trade UI when we integrate the intra-American data into *Slavevoyages* later this year. However, we will not upload the Spanish language version of the complete site until we launch the I-Am user interface.

The fourth problem area identified in 2015 was the exclusive focus of *Slavevoyages* on the transatlantic slave trade. The legacy site provided access to three databases: voyage records, estimates of the slave trade that took into account slaving voyages for which no record had survived, and a database of Africans who survived the experience of embarking on a slave ship. Our original proposal was to add a fourth database comprising slave vessels carrying captives from one part of the Americas to another – such voyages usually originating at ports where transatlantic slaving ventures terminated. For many Africans, then, the infamous Middle Passage was the first of two slave voyages that they were forced to endure. At the time, we intended to draw mainly on Greg O’Malley’s database of 7,685 voyages (described in his 2009 article in the *William and Mary Quarterly*), but later in 2015 O’Malley together with Alex Borucki, both of the University of California, submitted a separate proposal to substantially expand that database. The NEH funded the project and at the time of writing it is still underway. At this point we pulled back from our original proposal and focused our efforts on preparing the Intra-Americas (I-Am) user interface and adjusting other parts of the site (the sources, maps, the Contribute page, and the editorial platform) to accommodate the expanded I-Am database. We have worked closely with O’Malley and Borucki (indeed these two are now part of the executive committee and meet weekly with us) in completing this work, along with aligning the geocodes of the two databases. As already noted, we now stand ready to integrate their work into *Slavevoyages* later this year. At that point [www.slavevoyages.org](http://www.slavevoyages.org) will offer databases on Africa (via the African names database), on the middle passage (via the transatlantic voyages database), and on the Americas (via the new I-Am database). Compare this with the first electronic iteration of *Slavevoyages* in the year 2000 (a CD-ROM) that contained a fixed number of transatlantic voyage records. As with its transatlantic counterpart the I-Am database will be open to contributions from users that, after appropriate review, will continually correct and augment its contents.
The fifth issue singled out in our proposal was the editorial platform used to vet and incorporate contributions to the transatlantic database by users. The re-coded platform went into effect in mid-2016 and is now almost two years old. Compared to the two years prior to 2016 the average number of contributions per year has increased, but only by 15 percent, which is lower than what we had been anticipating. Offsetting this somewhat disappointing result is the fact that the contributions are now much easier to review and incorporate into the database. The platform is now ready to be taken over by a new set of editors. While the transatlantic and I-Am versions of the new platform are very similar they cover different fields, and we envisage that there will be two editors for each. O’Malley and Borucki for the I-Am, and Nick Radburn and Daniel Domingues (all four are members of the project’s executive committee). The total number of records in the main database is now 35,994, compared to 35,938 in 2015. However, this relatively small increase does not reflect the extensive back-end editing activity that has occurred over the last thirty months. This has resulted in 15 records deleted because we now know they were not slave voyages, 126 existing voyages merged because it turned out that they had been entered twice (in most cases under differently spelled ship names), 134 new voyages - about which we previously knew nothing - added, and the thickening of the database that has occurred through additional information that has become available about 1,546 existing entries in the database. The Slavevoyages database continues to be very much an “organic” research tool, subject to continual modification. We will continue to explore options aimed at making the Contribution UI more attractive to users.

Sixth in the list of issues on which we based our application was the Slavevoyages estimates database, the UI for which allows users to access our estimate of the actual number of captives carried off or arrived for any combination of year, national flag of the slave vessel, embarkation point in Africa and disembarkation point in the Americas. Most users of our site do not realize that the data on which this UI draws is completely independent of the 36,000 voyages records. The separate estimates database was created in 2008 and the numbers it generates are frequently cited both within and outside the scholarly literature. In 2016 these numbers were subjected to critical examination in a peer-reviewed journal and the subsequent debate on their validity meant that we thoroughly re-worked our 2008 numbers and came out with the same results (see the Journal of World Historical Information entry in Appendix B). As noted above, the additions to the core 2008 database (34,934 ventures v 35,994 today) have been relatively small. We came to the decision that the ideal solution would be to write a program linking the two databases, that would ensure any changes to the core would be transmitted automatically to the estimates. However the estimates database derives from a set of 15 spreadsheets containing 150,000 cells, an SPSS syntax file, and a 30-page research essay explaining our assumptions. Reducing these documents to code would have absorbed more resources than we felt was justified given the relatively limited extent of the data additions. After careful review we decided to await the successful completion of our other objectives before committing to generating a new batch of code. It now appears that we will be unable to link the two databases under the current grant.

