Accra Wala: Mapping Mobility, Culture, and History in Accra, Ghana

<u>Nature of the Request</u>

This proposal for the NEH Digital Projects for the Public Discovery Grant would provide $29,974.00 in funding to support the initial stages of development for the digital humanities project, "Accra Wala: Mapping Mobility, Culture, and History in Contemporary Ghana." "Accra Wala" uses the experiences and practices of Accra, Ghana's *trotro* (or mini-bus) system to address widespread stereotypes about Africa among the American public, engaging individuals in the history and culture of the street in one of the continent's largest and most dynamic cities. In the process, it seeks to open an active and ongoing conversation between American and Ghanaian communities concerning shared issues of urban culture, infrastructure, and development.

This project, which is a collaboration between staff at Michigan State University's MATRIX Center for Digital Humanities and Wayne State University, grows out of Wayne State University professor Jennifer Hart's book, *Ghana on the Go: African Mobility in the Age of Motor Transportation*. Hart's book details the emergence and growth of motor transportation and its significance in the development of an African culture of mobility through the socio-cultural history of African drivers in Ghana. This new digital humanities project draws on this broader historical and cultural study to focus attention on Ghana's capital, Accra, as a space of intense interaction and contestation over the meaning of mobility and the formation of urban cultures.

In particular, this project seeks to create an interactive map of the city's *trotro* (mini-bus) system, effectively bringing the map (and the system it represents) to life by integrating people, their stories, and their cultures of mobility into the map itself. In doing so, "Accra Wala" bridges gaps between academic research and public interest, bringing historical research into the public sphere and engaging directly with issues of contemporary interest and significance in both the US and Ghana. "Accra Wala" will also allow users to explore the culture of Ghanaian streets in ways that are not possible in written texts and historical scholarship, bringing those streets to life through structured itineraries that highlight the images, sounds, and voices of Ghanaian drivers and passengers. The honking of horns, the signaling of drivers, the social behaviors of passengers, and the decoration of vehicles are all essential to understanding the life of the street. As such, this project represents an important digital and public humanities project that raises awareness and improves education about African history and culture among the American public at a moment when the continent's population finds itself the subject of global debates that are often too abstracted from the local realities of everyday life. This project will also provide a model for future public projects, highlighting the power of digital technologies to reshape the function of both maps and archives and engaging in public education on the histories and cultures of the African continent.

The NEH grant would provide crucial financial support for the critical early phases of this project, allowing us to convene a meeting of experts and stakeholders to design and assess the project's user interface and create a prototype for the "Accra Wala" site.

<u>Humanities Content</u>

The infrastructure and practices of mobility in countries like Ghana, and particularly in its capital city, Accra, are influenced by a wide range of global priorities—from the extraction of raw materials to the investment of capital—which are embedded in discourses and visions of "development" and funneled through institutions like the World Bank and the International Monetary Fund, as well as bilateral donors

and non-governmental organizations. What all of these global visions seem to ignore—or perhaps forget—is that mobility is neither an abstract concept nor a new practice, even in "developing" countries like Ghana, which may not possess the same concentration of infrastructural investment or technological advancement. Rather, mobility is deeply rooted in the cultures and practices of everyday life, which are at once part of a long history of circulation, interaction, and exchange and a product of the technologies and priorities of the present, simultaneously engaging with "global" technologies and responding to local practice. While the technology of the automobile certainly changed the meanings and practices of African mobility in significant ways, this new culture of "automobility" was, like its mobile predecessors, what John Urry calls a "mobility-system": "a powerful complex constituted through very many technical and social interlinkages with other institutions, industries and related occupations." The technologies and commodities associated with that mobility system have what Igor Kopytoff termed "cultural biography"; they are not merely the products of industrial manufacturing. The meanings and values associated with those commodities are products of "prior meanings"—"the cultural and social raw material from which 'the social life of things' was shaped." The automobile is a prime example of this process of commoditization, which Jennifer Hart argues can be traced not only in particular moments, but also over the course of the 20th century, through an examination of the lives of drivers. However, Hart also argues that automobility cannot be understood through the process of commoditization alone. The automobile was not only a commodified canvas onto which socio-cultural aspirations were projected. Motor transport technology also reshaped Ghanaian culture and society itself. In other words, automobility is a complete system, linking social and cultural practices of work, family, and leisure with the economic structures of capitalist production and consumption and the political realms of regulation and planning.

In Ghana, contemporary practices of automobility, which are embodied in the *trotro* (mini-bus) system, grow out of a long history of African automobility that dates back to the earliest decades of the 20th century. But such practices are also influenced by centuries-long histories of trade and migration that shaped local social, cultural, and economic institutions and relationships. In other words, to understand the significance of the contemporary *trotro* system and the present mobility challenges in Ghana's capital city, we must understand the broader histories and cultures of movement that inform the daily lives and practices of Ghanaians. Such an approach requires us to look beyond debates over infrastructure models and technological design to think about the way that people move and why.

Trotros—ubiquitous mini-buses, which serve as the primary form of public transportation in Accra—originated in response to public demands in the 1930s and 1940s. Market women and other traders who were the most frequently mobile residents of the city began using wooden-sided trucks known as "mammy wagons" to transport themselves and their goods between their homes and the market. By utilizing this vehicle in the city, early drivers and passengers blurred the boundaries between goods and passenger transport, while undermining colonial visions for urban mobility, which were organized around a municipal bus system and modeled on western transport technologies and infrastructures. Named for their three-penny ("tro" in Ga, the language of Accra's indigenous residents) fare, trotros were not only ubiquitous but were also increasingly seen as cultural symbols of Ghanaian ingenuity throughout the era of nationalism and independence in the 1950s and 1960s. For most urban residents who were unable to afford private vehicle ownership, trotros served as the only accessible form of motor transportation in the city. Economic decline in the 1970s and 1980s limited the accessibility of spare parts and further impinged the state's ability to provide public transport services, making the public even more dependent on trotro drivers. Even though economic liberalization has increased access to vehicles since the early 1990s, at least 85% of Accra's population continues to rely on trotros to move throughout the city. As the city continues to expand, so does the network of trotro routes, which now constitute a complicated web of mobility that winds through even the poorest and most remote

neighborhoods and suburbs of the city. That physical complexity is also manifested in a culture of transportation, with its own unique systems of decoration, signage, naming, sociability, and exchange.

Popular interest in Ghanaian motor transportation is reflected in a burgeoning academic scholarship on the history of motor transportation across the continent. However, this rise in academic studies has also highlighted a wide gap between popular and scholarly understandings of motor transport culture. Recently, scholars have embraced technology as a way to bridge this gap. In Spring 2014, researchers at MIT and Columbia partnered with Kenyan academics and technology specialists to create a map of Nairobi's informal transportation network ([Digital Matatus](#)). This project developed new mobile routing technologies and a new transit map that changed the way that both government officials and the passenger public engaged with the system. While this map highlights the "power of data" and provides an important step forward in mapping mobility in Africa, the result is a decontextualized representation of a system that defies such a simplistic and systematic representation in practice. In other words, the Nairobi map removes people in order to represent a system, but in doing so, it fails to capture the movement, sociability, and creativity that is so central to that system. By detailing this culture of transportation, we can not only more fully understand the uniquely Ghanaian cultures and practices of automobility, but we can also place them in conversation with other well-documented cultures of transportation around the world, including India, Nepal, Brazil, Mexico, South Africa, Kenya, Jamaica, and elsewhere.

In tracing networks and pathways of movement, mapping attempts, but often fails, to capture the dynamism of the street. The two-dimensional nature of conventional maps, which places emphasis on infrastructure rather than experience, makes it difficult for us to engage with the kinesthetic realities and cultures of the street, which shape the way that users move through space. This project seeks to rethink mapping. Particularly in cities like Accra where the conventional labels of a map are often replaced by other forms of navigational and spatial awareness, how might we map the way that people move? And how might we use a map to capture the dynamism and culture of the street?

"Accra Wala" seeks to develop a free, publicly-accessible, interactive website that provides different levels of public engagement. The website will combine base geo-data from OpenStreetMap and trotro data collected by the French Development Agency and Accra Metropolitan Assembly with map tiles from a provider like Mapbox to create a rich multi-layered web map able to display bus stops, lorry parks, and major navigational landmarks. Residents use routes and bus stops to navigate the city both through their use of transportation and as physical markers and means of mapping or marking space in the city in the near total absence of street signs.

The website will utilize data collected through historical and ethnographic research to present spatially-embedded educational and cultural materials in a sort of curated archive, which highlights both the organization of the trotro system as well as the rich dynamism of its overlapping systems and meanings. The markers for major lorry parks on the map will provide a portal for users to access the life histories of drivers, passengers, traders, and others who frequent lorry parks via historical and contemporary photographs of driving culture, maps of the lorry parks themselves, as well as audio and visual evidence of cultural life in the lorry park and on the road, including recordings of itinerant preachers, traders, and drivers' assistants calling and signaling routes.   By embedding these sources within the map, this project serves as a curated archive that is rooted in the spatial experiences of everyday life in the capital city.

The public will navigate the website's repository of sources through "itineraries", which use distinct, curated historical and cultural narratives of movement in Accra to guide users through the digital space

and engage with available resources. As part of our initial prototype, we will develop three itineraries, which highlight both the history of movement in the city and the dynamic culture of movement in contemporary Accra through three powerful narratives about city life in Accra. Each stop or node along the itinerary will be marked on the map and will include different parts of the narrative, but it will also link users to archived content in the map, which they can explore further on their own. Preliminary mockups of the interactive map and itineraries are attached in the <u>Work Sample</u> section of this proposal.

I. Exploring the Past: Popular Nationalism, Ex-Servicemen's Protest and the Accra Riots (1948-1949)

The end of WWII brought increased discontentment among African populations in the Gold Coast Colony. Imperial powers like Great Britain were unable to deliver on promises of post-war opportunity and autonomy for Africans in the colonies. Discontent mounted in January 1948 as Ga chief Nii Kwabena Bonne II organized a boycott of European imports in response to price inflation. Buoyed by popular support for the boycott, ex-servicemen engaged in a protest march on February 28, 1948. The ex-servicemen wanted to deliver a petition to the Governor at Christiansborg Castle, protesting failed British promises of pensions and jobs after the end of the war. As they marched toward the Governor's residence, they were stopped by colonial police who refused to let them pass. The British head of police shot into the crowd, killing three protesters, wounding 60 others. In response, residents in Accra erupted in riots that lasted 5 days. The Governor declared a state of emergency and arrested the "Big Six"--a group of nationalist politicians who led the United Gold Coast Convention--who they blamed for the disturbances. This itinerary traces the path of the ex-servicemen and identifies major sites of the riots and the arrest of the "Big Six."

II. Going to Work: Market trading

Market trading has a long history in Ghana, dating back well before the arrival of Europeans on the Gold Coast in the late 15th century. Populations throughout the region participated in local, regional, and long-distance trading networks, moving agricultural and artisanal products between markets in rural and urban areas. When African farmers embraced cocoa as a highly profitable cash crop at the end of the 19th century, men who had long dominated market trading moved into the cocoa sector, leaving empty spaces in local and regional markets that were quickly filled by entrepreneurial women. Today, market trading provides the most important form of wealth accumulation and financial survival for women in contemporary Ghana. As the country's commercial capital, Accra is the center of contemporary trading networks, and market women represent one of the most powerful images of city life. Market women are some of the city's most mobile residents, moving daily between their homes, suppliers, and market stalls as they provide goods for the city's constantly growing population. This itinerary follows one market woman on her daily journeys, situating the act of trading within the broader life of the city.