The final concern identified in our 2015 proposal was the primitive mapping tools available on www.slavevoyages.org. Users could map the results of a query, but visual
representations of the selection were limited to circle icons and numbers. On the re-coded site, the “maps” tab in both the Search the Voyages and the Estimates UIs now offers an almost complete display of path graphics for any selection that the user chooses, with size of the path driven by the data. It is possible to zoom in to a single port or any combination of ports (regions only in the estimates page) and instantly visualize the transatlantic flows associated with the selection. Clicking on the path opens a window that summarizes the data. This feature makes it possible to replicate many of the 183 maps in David Eltis and David Richardson, Atlas of the Transatlantic Slave Trade (New Haven, CT, 2010), and, of course, much more besides. The home ports of slave ships are not yet among the options offered for map construction, but otherwise, the new map tabs empower the user and come close to making the 2010 Atlas redundant.

In the course of the last thirty months additional instructional tools have become available that we did not envisage at the time of the application. Inspired by Slate Magazine’s dramatic use of the Slavevoyages database in its History of American Slavery series in 2015 (http://www.slate.com/articles/life/the_history_of_american_slavery/2015/06/animated_interactive_of_the_history_of_the_atlantic_slave_trade.html), we created an additional option for data visualization. We have added an “Animation” tab in the Search the Voyages UI that allows the user to observe the movement of individual voyages from Africa to the Americas. Where Slate’s version displayed the aggregated data only, our adaptation allows the user to select any segment of the slave trade for any period. It constitutes a completely new way of representing of the slave trade. In the course of a few minutes it provides an animation of the largest coerced migration of peoples in history of the world. If the animation is halted mid-motion, the user can click on any one of the dots and see a summary of the details of the particular voyage, including the plot of the transatlantic route taken. As with the new path graphics on the map tab, one further click on a paused dot will open up a window that reveals all the currently available data on that voyage. This is an attention-grabbing instructional feature. See http://slavevoyages.org/voyage/search then “Animations” tab.

The Slavevoyages team has also drawn on advances in 3-D visualization technology to create a second instructional tool. Ever since 1788 when it was first published, the image of the Brooks slave ship (voyageid 80666 in our database) has dominated pictorial representations of the slave trade – indeed it is one of the most recognizable images in the history of print culture. It also fails to capture the reality experienced by millions of captives during the middle passage. We have begun an attempt to displace the Brooks poster from its iconic status. Some years ago the architectural drawings of just one of the many thousands of ships used in the slave trade came to light. The French slaver “L’Aurore” was built in Rochefort, a small port south of La Rochelle - from which the vessel would be fitted out in 1784 for its first and only voyage for slaves. The data for this voyage appear in our core database as voyageid 32359. The vessel carried 600 captives from Malembo, located today in the enclave of Angola north of the Congo River, and disembarked 476 survivors in June 1785 in St. Domingue (now Haiti). Two centuries later, architect Jean Boudriot published the complete and original plans for the timberwork of the vessel in a monograph, together with drawings of contemporary artifacts that would have been used
on board. Using *Unity*, a cross-platform game engine program, we have created a 3-D visualization of the hull and decking of the *Aurore*. We have added ropes, sails, complex timberwork and the myriad types of equipment necessary to a transoceanic voyage and are able to allow the viewer to board the vessel and move from deck to deck guided by the voiceover. A link to this video will appear prominently on our new home page when the new UI is moved to production together with the new I-Am database. However, it can be viewed now at [https://vimeo.com/248328596](https://vimeo.com/248328596) [the password is “voyages”]. As with the rest of our site, this re-creation of one of the 35,994 voyages in *Slavevoyages* draws directly and exclusively on the historical record. Together with the *Slate*-inspired feature, it will be one of the two animations of the slave trade available on our home page.