III. Moving Culture: A Christian life

Christianity arrived in Ghana with Europeans in the late-15th century. Christianity expanded rapidly with the missionization of evangelical Protestants in the 19th century. Missionization brought not only a new religion but also a new way of life for many converts who were also expected to adopt Victorian mores as part of the broader "civilizing mission" of missionaries and their colonial counterparts. By providing an alternative path to prosperity and

respectability, Christianity was particularly appealing to disenfranchised members of African populations, including women, youth, and slaves, who used their connection to Christianity and western education to establish themselves as respected members of colonial society. Christianity did not disappear with the colonial state. Rather, today Christianity continues to expand in Ghana with new "charismatic" churches that are now sending missionaries of their own to Western countries and establishing branches in cities like New York, Chicago, and London. As of 2000, there were nearly 13 million Christians in Ghana. Christianity shapes not only what happens on Sundays, but it also pours into the streets and the public sphere, shaping economic activity, social interactions, popular culture, and politics. This itinerary follows one committed Christian as she moves around the city, expanding our understanding and expectation of what a Christian life in Ghana looks like.

These three narratives confront three major stereotypes that inform the way that Americans think about the African continent: 1) Africa has no history, 2) Africans are poor and lazy, and 3) Africans are "backward" and "primitive". As individuals move through the itineraries, the curated materials archived and organized within the map present alternative narratives that challenge these stereotypes and allow users to explore more deeply the lived experiences of individuals in an African city. In the implementation phase, we hope to build on these three categories--Exploring the Past, Going to Work, and Moving Culture--by developing additional itineraries ourselves and by soliciting itineraries from the general public that continue to confront stereotypes. In particular, we will encourage teachers and students to use the framework of "itineraries" to shape research projects that could be submitted to the website and published as additional narrative guides. These itineraries, then, provide both a way to navigate the site through narratives of movement as well as a venue for ongoing development of archival content and map interface in order to increase public investment in the project.

Project Format

User Experience Design Process
At this early phase of the "Accra Wala" project, we will develop a complete user experience (UX) design plan for the overarching site including web map, curated heritage resources, and itineraries or tours through the map of Accra. The NEH's Digital Projects for the Public Discovery Grant would support this critical foundation level work. As part of the UX process, we will convene a UX design meeting for 10 content experts and web mapping specialists to provide input on the design direction for the project. Details about the meeting are included in the following section [User Experience Design Meeting]. User experience design (UX) is an iterative research-design cycle. Throughout the course of the Discovery Grant phase of the UX design, Austin Truchan, Head of Design at MATRIX, will convene regular meetings with the "Accra Wala" planning team of Hart, Watrall, and Foley to understand and carry out design goals for the project. At 4-5 separate intervals this planning team will seek input from the Humanities Advisors and meeting participants, suggestions that will be folded into design modifications.

Prior to the UX design meeting scheduled for March 2017, Truchan and the planning team will identify preliminary UX and design goals for the "Accra Wala" site. During this information-gathering phase, the designer will find out the intended purposes of the site. He will also review OpenStreetMap data for Accra and an array of heritage materials the project team envisions curating on the site. Together this information will allow Truchan to enumerate the goals and sub-goals of the site. The MATRIX designer will then turn his research lens outward and conduct a thorough landscape analysis. He will review and evaluate 3-5 similar sites in order to identify successful examples of user interactions as well as functionalities "Accra Wala" could improve on. Based on this background research, the designer will

sketch out 6-8 preliminary screens for the site, which the planning team will use to solicit input from content experts and web map specialists at the March UX design meeting (participants and meeting objectives are described in the following sub-section).

A product of the UX design meeting will be a formal report presenting design solutions for the Accra Wala site. The planning team will share this report with meeting participants and the remainder of the Humanities Advisory Board. We will also convene a Zoom video conference where Truchan will walkthrough the solutions to make sure all areas of the site and interactions are accounted for. Truchan will integrate modifications into the report and use it to write an exhaustive features list. This list includes every functionality that the team imagines the site to include. Time will be spent carefully considering the list of features, ensuring that no features are missed, that all features are truly necessary, and then removing or limiting superfluous features. Based on the features list, the designer will create a site map that incorporates all of the pages and features requested by the planning team. This will allow the designer lay out site page by page, ensuring that every feature and page is accounted for. Ideally, this will eliminate future feature creeping. Again we will send out the site map to meeting participants and the Humanities Advisory Board and integrate input into updates/modifications.

Next, the designer will develop wireframes for a Desktop / Laptop display at 1024px wide. Wireframes are the initial, bareboned blueprints of the potential site layout, page by page, based off of the site map. They are visual representations of how each page of the site could look, without color, imagery and styling. The wireframes allow the team to visualize what the site could look like, without worrying over style. This allows for focus and collaboration only on the layout of the pages. Using a suite of design tools, Truchan will mockup and then prototype wireframes for map interactions and all pages of the "Accra Wala" site. Using the collaboration features of the InVision tool, the designer will first gather input from the planning team and then will share the wireframes with the meeting participants and Advisory Board. Through another videoconference, Truchan will show the wireframes and garner greater feedback and clarification about issues that he will use to make final modifications to the wireframes. After developing responsive wireframe layouts for tablet and phone screens, the designer will prototype visual mockups. Visual mockups apply styling to the finalized wireframes. Colors, fonts, imagery, spacing and high quality detail show exactly how the digital product will look. Through an iterative feedback - modification cycle including a full walkthrough of all screens, the designer will collect input from the Advisory Board and planning team, until responsive mockups for desktop, tablet, and phone are developed and approved.

To close out the UX design development process, Truchan will annotate mockups with information about site functionality and create a visual style guide specifying color hex numbers, fonts, and information about heading sizes. The designer will deliver a UX design process portfolio for the "Accra Wala" site with the landscape analysis, initial report on proposed UX design, features list, site map, wireframes, mockups, style guide, and notes on iterative feedback cycles (those that led to substantive modifications and alterations). These materials will constitute a prototype for the site's user experience.

User Experience Design Meeting
The "Accra Wala" project will convene one **user experience (UX) design meeting** at Michigan State University in East Lansing, Michigan. The purpose of the two-day meeting is to bring together 10 content experts and web mapping specialists to provide input and direction on user experiences and interactions for the project site. The planning team and designer will share preliminary UX /design goals and background research generated from a landscape analysis of peer or completing sites. In addition, we will ask the meeting participants to examine sample heritage materials and itineraries the project plans to

include on the "Accra Wala" website. These discussions will also inform future applications for more significant funding through academic, governmental, and private institutions.

The UX design meeting is planned for two days in March 2017. The meeting sessions will be hosted at MATRIX. On site participants will include the following Humanities Advisory Board members: Trevor Getz (San Francisco State University), Ato Quayson (University of Toronto), Jackie Klopp (Digital Matatus), Steven Feld (University of New Mexico), Joseph Oduro-Frimpong (Ashesi University), Jon Voss (History Pin), Jeffrey Paller (Digital Matatus), Yasmine Abbas (Impact Hub Accra), and Erica Hagen (Map Kibera). We are also actively recruiting a technical expert from the open web mapping community. Four other Humanities Advisory Board members are willing to participate in the meeting remotely, including Ayorkor Korsah (Ashesi University), Yaw Odoom (Trotro Diaries), Victoria Okoye (African Urbanism), and Simon Saddier (French Development Agency).

At the initial session of the two-day meeting, participants will learn about the origins of the "Accra Wala" project and long-term objectives for the broader project. Participants will then examine heritage materials that will be curated on the website. In addition to video footage of trotro lorry parks, oral histories with drivers and passengers, and photographs of signage, participants will be able to view trotro route data, OpenStreetMap data, and Accra landmark data. During this second session, we want to show the content experts and web map specialists the range of materials and data that "Accra Wala" will weave together on the project site.

During the third session, the designer will formally present the landscape analysis. This will be a walkthrough of 3-5 peer or competing sites (or relevant pages of sites) interspersed with comments about successful models or problematic examples of user interactions, information flows, and other features we should consider for the "Accra Wala" site. The designer will use this presentation to invite feedback from participants regarding more promising aspects of these other sites. After this session, the planning team and designer will debrief about the input and prioritize topics needing further discussion. On day two the designer will share preliminary designs for 5-6 screens. The designer will use these screens to prompt participants to provide structured and targeted input about the main parts of the site. The planning team expects to gather feedback about five aspects of the site: navigation, curated content (the interconnected photos, video footage, and oral histories at will appear at trotro stops, lorry parks, or other significant nodes), pathways through the spatial terrain (historic and contemporary itineraries that drive users through multiple spaces on the map), educational or pedagogical areas of the site and social media or crowd-contributed content like comments about "Accra Wala" nodes or Tweets about stops on the routes. Session four will be a combination of presenting preliminary UX designs, clarifying the purpose of these interactions, and brainstorming new ideas to add to the site. This is one of the most important sessions planned for the meeting.

Session five is intended to flesh out the structure and content of the itineraries, or narrative pathways through the map. The Accra itineraries drive users through thematically or historically related nodes on the map. We are considering visualizing the itineraries in a way similar to MapBox's Iditarod 2014 (https://www.mapbox.com/blog/playback-the-iditarod-with-turf/).

At this time we have rough plans for three itineraries, detailed above. The planning team will prepare groupings of landmarks, trotro stops and routes, video, images, and oral interviews related to each of these three itineraries. Meeting participants will evaluate these materials and suggest what would be useful to include in the itineraries. We are seeking guidance on the number of heritage resources to include for various itinerary nodes, suggestions about supporting contextual information (including metadata) as well as ideas for displaying these resources within the preliminary UX design frame. In short

we are looking for some curatorial guidance for the itineraries, as these will need to be fully developed for the next phase of the "Accra Wala" project.

While the lifecycle of this project is 12 months, the processes and structures established through this design meeting will inform the project's development over at least the next three years and will create a foundation for sustainable site management, dynamism, engagement, and growth over a much longer term.

<u>User-generated Content</u>

In later phases of the project, we hope to include forms of social media engagement, which will enable the American and Ghanaian publics to directly contribute to the website and help shape the narrative presented. While it has not yet been determined what final form social media engagement may take, we anticipate that it will include a platform for integrating Instagram or Twitter posts connected to landmarks and lorry parks. Social media will allow us to include local voices in the production of the archive and the constantly evolving map interface, as users post about their own experiences in Accra. Social media will also make it possible for American and Ghanaian public audiences to engage in more direct conversations about issues such as infrastructure, technology, mobility, and culture which shape so much of the experience of city life in Ghana, in the US, and in cities around the world. Ultimately, we hope that the "Accra Wala" site becomes a vibrant place to not only interact with the past but to envision vibrant futures and address shared challenges as part of a global community. In the current phase of the project, the planning team is designing a user experience that will integrate crowd-sourced and social media content into the site's interface. Based on discussions with the UX design meeting participants and Advisory Board members, we will begin considering mechanisms we will use to evaluate the quality and appropriateness of including user-generated content. At this early stage, we envision a queueing and approval system through which a content expert or project leader would review and then accept public contributions to the site. In this way, the planning team would ensure that "Accra Wala" is populated with quality resources that are relevant to the goals of the project and purposes of the website.