*Slavevoyages* is a mature site and is already reasonably well-known. In this context, it is worth noting that the Mellon Foundation – not known for supporting individual projects – has recently awarded us funding to develop the site further. As a result we are expanding the African names interface to include owners, captains and indeed anyone whom the historical record links to a particular voyage. The “African names database” will be renamed “People of the Atlantic Slave Trade.” In terms of publicity, we are reserving our initiatives until the launch of the re-designed home page and the Intra-American slave trade interface later this year. At this point, Emory University and the Universities of California at Irvine and Santa Cruz will coordinate their efforts. As Appendix B shows, however, the scholars associated with this project have already published extensively on the new site since this project began in 2015. They have also engaged in outreach to the general public around the Atlantic world. Thanks to the NEH, the future of the site is more secure than it ever has been, and if our plan to establish a collective institutional responsibility for the project succeeds, it will also remain in the forefront of Digital Humanities innovation given the range of talented young scholars now working on the project.

Finally, a postscript for other researchers on lessons learned from completing this project:

1. Plan for sustainability even before the project begins. An answer to the question of what will happen to the project when the grant money is fully expended is just as important as completing the project on time and within budget.

2. Pay whatever is necessary to hire a coder who will see the project through the development phase for which you are seeking funding (and preferably beyond).

3. Scholarship by itself is rarely sufficient to sustain a DH site in the long-run. Ensure that your project offers significant instructional capabilities.

4. If the project is to live on the web then ensure that all content can be edited by individuals without coding skills.

5. Any citations to other sites, documents or printed materials should wherever possible incorporate a digitized image of the source,
Appendix A: The Executive Committee

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Appendix B

Peer-reviewed Scholarly Publications by members of the Executive Committee, 2015-18, that draw on the enhanced www.slavevoyages.org

Alex Borucki, David Eltis, and David Wheat (eds.), The Slave Trade to the Spanish Americas (University of New Mexico Press, forthcoming in 2018).
Philip Misevich and Kristin Mann (eds.), The Rise and Demise of Slavery and the Slave Trade in the Atlantic World (Rochester, 2016).
Gregory O'Malley, and Alex Borucki, ”Patterns in the intercolonial slave trade across the Americas before the nineteenth century,” Tempo, 23 (2017): 314-338.
Multi-media presentations/outreach

Philip Misevich (co-producer), Ghosts of Amistad: In the Footsteps of the Rebels (Alexander Street Press, 2015). All data for this film came from Slavevoyages. The film won the John E. O’Connor Prize from the American Historical Association for best documentary for 2015.

Philip Misevich, “Slave Voyages: An Introduction,” St. John’s University, National Historical Publications and Records Commission, Immigration History Workshop, July 25, 2017. As a result of this talk, heavily attended by schoolteachers, Misevich is working with the New York Department of Education to integrate Slavevoyages into the curriculum of NYC public schools.


David Eltis, on camera interview with Juan Gélas in San Francisco, June 24, 2016 for Paris based CPB’s four hour long segments of “Les Routes de L’Esclavage/Slavery Routes,” a TV series on the slave trade shown on French TV May 1 through 10, 2018.


Daniel Domingues da Silva, Radio interview. Rádio Índico 89.5FM, Maputo, Mozambique, October 26, 2017.


Screenshots of New U/I

New Landing page of slavevoyages.org

Slave Voyages

EXPLORE THE DISPERAL OF ENSLAVED AFRICANS ACROSS THE ATLANTIC WORLD

Drawing on extensive archival records, this digital memorial allows analysis of the ships, traders, and captives in the Atlantic slave trade. The three databases below provide details of 36,000 trans-Atlantic slave voyages, 10,000 intra-American ventures, names and personal information. You can read the introductory maps for a high-level guided explanation, view the timeline and chronology of the traffic, or watch the slave ship and slave trade animations to see the dispersal in action.

Special features

Introductory Maps
Overview of slave trade in a series of maps

Timelines of Estimates
Number of captives embarked and disembarked

Animation
View the movement of slave ships across the Atlantic

Slave Ship in 3D
View a 3D rendition of a slave ship

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scroll down to learn more
Scrolling brings clustered content areas to user in addition to drop down menu.
PEOPLE OF TRANS-ATLANTIC SLAVE TRADE

People of the Atlantic Slave Trade provides personal details of 51,491 Africans taken from captured slave ships or from African trading ships. It discloses the African name, age, gender, origin, country, and places of embarkation and disembarkation of each individual.

IMAGE GALLERIES

Explore several hundred images of the people, places, vessels and manuscripts of the Trans-Atlantic and Intra-American slave trades. Where available, each image contains a link to a corresponding slave voyage in the databases and a reference to the original source.