<u>Audience and Distribution</u>

For an American public, the rich social and cultural history of Accra's trotros provides an important entry point for better understanding the African continent. Trotros highlight the dynamism of African cities like Accra, from vibrant cultures of entrepreneurialism and the frenetic energy of the street to the long histories of cosmopolitanism and the diverse (and often overlapping) cultures of religion, ethnicity, and class that mark the urban landscape. This dynamism contrasts sharply with widespread images of the African continent as a homogenized, dehumanized, empty, blank, largely rural space that exists outside of the processes of global history and culture. Over the last fifty years, Africanist scholars have sought to correct this stereotype in university classrooms and academic publications. And yet today, even as most universities incorporate African Studies courses into their curriculum, the stereotyped images remain, anchored to their 19th century imperialist roots even as they continue to take on new and often contradictory forms in popular culture, public policy, humanitarianism, and social activism. In an era of social media activism, where US-based organizations like [Bring Back Our Girls](#) and [Kony 2012](#) influence public policy and news coverage of Africa and mobilize large-scale public support, the need to address these stereotypes through an expanded form of public outreach is more important than ever before. These unidirectional interactions are important, but, in moving past the stereotyped images of the continent, this project also encourages more inclusive, intercultural conversations about shared challenges, connecting Americans and Ghanaians as part of a global community.

Motor transport culture is an ideal lens through which to engage a public audience in the US, a country whose social, cultural, and economic identity is intertwined with the rise of the automobile. The importance of the automobile in both the US and Ghana connects these two cultures, but it also highlights their differences, raising questions about the universality of values like private car ownership that Americans often take for granted. In following the itineraries of Accra residents and exploring the culture of automobility in which they are immersed, Americans can better understand the realities of everyday life in a city like Accra--a reality that is increasingly common across a rapidly urbanizing continent. Through daily movement, Accra residents negotiate a wide range of issues that are simultaneously local and global manifestations of the challenges associated with urban life, connecting them to residents in cities like Detroit, Chicago, Cleveland, or Baltimore.

The project will be disseminated through academic conference presentations to US and European academics, publications in scholarly journals, and popular news websites (including "Ghana on the Go", "African Urbanism", "Monkey Cage" (Washington Post), "Goats and Soda" (NPR), *The Atlantic*, *Time*, etc.), and our own social media accounts. The site will also be directly linked to the publisher's website for Jennifer Hart's book, *Ghana on the Go: African Mobility in the Age of Motor Transportation* (Indiana University Press). Finally, we hope to work with major libraries and museums like the Reuther Archive, the Detroit Public Library, the Schomberg Center, the Wright Museum, the Detroit Historical Museum, the Henry Ford Museum, the Field Museum, the National Museum of African Art, and the Museum of Science and Industry to schedule public workshops where we will present the site and solicit user feedback from public audiences.

We will work with organizations like Trotro Diaries, African Urbanism, Accra Soup, Impact Hub Accra, the Accra Metropolitan Assembly (AMA), and OpenStreetMap Ghana to raise awareness about the project in Ghana through social media networks and conventional media sources (radio, newspaper, television). Faculty and students at Ashesi University and Wayne State University will be directly involved in the project and will participate in collaborative presentations in other technical and research universities in Ghana and the US (see State of Project for more about this collaboration). Finally, we will work with the Ghana Private Road Transport Union (GPRTU) to raise awareness about the site among drivers in Accra.

Rights, Permissions, and Licensing

This project has already been endorsed by the Ghana Private Road Transport Union and Ashesi University. Dr. Hart is currently working to secure Human Subjects approval from the Wayne State University Institutional Review Board for the data collection portion of the project. Data collection up to this point is covered under a Human Subjects project approved by Indiana University's Institutional Review Board as part of Dr. Hart's dissertation/book project.

The project will make use of open source software like OpenStreetMaps, Kora, and QGIS to complete the project. These tools and technologies will be acknowledged on the project website. The website will also acknowledge the open data of trotro routes, bus stops, and lorry parks provided by the French Development Agency's Accra Mobile project.

Humanities Advisers

Our humanities advisers are distinguished by their commitment to innovative, interdisciplinary research in the humanities for both academic and public audiences. In addition to specialists in humanities

disciplines, we also seek to draw in innovative practitioners who pursue humanities questions through the realms of urban planning practice, architecture, or technology.

Dr. Yasmine Abbas is a French certified architect and Professeur Associé at the Ecole Spéciale d'Architecture (ESA) in Paris, who works internationally across the fields of art and architecture, business ethnography and sustainability. Dr. Abbas holds a Master of Science in Architecture Studies from MIT (SMArchS 2001) and a Doctor of Design from the Graduate School of Design at Harvard University (DDes 2006). She is founding director of Panurban Intelligence, a global strategic design consultancy that leverages design research to generate business intelligence and drive urban innovation. Dr. Abbas is also the co-organizer and co-leader of Impact Hub Accra, a non-profit that facilitates education, connection, innovation, investment, and incubation among entrepreneurs in Ghana, and the director of Pan-Urban Intelligence. In addition to her expertise in running collaborative projects, Yasmine also brings expertise from her own project with architect D.K. Osseo-Asare documenting communities affected by e-waste in Agbogbloshie, Accra with the Agblogbloshie Makerspace Platform, which won a Rockefeller Foundation Centennial Innovation Award.

Dr. Gracia Clark is a Professor of Anthropology at Indiana University, who has a long history of work in both the academic and development worlds. Clark is a highly regarded expert on the culture and economy of market trading in Ghana, and she will provide important insights on how we might best incorporate the experiences of traders and others associated with lorry parks as spaces of movement, exchange, and commerce. She also has extensive experience collecting oral histories as part of digital humanities projects, as a participant in two different DH projects on market traders and religion in Ghana.

Dr. Steven Feld was appointed Professor of Anthropology and Music at the University of New Mexico in September 2003 and promoted to Distinguished Professor in 2005. Feld's academic research principally concerns the anthropology of senses, sound, and voice, incorporating studies in linguistics and poetics, music and aesthetics, acoustics and ecology. Over the last ten years or more, Dr. Feld has worked directly with drivers in Accra through a number of film and audio recording projects. Feld produced Por Por: Honk Horn Music of Ghana for Smithsonian Folkways Recordings, a US government gift to Ghana for the 50th anniversary of independence in 2007. His feature-length documentary film, A Por Por Funeral for Ashirifie, won the Prix Bartók at the 2010 International Film Festival Jean Rouch in Paris. Feld's expertise will provide important perspective on how best to share information and resources with communities of drivers as well as what might be useful for drivers as users of the site. Prof. Feld also hopes to contribute some of his own video and audio recordings, photographs, and other materials to the site.

Dr. Trevor Getz is a historian of Africa whose interests include interdisciplinary methodologies, critical theory, and popular ways of thinking about the past. Most of my work revolves around issues surrounding gender and slavery in West Africa, although I have also published in the fields of world history, heritage studies in South Africa, the scholarship of teaching and learning, and modern imperialism and colonialism. Getz is the author of a graphic history, *Abina and the Important Men*, which uses the conventions of a comic book to talk to engage students in new ways with the history of slavery in Ghana. *Abina and the Important Men* has also recently been developed into an app, and Getz's experience in that process will be invaluable as we also think about how to create a mobile version of this site.

Dr. Joshua Grace is a historian of Africa with a particular interest in cultures of technology, mobility, and development. His research examines the politics of development in Tanzania from the 1870s to the 1980s by showing how Africans transformed cars and roads from technologies of imperial power into

tools for pursuing different visions of social and economic change. By focusing on the use and modification of automobiles by Africans, his work provides an alternative to narratives of technological backwardness and economic underdevelopment that dominate representations of twentieth-century Africa. His dissertation, "Modernization Bubu: Cars, Roads, and the Politics of Development in Tanzania, 1870s-1980s" (2013) examines modernization from the perspective of the mechanics, drivers, and passengers who used technology and mobility to contest hierarchies of race, class, and gender. He is a recipient of Fulbright and Andrew W. Mellon research fellowships. Dr. Grace will provide an important perspective on the history of technology, infrastructure, and development throughout Africa and around the world.

Erica Hagan is the co-founder of Map Kibera, which empowers young residents of the Kibera district of Nairobi, Kenya to create first free, open digital map of their community. The project has now grown into an interactive community information project, which seeks to make otherwise marginalized communities more visible through mapping. Through Map Kibera, Erica has worked closely with Open Street Map. She is also the co-founder and director of the GroundTruth Initiative

Dr. Jackie Klopp is an Associate Research Scholar at the Center for Sustainable Urban Development at the Earth Institute at Columbia University and a founding member of the Digital Matatus consortium which has produced the first open transit data and public transit map for Nairobi's quasi-formal "matatu" transit system which won the award at the Media Architecture Biennale 2014. She helped start the blogs CairofromBelow and nairobiplanninginnovations.com to provide more grounded and open urban information to citizens. Klopp is also a founder and Board member of the Internal Displacement Policy and Advocacy Center (IDPAC) based in Nakuru, Kenya. She is currently writing a book on the politics of planning in Nairobi.

Dr. Ayorkor Korsah is a professor of computer science and robotics at Ashesi University, where she works to develop humanities-centered computer science and engineering curriculum, challenging students to think about the impact of their work in addressing social, cultural, and economic problems. She is working in partnership with Prof. Frimpong and Prof. Hart to develop a study abroad course, "African Cities," which would pair American and Ghanaian students in collaborative data collection projects that would contribute to the "Accra Wala" content.

Kirstie Kwarteng co-founded The Nana Project in 2014. The Nana Project's mission is to preserve, archive, and share firsthand accounts of Ghanaian history. They give Ghanaians of all backgrounds and beliefs the opportunity to record the stories of their people. In doing so, they seek to remind one another of our shared culture, to strengthen and build connections, to teach the value of listening, and to weave into the fabric of our culture the understanding that our history matters.

Dr. Carolyn Loh is an Assistant Professor in the Department of Urban Studies and Planning at Wayne State University. She studies planning practice, implementation, and local and regional land use decision-making. Loh, an expert in urban planning and GIS, is a co-author with Prof. Hart for a related academic project on the history of trotros and the politics of urban planning in Accra. She will provide important global context for the more practical dimensions of the project and their connections to the humanities.

Yaw Odoom is the founder of the successful "Trotro Diaries" project, which provides a social media space where passengers share their subjective experiences of transport. Yaw will help us to promote the project among passengers and help us organize publicity to engage passengers in Ghana.

Dr. Joseph Oduro-Frimpong is a professor of humanities at Ashesi University, who is an expert on street signage. Dr. Oduro-Frimpong's research investigates Ghanaian popular media (political cartoons, video-movies, etc.). He is particularly interested in teasing out how such tangible visual/aural formats (re)-mediate intangible cultural ideas and beliefs, as well as partake in democratic socio-political issues. Some of his works has appeared in: Encyclopedia of Social Movement Media (2011), Popular Culture in Africa: Episteme of the Everyday (2014), International Journal of Communication, and African Studies Review. While he will contribute data of his own, he will also help us train students for data collection as part of the "African Cities" course.

Victoria Okoye work at the intersection of media and communications, community engagement and urban planning, living and working in Accra, Ghana. Over the years, she has worked with a technology park development initiative in Abuja, to research water management in Lagos, to engage community stakeholders on urban transport and land use in Accra, Ghana and on agricultural, employment and development opportunities in Kaduna, Nigeria. Currently, she manages communications, media design and mapping for a project improving water, sanitation and hygiene across Ghana. The manager of the website African Urbanism, Okoye is an urban planner who is extensively involved in current development plans in Accra, including the Bus Rapid Transit system. Her website is an excellent example of an urban planning practice that engages with both the humanities and digital technologies. She will promote the project among the wide readership of her blog, but her connections and insight will also help us think about how best to engage the urban planning/development community.

Dr. Jeffrey Paller is the Earth Institute Post-Doctoral Fellow at the Center for Sustainable Urban Development at Columbia University. Jeffrey Paller's research examines the practice of democracy and accountability in urban African slums. He has conducted fieldwork in Ghana, Kenya, and South Africa. Prior to joining the Earth Institute, he was a visiting lecturer of politics at Bates College where he taught courses on cities, slums and democracy; African politics and development; and democratization in the world. He received his PhD from the University of Wisconsin-Madison in the department of political science in 2014. His research interests include African politics, sustainable urban development, democratic theory, and field research methods. His scholarship has been published by Polity and African Studies Review. He served as a Research Associate at the Center for Democratic Development in Ghana, and has been funded by the Social Science Research Council, National Science Foundation, and the University of Wisconsin. Prior to graduate school, he received his B.A. from Northwestern University and served as a Program Coordinator for the Illinois Education Foundation.

Dr. Ato Quayson is a Professor of English and Director of the Centre for Diaspora and Transnational Studies at the University of Toronto. An expert on postcolonial African culture and literature, Quayson wrote a well-received book, *Oxford Street, Accra*, which explores life on and alongside the road. His expertise on street life and roadside signage will help us think more clearly about the possible constituencies, spaces, and experiences represented in the map. He also has a number of connections among residents in the historic core of Accra, which will be essential in encouraging submission of materials from Accra residents.

Simon Saddier, an official with the French Development Agency, has served as team leader for a mapping project, which documented trotro routes and stops throughout Accra in collaboration with the Accra Metropolitan Assembly (AMA). Saddier's open data will enable us to create the base of the map, and he will help us identify potential collaborators within the political and development/aid communities in Ghana. We hope that his participation will also allow us to engage the development community directly about the history of infrastructure and urban planning in Accra, as well as the challenges and visions of drivers and passengers in the city.

Jon Voss is the Director of Strategic Partnerships at Shift, a charitable foundation and trust company that designs consumer products to drive positive behavior change, influence social and cultural norms and help prevent complex, expensive problems developing. As Director of Historypin and co-founder of the International Linked Open Data in Libraries, Archives and Museums Summit, Voss is an expert and innovator when it comes to working with Open Data on the web. His past projects include LookBackMaps, a location-based web and mobile app, and Civil War Data 150, which shares and connects Civil War data across local, state and federal institutions. His expertise in digital mapping and working with Open Data will be instrumental in designing the Accra Wala map.

Digital Media Team

Jennifer Hart (Project Principle Investigator) - Wayne State University
Assistant Professor of African History at Wayne State University, has conducted nearly 10 years of fieldwork on transportation culture in Accra, Ghana. Through research for, *Ghana on the Go*, Hart has connections with the major drivers' union in Ghana as well as all of the major union branches. She has conducted more than 90 oral history interviews with drivers and passengers in a number of languages and has extensively documented the culture of the road, including vehicular slogans, music, and religion. An expert on Accra's transport culture, Hart writes and presents at a wide range of venues and outlets in the US, Ghana, and Europe

Ethan Watrall (Project PI) - Michigan State University (MSU)
Assistant Director at Matrix: The Center for Digital Humanities and Social Sciences and Assistant Professor in the Department of Anthropology. Watrall's primary interests lie in the domain of digital cultural heritage, with particular focus on mobile and web mapping applications (mostly within the context of public outreach and engagement). Watrall has written on user experience design, standards-based web design, and trains cultural heritage professionals in the use of digital tools. He will lead the project's technical development and oversee design tasks.

Catherine Foley (Director of Digital Library & Archive Programs, MATRIX) – MSU
Project manager and digital librarian with expertise in metadata standards and digital repository development. Foley manages several digital repository projects with cultural heritage resources from Africa, including the Archive of Malian Photography, an NEH-funded project to digitize, catalog, preserve, and render freely accessible 100,000 rare images from the original archives of four professional photographers in Mali.

Austin Truchan (Head of Design, MATRIX) - MSU
Project designer, Truchan translates complex user flows into simple and intuitive visual user interfaces, and develops high fidelity prototypes in order to collaborate design vision between project managers, clients and developers. Truchan works closely with development teams to ensure that the visual design and experience is properly implemented from concept to reality.

State of the Project

As of July 2016, Prof. Hart will have collected approximately 90 audio interviews, 3 miscellaneous audio recordings, 8 video oral histories, 4 video lorry park tours, and hundreds of photographs and newspaper articles, collected in the course of research for the book, *Ghana on the Go*. The project has an established social media presence, has secured support from the leaders of the Ghana Private Road Transport Union in Accra, and has engaged in community stakeholder meetings at Ashesi University and at 4 major lorry parks in Accra. We are currently creating metadata for these sources. A copy of our preliminary

descriptive metadata fields is attached in the <u>Work Sample</u> section of this proposal. We also have established working relationships with faculty and administration at Ashesi University and are in the process of finalizing plans for a summer study abroad program which would involve students in research and data collection for this project.

In 2015, Dr. Hart successfully applied for $5,000 in funding for summer salary from the Humanities Center at Wayne State University and $20,000 from the Research Enhancement Program at Wayne State University, which funded the preliminary stages of data collection for this project. The Research Enhancement Program application was evaluated by three outside evaluators, including one digital humanist and two African historians.

Also in 2015, a collaborative project called AccraMobile between the Department of Transport, Accra Metropolitan Assembly, Concordia University, and Agence Française de Développement (AFD), used smart phones and apps to collect data on Accra's transportation system. This project aggregated two sets of data for the trotro taxi system in the area of the Accra Metropolitan Assembly. First is data for 315 trotro routes. There are shapefiles for each direction of a route. Route data includes attributes for route origin, destination, trotro operator, and fares. The second set of data is tied to stops made by the trotro, including the name of the stop, location, and the number of passengers that that got on and off of the trotro at a given stop. This data is contained in General Transportation Feed Specification (GTFS) which AccraMobile has agreed to share with our project. That data was released to the public as part of a trotro hackathon on May 27, 2016. A copy of the AccraMobile map is attached in the <u>Work Sample</u> section of this proposal.

<u>Work Plan</u>

January-March 2017
- Organize <u>logistics</u> for user experience (UX) meeting -- flights, hotels, etc. [Foley]
- Set up <u>communications</u> system: (Zoom conference, Basecamp -- project management, InVision -- design prototyping tool with collaboration features) [Foley, Truchan]
- Identify preliminary <u>UX and design goals</u> [Foley, Hart, Watrall]
- Complete <u>landscape analysis</u> -- review/critique peer or competing sites [Truchan]
- Conduct <u>UX design meeting</u> [Foley, Hart, Truchan, Watrall]

April-June 2017
- Draft and share <u>report</u> about proposed UX design solutions [Truchan]
- Write exhaustive <u>feature list</u> for project site [Truchan]
- Design <u>site map</u> for site based on feature list [Truchan]
- <u>Update site map</u> based on input from project leaders [Truchan, Advisory Board]
- Sketch and distribute <u>wireframes</u> of map interactions and all site pages [Truchan]

July-September 2017
- Solicit feedback and <u>update wireframes</u> -- iterative cycles of modifications [Foley, Hart, Truchan, Watrall, Advisory Board]
- Develop and approve <u>responsive layouts</u> for desktop, tablet, phone [Truchan]
- Prototype <u>mockups</u> based on updated wireframes [Truchan]
- Solicit <u>input on mockups</u> based on walkthrough of screens [Foley, Hart, Truchan, Watrall, Advisory Board]

October-December 2017
- <u>Modify mockups</u> and get approval for final UX design [Truchan]
- Develop and approve <u>responsive mockups</u> for desktop, tablet, and phone [Truchan]
- Annotate mockups with notes on <u>site functionality</u> [Truchan]

- Create <u>visual style guide</u> for site specifications (color hex codes, fonts, headings) [Truchan]
- Deliver <u>UX design process portfolio</u> for site including landscape analysis, initial report on proposed UX design, features list, site map, wireframes, mockups, style guide, and notes on iterative feedback cycles (those that led to substantive modifications and alterations) [Truchan]

<u>Organization Profile</u>

Michigan State University (MSU)
Founded in 1855, MSU is the nation's pioneer land-grant university and one of the top research university's in the world. Home to nationally ranked and recognized academic, residential college, and service-learning programs, MSU is a diverse community of dedicated students and scholars, athletes and artists, scientists and leaders. The university works every day to advance the common good in uncommon ways. MSU tackles some of the world's toughest problems to find solutions that make life better.

MSU's engagement in Africa began in 1960 with a partnership to build Africa's first land-grant university, the University of Nigeria (Nsukka). African studies developed at MSU out of this engagement on the continent of more than 200 person-years of faculty time. Partnerships with African colleagues and institutions still are essential to strengthening MSU's scholarship about Africa and contributing to high-priority research of African colleagues. Collaborating with African partners also is crucial to addressing African development needs. Significant MSU partnerships have developed over the past 40 years in many parts of the continent, including Ethiopia, Malawi, Mali, Senegal, South Africa, and Zimbabwe.

MATRIX: The Center for Digital Humanities and Social Sciences
A research center whose mission is to serve as a catalyst for— and incubator of —the disciplines emerging from the integration of the humanities and social sciences with information technologies. MATRIX exists on the campus of MSU and seeks to provide training and support for computing and new teaching technologies in the humanities to units both within the University and around the world.

MATRIX was founded in 1994 in order to host H-Net and its pioneering online book review journal H- Net Reviews in the Humanities and Social Sciences. MATRIX's mission soon expanded, however, and in a short time MATRIX was recognized by the American Council of Learned Societies as a leading national research center for cyberinfrastructure in the humanities and social sciences. Today, MATRIX has an annual budget of $250,000 and brings together 16 faculty and staff members, 20 student employees, and graduate fellows to maintain the center's 15 digital library projects and further our mission of exploring and enabling the application of digital technologies to the research and teaching of the humanities.

Wayne State University
Founded in 1868, Wayne State University is a nationally recognized urban public research university whose mission is to create knowledge and prepare a diverse body of students to excel in an increasingly complex and global society. Wayne State's research expenditures place it among the nation's top 50 public universities.

The University Research Corridor (URC)
One of the nation's top academic research clusters and leading engine for innovation in Michigan, the URC is an alliance of Michigan State University, the University of Michigan and Wayne State University. Among the top eight U.S. academic research clusters to which the URC benchmarks itself each year, the URC ranked second in the Innovation Power Ranking.